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Referencia: Solicitud de PCT Patente de Invención denominada **COMBINACIÓN HERBICIDA QUE COMPRENDE BENTAZONA, SULFENTRAZONA Y HALOSULFURÓN.**

Asunto: Respuesta al Requerimiento No. 7300 de 13 de mayo de 2022.

Expediente NC2021/0006091

Juan Carlos Cuesta Quintero, mayor de edad, identificado como aparece al pie de mí firma, obrando en mi calidad de apoderado de **UPL LIMITED**, doy respuesta al Oficio No7300 de 13 de mayo de 2022, bajo los siguientes términos:

1. De la solicitud de patente

1.1. Título

Con objeto de solventar la objeción expuesta en el Oficio en relación con el título, por favor, modifiquen el título en línea con la sugerencia de la Examinadora (ver apartado 4.2 del Oficio), es decir, como:

“COMBINACIÓN HERBICIDA QUE COMPRENDE BENTAZONA, SULFENTRAZONA Y HALOSULFURÓN”.

1.2. Reivindicaciones

1.2.1. Modificaciones

En respuesta a las objeciones del Examinador, las reivindicaciones han sido modificadas en línea con las reivindicaciones concedidas recientemente para la correspondiente patente en



Estados Unidos con N° **US 11,311,015 B2** (adjunta a este escrito).

Adicionalmente, las reivindicaciones han sido modificadas como sigue:

La **reivindicación 2** ha sido modificada incluyendo la expresión “e incluye instrucciones para mezclar y aplicar la combinación conjuntamente”.

La **reivindicación 3** ha sido modificada sustituyendo el término “al menos uno” por “uno o más”.

1.2.2. Claridad y soporte

La Examinadora ha objetado las reivindicaciones por los siguientes motivos de claridad/soporte:

- La **reivindicación 1** no se encuentra debidamente sustentada en la descripción, puesto que en las realizaciones preferidas hace referencia a composiciones de tres componentes específicas solo para las proporciones de las tablas 3 y 4.

El Solicitante desea hacer notar respetuosamente a la Examinadora que se le deberá permitir al solicitante cubrir todas las modificaciones obvias, equivalentes a la invención, a las que cualquier tercero experto en la materia pudiera llegar sin realizar esfuerzo inventivo, como es el caso de la presente invención. La amplitud de un término que se utiliza en una reivindicación depende de lo que el estado de la técnica permita “generalizar”. De hecho, las reivindicaciones son usualmente generalizaciones del contenido divulgado en la descripción. La generalización no puede ir más allá del alcance de ese contenido divulgado en la descripción. Una generalización es permitida siempre y cuando cubra todas las variantes, o modos específicos divulgados en la descripción. Para determinar si la generalización es apropiada, el examinador debe basarse en el estado de la técnica. Cuando la invención corresponde a un nuevo campo tecnológico, la generalización puede ser más amplia que cuando la invención está relacionada con un avance en una tecnología conocida. Al generalizar se le debe permitir al solicitante cubrir alternativas obvias para cualquier tercero que conozca el campo técnico, para darle al solicitante una protección justa y razonable, acorde a su esfuerzo inventivo y su contribución al estado de la técnica al divulgar su invención. Esto es, la Examinadora no debería, con todo el respecto, olvidar el sentido mismo de las patentes: en patentes una reivindicación no debería ser tan limitada (estrecha) como para privar al solicitante de una justa recompensa de protección de su invención, a cambio de divulgarla. Así se le deberá permitir al solicitante cubrir todas las modificaciones obvias, equivalentes a la invención, sino resulta evidente que cualquier tercera persona podría fácilmente sustituir un elemento de la reivindicación por otro equivalente, reproducir la invención, y así abusar con total impunidad del esfuerzo inventor del solicitante sin infringir la patente. Es decir, el sentido de la patente es conferirle al solicitante una protección justa y acorde a lo inventado, proporcional, a cambio de divulgar su invención para que la técnica avance a partir de lo logrado por él. Se trata con todo el respeto de otorgar una protección razonable acorde a lo divulgado que impida que terceros puedan posteriormente



infringir fácilmente la patente introduciendo diferencias insustanciales, por haberse concedido demasiado e injustamente limitada la patente.

- **La reivindicación 2**, la cual reclama un kit de partes, no tiene sustento adecuado teniendo en cuenta que no es posible evidenciar que los componentes formen una unidad funcional (combinación verdadera) dirigida a un único propósito.

Con el fin de solventar esta objeción, la reivindicación 2 ha sido modificada de manera que dicho kit debe incluir ahora instrucciones para mezclar y aplicar de manera conjunta la combinación compuesta por bentazona, sulfentrazona y halosulfuron para el control de malas hierbas. Claramente, los componentes forman una unidad funcional destinada a un solo propósito, es decir, mezclados entre sí para el control de malezas.

- **La reivindicación 3** no es clara, porque contiene el término “al menos” el cual es impreciso y no permite definir el alcance de la solicitud.

Con el fin de solventar esta objeción, la reivindicación 3 ha sido modificada sustituyendo el término objetado por “uno o más”.

1.3. Descripción

- La Examinadora objeta que la memoria descriptiva únicamente evidencia una combinación que comprende 479.30 g/L de bentazona, 498.47 g/L de sulfentrazona y halosulfurón al 75%.

El Solicitante respetuosamente discrepa con la opinión de la Examinadora, y considera que la memoria descriptiva de la presente solicitud describe suficientemente la invención como se reivindica en las presentes reivindicaciones para que un experto en la técnica pueda hacer uso de la invención. La combinación es nueva y se ha encontrado que es sinérgica. La combinación reivindicada según la presente invención se mencionó específicamente en la Tabla 1. En los Ejemplos, la combinación reivindicada dio como resultado una supresión/control rápido de malezas y permitió un control residual más prolongado, lo que ventajosamente puede permitir que el usuario final proporcione una sola aplicación durante toda una temporada de crecimiento. Por el contrario, las mezclas individuales o bidireccionales exhibieron menos control y, por lo general, requerirían múltiples aplicaciones durante una temporada de crecimiento.

2. Examen de patentabilidad

2.1. Nivel inventivo

La Examinadora considera que las reivindicaciones 1 y 3 no son inventivas a la vista del documento **D1** (WO2016/116531).



Como se ha mencionado anteriormente en el presente escrito, las reivindicaciones han sido modificadas en línea con las reivindicaciones concedidas recientemente para la correspondiente patente en Estados Unidos con N° **US 11,311,015 B2** (adjunta a este escrito).

El documento D1 fue citado durante la tramitación de dicha patente estadounidense prioritaria. La combinación reivindicada compuesta por bentazona, sulfentrazona y halosulfurón, que se demostró sinérgica en los ejemplos, no se enseña ni se sugiere en D1. Por el contrario, D1 enseña y sugiere composiciones herbicidas que incluyen al menos saflufenacil. Los solicitantes reivindicaron que la composición consiste en bentazona, sulfentrazona y halosulfuron como ingredientes activos y no incluye saflufenacil.

3. Conclusiones

El Solicitante considera subsanadas las objeciones con el nuevo conjunto de reivindicaciones y los argumentos ahora presentados.

En consecuencia, le pedimos amablemente al examinador que conceda la patente para la presente invención, por lo que queda evidenciado que la invención cumple con los requisitos de patentabilidad definidos en la Decisión 486 de 2000.

Cordialmente,

Juan Carlos Cuesta Quintero.

C.C. 79.339.809 de Bogotá

T.P. 43.273 del C.S. de la J.

Anexos: Comprobante de pago por modificación voluntaria al capítulo reivindicatorio.

Capítulo reivindicatorio modificado en control de cambios.

Capítulo reivindicatorio modificado en limpio.

REIVINDICACIONES

1. Una combinación de principios activos herbicidas compuesta por bentazona, sulfentrazona y halosulfurón.

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2. Un kit de partes que comprende una pluralidad de componentes, en donde dicha pluralidad de componentes comprende una combinación de principios activos herbicidas compuesta por:

(a) bentazona;

10 (b) sulfentrazona; y

(c) halosulfurón

en donde el kit de partes no contiene otros principios activos herbicidas e incluye instrucciones para mezclar y aplicar la combinación conjuntamente.

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3. Una composición que comprende la combinación de principios activos herbicidas de la reivindicación 1 y al menos uno o más ~~un~~ excipientes s agroquímicamente aceptables.

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4. Un método de control de las malezas de chufa salvaje en un emplazamiento, comprendiendo dicho método aplicar en el emplazamiento la combinación de principios activos herbicidas de la reivindicación 1.

REIVINDICACIONES

1. Una combinación de principios activos herbicidas compuesta por bentazona, sulfentrazona y halosulfurón.

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2. Un kit de partes que comprende una pluralidad de componentes, en donde dicha pluralidad de componentes comprende una combinación de principios activos herbicidas compuesta por:

(a) bentazona;

10 (b) sulfentrazona; y

(c) halosulfurón

en donde el kit de partes no contiene otros principios activos herbicidas e incluye instrucciones para mezclar y aplicar la combinación conjuntamente.

15 3. Una composición que comprende la combinación de principios activos herbicidas de la reivindicación 1 y uno o más excipientes agroquímicamente aceptables.

20 4. Un método de control de las malezas de chufa salvaje en un emplazamiento, comprendiendo dicho método aplicar en el emplazamiento la combinación de principios activos herbicidas de la reivindicación 1.



US011311015B2

(12) **United States Patent**
DelSantro et al.

(10) **Patent No.:** **US 11,311,015 B2**

(45) **Date of Patent:** **Apr. 26, 2022**

(54) **HERBICIDAL COMBINATION**

(71) Applicant: **UPL LIMITED**, West Bengal (IN)

(72) Inventors: **Mark Vincent DelSantro**, Glenmore, PA (US); **Beth Erickson Sears**, Lincoln University, PA (US); **Jaidev Rajnikant Shroff**, Dubai (AE); **Vikram Rajnikant Shroff**, Dubai (AE)

(73) Assignee: **UPL LIMITED**, West Bengal (IN)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 91 days.

(21) Appl. No.: **16/681,072**

(22) Filed: **Nov. 12, 2019**

(65) **Prior Publication Data**

US 2020/0146291 A1 May 14, 2020

Related U.S. Application Data

(60) Provisional application No. 62/760,149, filed on Nov. 13, 2018.

(51) **Int. Cl.**

A01N 43/88 (2006.01)

A01N 43/56 (2006.01)

A01N 43/653 (2006.01)

(52) **U.S. Cl.**

CPC **A01N 43/88** (2013.01); **A01N 43/56** (2013.01); **A01N 43/653** (2013.01)

(58) **Field of Classification Search**

CPC A01N 43/88; A01N 43/56; A01N 43/653

See application file for complete search history.

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Primary Examiner — Mina Haghighatian

(74) Attorney, Agent, or Firm — Cantor Colburn LLP

(57) **ABSTRACT**

An herbicidal combination including a photosystem II inhibitor, an ALS inhibitor, and a chlorophyll and heme biosynthesis inhibitor, a composition comprising the combination, and methods of using these combinations are described.

4 Claims, No Drawings

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HERBICIDAL COMBINATION**CROSS-REFERENCE TO RELATED APPLICATIONS**

This application claims priority to U.S. Provisional Application 62/760,149 filed on Nov. 13, 2018, which is incorporated herein by reference in its entirety.

TECHNICAL FIELD

The present disclosure relates to combinations of herbicides for controlling harmful undesirable plants. The present disclosure more specifically relates to a synergistic combination of herbicides.

BACKGROUND AND PRIOR ART

Weeds are undesirable plants that can severely damage yield in crops. Farmers usually control these plants at the pre-plant stage as well as after sowing. Modern herbicides are used to either control or suppress these undesirable plants so as to allow sown crops a greater share of nutrient.

Current practices include combining herbicides with varied modes of action, which allows for broader spectrum of control and resistance management. However, the combinations currently known are not sufficient to control the resistant and persistent weeds. Growers increasingly face complex weed situations that may not be controlled with just one herbicide.

Combinations of herbicides are used to control a broader range of weeds. However, the combination of herbicides may not always result in the desired effect. Combination of herbicides may lead to an additive effect or an antagonistic effect. It may also result in phytotoxicity to the crops making it an undesirable combination. Agronomists must therefore carefully select the herbicides that can be combined to offer a synergistic effect that would control weeds while having no phytotoxic effect on the crop, and reduce the chances of development of herbicide resistant weeds.

U.S. Pat. No. 8,785,351 discloses a combination comprising bentazon, an acetolactate synthase (ALS) inhibitor and an ACCase inhibitor. Sulfonylureas are indicated as potential long list of ALS inhibitors, while some PPO inhibitors are merely indicated as a possible additional herbicide, amongst an equally large number of herbicides. This disclosure is generic and does not provide guidance towards the present combinations.

There is therefore a need in the art for combinations that have advantageous properties such as a herbicidal combination that is synergistic, helps in resistance management, reduces dosage of herbicides used thus causing minimal damage to the environment, and a herbicidal combination that has excellent residual effects.

Embodiments of the present invention may therefore ameliorate one or more of the above-mentioned problems:

SUMMARY

Therefore, in one aspect, the present invention may provide an herbicidal combination comprises:

- (a) at least one photosystem II inhibitor selected from the group consisting of:
 - (i) a phenylcarbamate herbicide;
 - (ii) a triazine herbicide;
 - (iii) a triazinone herbicide;
 - (iv) an uracil herbicide;

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- (v) a benthiazazole herbicide;
- (vi) a nitrile herbicide; and
- (vii) an urea herbicide;

- (b) at least one ALS inhibitor selected from the group consisting of:

- (i) an imidazolinone herbicide;
- (ii) a sulfonylamino-carbonyl triazolinone herbicide;
- (iii) a sulfonylurea herbicide;
- (iv) a pyrazole herbicide;
- (v) a triazolpyrimidine herbicide; and
- (vi) a triazolone herbicide;

and

- (c) at least one chlorophyll and heme biosynthesis inhibitor.

- (15) In another aspect, a method of controlling weeds at a locus comprises applying to the locus an herbicidal combination comprising:

- (a) at least one photosystem II inhibitor selected from the group consisting of:

- (i) a phenylcarbamate herbicide;
- (ii) a triazine herbicide;
- (iii) a triazinone herbicide;
- (iv) an uracil herbicide;
- (v) a benthiazazole herbicide;
- (vi) a nitrile herbicide; and
- (vii) an urea herbicide;

- (b) at least one ALS inhibitor selected from the group consisting of:

- (i) an imidazolinone herbicide;
- (ii) a sulfonylamino-carbonyl triazolinone herbicide;
- (iii) a sulfonylurea herbicide;
- (iv) a pyrazole herbicide;
- (v) a triazolpyrimidine herbicide; and
- (vi) a triazolone herbicide;

and

- (c) at least one chlorophyll and heme biosynthesis inhibitor.

In an aspect, an herbicidal composition comprises

- (a) at least one photosystem II inhibitor selected from the group consisting of:

- (i) a phenylcarbamate herbicide;
- (ii) a triazine herbicide;
- (iii) a triazinone herbicide;
- (iv) an uracil herbicide;
- (v) a benthiazazole herbicide;
- (vi) a nitrile herbicide; and
- (vii) an urea herbicide;

- (b) at least one ALS inhibitor selected from the group consisting of:

- (i) an imidazolinone herbicide;
- (ii) a sulfonylamino-carbonyl triazolinone herbicide;
- (iii) a sulfonylurea herbicide;
- (iv) a pyrazole herbicide;
- (v) a triazolpyrimidine herbicide; and
- (vi) a triazolone herbicide;

- (c) at least one chlorophyll and heme biosynthesis inhibitor; and

- (d) at least one agrochemically acceptable excipient.

Yet another aspect comprises a method of increasing yield in a crop by application of a combination comprising:

- (a) at least one photosystem II inhibitor selected from the group consisting of:

- (i) a phenylcarbamate herbicide;
- (ii) a triazine herbicide;
- (iii) a triazinone herbicide;
- (iv) an uracil herbicide;
- (v) a benthiazazole herbicide;

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- (vi) a nitrile herbicide; and
- (vii) an urea herbicide;
- (b) at least one ALS inhibitor selected from the group consisting of:
 - (i) an imidazolinone herbicide;
 - (ii) a sulfonylamino-carbonyltriaolinone herbicide;
 - (iii) a sulfonylurea herbicide;
 - (iv) a pyrazole herbicide;
 - (v) a triazolpyrimidine herbicide; and
 - (vi) a triazolone herbicide;
- and
- (c) at least one chlorophyll and heme biosynthesis inhibitor.

Another aspect provides a method of improving plant health, said method comprising application at the locus of the plant a combination comprising:

- (a) at least one photosystem II inhibitor selected from the group consisting of:
 - (i) a phenylcarbamate herbicide;
 - (ii) a triazine herbicide;
 - (iii) a triazinone herbicide;
 - (iv) an uracil herbicide;
 - (v) a benthiazazole herbicide;
 - (vi) a nitrile herbicide; and
 - (vii) an urea herbicide;
- (b) at least one ALS inhibitor selected from the group consisting of:
 - (i) an imidazolinone herbicide;
 - (ii) a sulfonylamino-carbonyltriaolinone herbicide;
 - (iii) a sulfonylurea herbicide;
 - (iv) a pyrazole herbicide;
 - (v) a triazolpyrimidine herbicide; and
 - (vi) a triazolone herbicide;
- and
- (c) at least one chlorophyll and heme biosynthesis inhibitor.

DETAILED DESCRIPTION

The term herbicide, as used herein, shall mean an active ingredient that kills, controls or otherwise adversely modifies the growth of weeds. As used herein, an herbicidally effective or vegetation controlling amount is an amount of active ingredient that causes an "herbicidal effect," i.e., an adversely modifying effect and includes deviations from natural development, killing, regulation, desiccation, retardation. The terms "plants" and "vegetation" include, but are not limited to, germinant seeds, emerging seedlings, plants emerging from vegetative propagules, and established vegetation. The term "locus" as used herein shall denote the vicinity of a desired crop in which weed control, typically selective weed control, of weeds is desired. The locus includes the vicinity of desired crop plants wherein the weed infestation has either emerged or is yet to emerge. The term crop shall include a multitude of desired crop plants or an individual crop plant growing at a locus.

Surprisingly, it has been found by the present inventors that a combination of a photosystem II inhibitor, an ALS inhibitor, and a chlorophyll and heme biosynthesis inhibitor results in a synergistic control of undesirable plants, at the locus of the desired plant.

Therefore, in one aspect, the present invention may provide an herbicidal combination comprising:

- (a) at least one photosystem II inhibitor selected from the group consisting of:
 - (i) a phenylcarbamate herbicide;
 - (ii) a triazine herbicide;

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- (iii) a triazinone herbicide;
- (iv) an uracil herbicide;
- (v) a benthiazazole herbicide;
- (vi) a nitrile herbicide; and
- (vii) an urea herbicide;
- (b) at least one ALS inhibitor selected from the group consisting of:
 - (i) an imidazolinone herbicide;
 - (ii) a sulfonylamino-carbonyltriaolinone herbicide;
 - (iii) a sulfonylurea herbicide;
 - (iv) a pyrazole herbicide;
 - (v) a triazolpyrimidine herbicide; and
 - (vi) a triazolone herbicide;
- and
- (c) at least one chlorophyll and heme biosynthesis inhibitor.

In an embodiment, the herbicidal combinations of the present invention comprise one herbicide from these three classes of herbicides.

Therefore, in one aspect, the present invention may provide a herbicidal combination comprising:

- (a) at least one photosystem II inhibitor selected from the group consisting of (i) a phenylcarbamate herbicide; (ii) a triazine herbicide; (iii) a triazinone herbicide; (iv) an uracil herbicide; (v) a benthiazazole herbicide; (vi) a nitrile herbicide; and (vii) an urea herbicide;
- (b) at least one ALS inhibitor selected from the group consisting of (i) an imidazolinone herbicide; (ii) a sulfonylamino-carbonyltriaolinone herbicide; (iii) a sulfonylurea herbicide; (iv) a pyrazole herbicide; (v) a triazolpyrimidine herbicide; and (vi) a triazolone herbicide; and
- (c) at least one chlorophyll and heme biosynthesis inhibitor herbicide.

In another aspect, the present invention provides a method of controlling weeds at a locus by applying the combination of the present invention to the locus.

Thus, in this aspect, the present invention may provide a method of controlling weeds at a locus, said method comprising applying to the locus a combination comprising:

- (a) at least one photosystem II inhibitor selected from the group consisting of (i) a phenylcarbamate herbicide; (ii) a triazine herbicide; (iii) a triazinone herbicide; (iv) an uracil herbicide; (v) a benthiazazole herbicide; (vi) a nitrile herbicide; and (vii) an urea herbicide;
- (b) at least one ALS inhibitor selected from the group consisting of (i) an imidazolinone herbicide; (ii) a sulfonylamino-carbonyltriaolinone herbicide; (iii) a sulfonylurea herbicide; (iv) a pyrazole herbicide; (v) a triazolpyrimidine herbicide; and (vi) a triazolone herbicide; and
- (c) at least one chlorophyll and heme biosynthesis inhibitor herbicide.

In another aspect, the present invention provides a composition comprising the combinations of the present invention.

Therefore, in this aspect, the present invention may provide a composition comprising:

- (a) at least one photosystem II inhibitor selected from the group consisting of (i) a phenylcarbamate herbicide; (ii) a triazine herbicide; (iii) a triazinone herbicide; (iv) an uracil herbicide; (v) a benthiazazole herbicide; (vi) a nitrile herbicide; and (vii) an urea herbicide;
- (b) at least one ALS inhibitor selected from the group consisting of (i) an imidazolinone herbicide; (ii) a sulfonylamino-carbonyltriaolinone herbicide; (iii) a

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sulfonylurea herbicide; (iv) a pyrazole herbicide; (v) a triazolpyrimidine herbicide; and (vi) a triazolone herbicide;

(c) at least one chlorophyll and heme biosynthesis inhibitor herbicide; and

(d) at least one agrochemically acceptable excipient.

In another aspect, the present invention provides a method for increasing yield in a crop by using the combinations of the present invention.

Therefore, in this aspect, the present invention may provide a method of increasing yield in a crop by application to the crop a combination comprising:

(a) at least one photosystem II inhibitor selected from the group consisting of (i) a phenylcarbamate herbicide; (ii) a triazine herbicide; (iii) a triazinone herbicide; (iv) an uracil herbicide; (v) a benthiazazole herbicide; (vi) a nitrile herbicide; and (vii) an urea herbicide;

(b) at least one ALS inhibitor selected from the group consisting of (i) an imidazolinone herbicide; (ii) a sulfonylamino-carbonyltriazolinone herbicide; (iii) a sulfonylurea herbicide; (iv) a pyrazole herbicide; (v) a triazolpyrimidine herbicide; and (vi) a triazolone herbicide; and

(c) at least one chlorophyll and heme biosynthesis inhibitor herbicide.

In another aspect, the present invention may provide a method of improving plant health comprising applying to the plant the combinations of the present invention.

Therefore, in this aspect, the present invention may provide a method of improving the plant health, said method comprising application at the locus of the plant a combination comprising:

(a) at least one photosystem II inhibitor selected from the group consisting of (i) a phenylcarbamate herbicide; (ii) a triazine herbicide; (iii) a triazinone herbicide; (iv) an uracil herbicide; (v) a benthiazazole herbicide; (vi) a nitrile herbicide; and (vii) an urea herbicide;

(b) at least one ALS inhibitor selected from the group consisting of (i) an imidazolinone herbicide; (ii) a sulfonylamino-carbonyltriazolinone herbicide; (iii) a sulfonylurea herbicide; (iv) a pyrazole herbicide; (v) a triazolpyrimidine herbicide; and (vi) a triazolone herbicide; and

(c) at least one chlorophyll and heme biosynthesis inhibitor herbicide.

Each of the aspect described above may have one or more embodiments.

Each of the embodiments described hereinafter may apply to one or all of the aspects described hereinabove. These embodiments are intended to be read as being preferred features of one or all of the aspects described hereinabove. Each of the embodiments described hereinafter applies to each of the aspects described hereinabove individually.

In an embodiment, the photosystem II inhibitor is a phenylcarbamate herbicide. In an embodiment, the phenylcarbamate herbicide is selected from the group consisting of barban, (RS)-sec-butyl 3-chlorocarbanilate (BCPC), carbasulam, carbetamide, 2-chloroethyl 3-chlorocarbanilate (CEPC), chlorbufam, chlorpropham, (RS)-2-chloro-1-methylethyl 3-chlorocarbanilate (CPPC), desmedipham, phenisopham, phenmedipham, phenmedipham-ethyl, propham and methyl(3,4 dichlorophenyl)carbamate (swep).

In an embodiment, the phenylcarbamate herbicide is selected from the group consisting of chlorpropham, desmedipham, phenmedipham, and phenmedipham-ethyl. In an embodiment, the phenylcarbamate herbicide is chlorpropham. In an embodiment, the phenylcarbamate herbicide is

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desmedipham. In an embodiment, the phenylcarbamate herbicide is phenmedipham. In an embodiment, the phenylcarbamate herbicide is phenmedipham-ethyl. In an embodiment, the photosystem II inhibitor is a triazine herbicide.

In an embodiment, the triazine herbicide is selected from the group consisting of dipropetryn, fucaojing, trihydroxytriazine, atrazine, chlorazine, cyanazine, cyprazine, eglazine, ipazine, mesoprazine, procyzazine, proglazine, propazine, sebuthylazine, simazine, terbuthylazine, trietazine, indaziflam, triaziflam, atraton, methometon, prometon, secbumeton, simeton, terbumeton, ametryn, aziprotryne, cyanatryn, desmetryn, dimethametryn, methoprotiye, propmetryn, simetryn, and terbutryn.

In an embodiment, the triazine herbicide is atrazine. In an embodiment, the triazine herbicide is ametryn. In an embodiment, the photosystem II inhibitor is a triazinone herbicide.

In an embodiment, the triazinone herbicide is selected from the group consisting of ametrizone, amibuzin, ethiozin, hexazinone, isomethiozin, metamitron, metribuzin and trifludimoxazin. In an embodiment, the triazinone herbicide is hexazinone. In an embodiment, the triazinone herbicide is metamitron. In an embodiment, the triazinone herbicide is metribuzin. In an embodiment, the photosystem II inhibitor is a uracil herbicide.

In an embodiment, the uracil herbicide is selected from the group consisting of benzfendizone, bromacil, butafenacil, flupropacil, isocil, lenacil, saflufenacil, terbacil and tiafenacil. In an embodiment, the uracil herbicide is bromacil. In an embodiment, the uracil herbicide is saflufenacil.

In an embodiment, the photosystem II inhibitor is a benzothiazole herbicide or a benzothiadiazole herbicide. In an embodiment, the benzothiazole herbicide is selected from the group consisting of benazolin, benzthiazuron, fenthiaaprop, mefenacet, and methabenzthiazuron. In an embodiment, the photosystem II inhibitor is a benzothiadiazole herbicide. In an embodiment, the benzothiadiazole herbicide is bentazone or bentazone-sodium.

In an embodiment, the photosystem II inhibitor is a nitrile herbicide. In an embodiment, the nitrile herbicide is selected from the group consisting of bromobonil, bromoxynil, chloroxynil, cyclopyranil, dichlobenil, iodobenil, ioxynil and pyraclozil. In an embodiment, the nitrile herbicide is bromoxynil. In an embodiment, the photosystem II inhibitor is a urea herbicide. In an embodiment, the urea herbicide is a phenylurea herbicide.

In an embodiment, the phenylurea herbicide is selected from the group consisting of anisuron, buturon, chlorbromuron, chloreturon, chlorotoluron, chloroxuron, daimuron, difenoxuron, dimefuron, diruon, fenuron, fluometuron, fluothuron, isoproturon, linuron, methiruron, methylidymuron, metobenzuron, metobromuron, metoxuron, monolinuron, monuron, neburon, parafluron, phenobenzuron, siduron, tetrafluron, and thidiazuron. In an embodiment, the phenylurea herbicide is diruon. In an embodiment, the phenylurea herbicide is linuron.

In an embodiment, the photosystem II inhibitor is selected from the group consisting of chlorpropham, desmedipham, phenmedipham, phenmedipham-ethyl, atrazine, hexazinone, metamitron, metribuzin, bromacil, saflufenacil, bentazone, bentazone-sodium, bromoxynil, diruon, and linuron.

In an embodiment, the ALS inhibitor herbicide is an imidazolinone herbicide. In an embodiment, the imidazolinone herbicide is selected from the group consisting of imazamethabenz, imazamox, imazapic, imazapyr, imazaquin, and imazethapyr. In an embodiment, the imidazolinone herbicide is imazamox. In an embodiment, the imidazoli-

none herbicide is imazapic. In an embodiment, the imidazolinone herbicide is imazapyr. In an embodiment, the imidazolinone herbicide is imazethapyr. In an embodiment, the ALS inhibitor is a triazolone herbicide.

In an embodiment, the triazolone herbicide is selected from the group consisting of amicarbazone, bencarbazone, carfentrazone, flucarbazone, ipfencarbazone, propoxycarbazone, sulfentrazone, and thienicarbazone. In an embodiment, the triazolone herbicide is carfentrazone. In an embodiment, the triazolone herbicide is flucarbazone. In an embodiment, the triazolone herbicide is sulfentrazone. In an embodiment, the triazolone herbicide is amicarbazone.

In an embodiment, the ALS inhibitor herbicide is a sulfonylamino-carbonyltriazolinone herbicide. In an embodiment, the sulfonylamino-carbonyltriazolinone herbicide is flucarbazone. In an embodiment, the sulfonylamino-carbonyltriazolinone herbicide is flucarbazone-sodium.

In an embodiment, the ALS inhibitor herbicide is a sulfonylurea herbicide. In an embodiment, the sulfonylurea herbicide is selected from the group consisting of amidosulfuron, azimsulfuron, bensulfuron, chlorimuron, cyclosulfamuron, ethoxysulfuron, flazasulfuron, flucetosulfuron, flupyrsulfuron, foramsulfuron, halosulfuron, imazosulfuron, mesosulfuron, metazosulfuron, methiopyrisulfuron, monosulfuron, nicosulfuron, orthosulfamuron, oxasulfuron, primisulfuron, propyrisulfuron, pyrazosulfuron, rimsulfuron, sulfometuron, sulfosulfuron, trifloxysulfuron, zuomihuanglong, chlorsulfuron, cinosulfuron, ethametsulfuron, iodosulfuron, iofensulfuron, metsulfuron, prosulfuron, thifensulfuron, triasulfuron, tribenuron, trflusulfuron, and tritosulfuron. In an embodiment, the sulfonylurea herbicide is bensulfuron. In an embodiment, the sulfonylurea herbicide is halo-sulfuron. In an embodiment, the sulfonylurea herbicide is pyrazosulfuron. In an embodiment, the sulfonylurea herbicide is sulfosulfuron.

In an embodiment, the sulfonylurea herbicide is trifloxysulfuron. In an embodiment, the sulfonylurea herbicide is metsulfuron. In an embodiment, the sulfonylurea herbicide is flazasulfuron. In an embodiment, the ALS inhibitor herbicide is a pyrazole herbicide.

In an embodiment, the pyrazole herbicide is selected from the group consisting of azimsulfuron, cyclopyranil, difenzoquat, halosulfuron, flazasulfuron, metazachlor, metazosulfuron, pyrazosulfuron, pyraclonil, pyroxasulfone, benzo-fenap, pyrasulfotole, pyrazolynate, pyrazoxyfen, tolypyralate, topramezone, fluzolate, nipyraclufen, pinoxaden, and pyraflufen. In an embodiment, the pyrazole herbicide is metazachlor. In an embodiment, the pyrazole herbicide is pinoxaden. In an embodiment, the pyrazole herbicide is pyraflufen. In an embodiment, the ALS inhibitor herbicide is a triazolopyrimidine herbicide. In an embodiment, the triazolopyrimidine herbicide is selected from the group consisting of chloransulam, diclosulam, florasulam, flumetsulam, metosulam, penoxsulam, and pyroxsulam. In an embodiment, the triazolopyrimidine herbicide is diclosulam. In an embodiment, the triazolopyrimidine herbicide is penoxsulam.

In an embodiment, the ALS inhibitor herbicide is selected from the group consisting of imazamox, imazapic, imazapyr, imazethapyr, carfentrazone, flucarbazone, sulfentrazone, flucarbazone, amicarbazone, flucarbazone-sodium, bensulfuron, halosulfuron, pyrazosulfuron, flazasulfuron, sulfosulfuron, trifloxysulfuron, metsulfuron, metazachlor, pinoxaden, pyraflufen, diclosulam, and penoxsulam.

In an embodiment, the combinations of the present invention comprise a chlorophyll and heme biosynthesis inhibitor. In an embodiment, the chlorophyll and heme biosynthesis

inhibitor is a triazolone herbicide. In an embodiment, the triazolone herbicide is selected from the group consisting of amicarbazone, bencarbazone, carfentrazone, flucarbazone, ipfencarbazone, propoxycarbazone, sulfentrazone, and thienicarbazone. In an embodiment, the triazolone herbicide is carfentrazone. In an embodiment, the triazolone herbicide is flucarbazone. In an embodiment, the triazolone herbicide is sulfentrazone. In an embodiment, the triazolone herbicide is amicarbazone.

In an embodiment, the chlorophyll and heme biosynthesis inhibitor is a uracil herbicide. In an embodiment, the uracil herbicide is selected from the group consisting of benzfen-dizone, bromacil, butafenacil, flupropacil, isocil, lenacil, saflufenacil, terbacil and tiafenacil. In an embodiment, the uracil herbicide is bromacil. In an embodiment, the uracil herbicide is saflufenacil.

In an embodiment, the chlorophyll and heme biosynthesis inhibitor is a dicarboximide herbicide. In an embodiment, the dicarboximide herbicide is selected from the group consisting of cinidon-ethyl, flumezin, flumiclorac, flumioxazin, and flumipropyn. In an embodiment, the dicarboximide herbicide is flumioxazin.

In an embodiment, the chlorophyll and heme biosynthesis inhibitor is a pyrazole herbicide. In an embodiment, the pyrazole herbicide is selected from the group consisting of azimsulfuron, cyclopyranil, difenzoquat, halosulfuron, metazachlor, flazasulfuron, metazosulfuron, pyrazosulfuron, pyraclonil, pyroxasulfone, benzo-fenap, pyrasulfotole, pyrazolynate, pyrazoxyfen, tolypyralate, topramezone, fluzolate, nipyraclufen, pinoxaden, and pyraflufen. In an embodiment, the pyrazole herbicide is metazachlor. In an embodiment, the pyrazole herbicide is pinoxaden. In an embodiment, the pyrazole herbicide is pyraflufen.

In an embodiment, the chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone, amicarbazone, flucarbazone, sulfentrazone, bromacil, saflufenacil, flumioxazin, metazachlor, amicarbazone, pinoxaden, and pyraflufen.

Thus, in an embodiment, the present invention provides an herbicidal combination comprising:

- (a) a photosystem II inhibitor selected from the group consisting of chlorpropham, desmedipham, phenmedipham, phenmedipham-ethyl, atrazine, hexazinone, metamitron, metribuzin, bromacil, saflufenacil, bentazone, bentazone-sodium, bromoxynil, diruon, and linuron;
- (b) an ALS inhibitor selected from the group consisting of imazamox, imazapic, imazapyr, imazethapyr, carfentrazone, amicarbazone, flucarbazone, sulfentrazone, flucarbazone, flucarbazone-sodium, bensulfuron, halo-sulfuron, pyrazosulfuron, sulfosulfuron, flazasulfuron, trifloxysulfuron, metsulfuron, metazachlor, pinoxaden, pyraflufen, diclosulam, and penoxsulam; and
- (c) a chlorophyll and heme biosynthesis inhibitor selected from the group consisting of carfentrazone, amicarbazone, flucarbazone, sulfentrazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

In an embodiment, the photosystem II inhibitor, the ALS inhibitor and the chlorophyll and heme biosynthesis inhibitor herbicides are not the same. In this embodiment, the three herbicides are selected such that the selected herbicides are different from each other.

In an embodiment, the combinations of the present invention comprise at least three different herbicides.

In an embodiment, the present invention provides preferred combinations, compositions and methods thereof.

The methods of the invention include a method of controlling weeds at a locus by applying to the locus of the weeds the combination or the composition, a method of increasing yield in a crop by application of the combination or composition to the crop, or a method of improving the plant health by application at the locus of the plant the combination or the composition. The embodiments described herein describe the preferred embodiments of all these possible combinations, compositions and methods of the invention.

In an embodiment, the preferred photosystem II inhibitor is bentazone or bentazone-sodium.

Thus, in an embodiment, the present invention provides an herbicidal combination comprising:

- (a) bentazone or bentazone-sodium;
- (b) an ALS inhibitor selected from the group consisting of imazamox, imazapic, imazapyr, imazethapyr, carfentrazone, amicarbazone, flucarbazone, sulfentrazone, flucarbazone, flucarbazone-sodium, bensulfuron, halo-sulfuron, pyrazosulfuron, flazasulfuron, sulfosulfuron, trifloxysulfuron, metsulfuron, metazachlor, pinoxaden, pyraflufen, diclosulam, and penoxsulam; and
- (c) a chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone, amicarbazone, flucarbazone, sulfentrazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) bentazone or bentazone-sodium;
- (b) imazamox; and
- (c) a chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone, amicarbazone, flucarbazone, sulfentrazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) bentazone or bentazone-sodium;
- (b) imazapic; and
- (c) a chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone, amicarbazone, flucarbazone, sulfentrazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

Thus, in an embodiment, the present invention provides an herbicidal combination comprising:

- (a) bentazone or bentazone-sodium;
- (b) imazapyr; and
- (c) a chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone, amicarbazone, flucarbazone, sulfentrazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

Thus, in an embodiment, the present invention provides an herbicidal combination comprising:

- (a) bentazone or bentazone-sodium;
- (b) imazethapyr; and
- (c) a chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone, amicarbazone, flucarbazone, sulfentrazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) bentazone or bentazone-sodium;
- (b) carfentrazone; and

- (c) a chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone, amicarbazone, flucarbazone, sulfentrazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) bentazone or bentazone-sodium;
- (b) flucarbazone; and
- (c) a chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone, amicarbazone, flucarbazone, sulfentrazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) bentazone or bentazone-sodium;
- (b) sulfentrazone; and
- (c) a chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone, flucarbazone, amicarbazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) bentazone or bentazone-sodium;
- (b) amicarbazone; and
- (c) a chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone, flucarbazone, amicarbazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) bentazone or bentazone-sodium;
- (b) flucarbazone-sodium; and
- (c) a chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone, amicarbazone, flucarbazone, sulfentrazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) bentazone or bentazone-sodium;
- (b) bensulfuron; and
- (c) a chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone, amicarbazone, flucarbazone, sulfentrazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) bentazone or bentazone-sodium;
- (b) halosulfuron; and
- (c) a chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone, amicarbazone, flucarbazone, sulfentrazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) bentazone or bentazone-sodium;
- (b) flazasulfuron; and
- (c) a chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone, amicarbazone, flucarbazone, sulfentrazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

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In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) bentazone or bentazone-sodium;
- (b) pyrazosulfuron; and
- (c) a chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone, amicarbazone, flucarbazone, sulfentrazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) bentazone or bentazone-sodium;
- (b) sulfosulfuron; and
- (c) a chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone, amicarbazone, flucarbazone, sulfentrazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) bentazone or bentazone-sodium;
- (b) trifloxysulfuron; and
- (c) a chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone, amicarbazone, flucarbazone, sulfentrazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

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In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) bentazone or bentazone-sodium;
- (b) metsulfuron; and
- (c) a chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone, amicarbazone, flucarbazone, sulfentrazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) bentazone or bentazone-sodium;
- (b) metazachlor; and
- (c) a chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone, amicarbazone, flucarbazone, sulfentrazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) bentazone or bentazone-sodium;
- (b) pinoxaden; and
- (c) a chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone, amicarbazone, flucarbazone, sulfentrazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

TABLE 1

S No.	Photosystem II inhibitor	ALS inhibitor	Chlorophyll and Heme biosynthesis inhibitor	S No.	Photosystem II inhibitor	ALS inhibitor	Chlorophyll and Heme biosynthesis inhibitor
1	Chlorpropham	Imazamox	Carfentrazone	31	Chlorpropham	Imazethapyr	Bromacil
2	Chlorpropham	Imazamox	Flucarbazone	32	Chlorpropham	Imazethapyr	Saflufenacil
3	Chlorpropham	Imazamox	Sulfentrazone	33	Chlorpropham	Imazethapyr	Flumioxazin
4	Chlorpropham	Imazamox	Bromacil	34	Chlorpropham	Imazethapyr	Metazachlor
5	Chlorpropham	Imazamox	Saflufenacil	35	Chlorpropham	Imazethapyr	Pinoxaden
6	Chlorpropham	Imazamox	Flumioxazin	36	Chlorpropham	Imazethapyr	Pyraflufen
7	Chlorpropham	Imazamox	Metazachlor	37	Chlorpropham	Carfentrazone	Carfentrazone
8	Chlorpropham	Imazamox	Pinoxaden	38	Chlorpropham	Carfentrazone	Flucarbazone
9	Chlorpropham	Imazamox	Pyraflufen	39	Chlorpropham	Carfentrazone	Sulfentrazone
10	Chlorpropham	Imazapic	Carfentrazone	40	Chlorpropham	Carfentrazone	Bromacil
11	Chlorpropham	Imazapic	Flucarbazone	41	Chlorpropham	Carfentrazone	Saflufenacil
12	Chlorpropham	Imazapic	Sulfentrazone	42	Chlorpropham	Carfentrazone	Flumioxazin
13	Chlorpropham	Imazapic	Bromacil	43	Chlorpropham	Carfentrazone	Metazachlor
14	Chlorpropham	Imazapic	Saflufenacil	44	Chlorpropham	Carfentrazone	Pinoxaden
15	Chlorpropham	Imazapic	Flumioxazin	45	Chlorpropham	Carfentrazone	Pyraflufen
16	Chlorpropham	Imazapic	Metazachlor	46	Chlorpropham	Flucarbazone	Carfentrazone
17	Chlorpropham	Imazapic	Pinoxaden	47	Chlorpropham	Flucarbazone	Flucarbazone
18	Chlorpropham	Imazapic	Pyraflufen	48	Chlorpropham	Flucarbazone	Sulfentrazone
19	Chlorpropham	Imazapyr	Carfentrazone	49	Chlorpropham	Flucarbazone	Bromacil
20	Chlorpropham	Imazapyr	Flucarbazone	50	Chlorpropham	Flucarbazone	Saflufenacil
21	Chlorpropham	Imazapyr	Sulfentrazone	51	Chlorpropham	Flucarbazone	Flumioxazin
22	Chlorpropham	Imazapyr	Bromacil	52	Chlorpropham	Flucarbazone	Metazachlor
23	Chlorpropham	Imazapyr	Saflufenacil	53	Chlorpropham	Flucarbazone	Pinoxaden
24	Chlorpropham	Imazapyr	Flumioxazin	54	Chlorpropham	Flucarbazone	Pyraflufen
25	Chlorpropham	Imazapyr	Metazachlor	55	Chlorpropham	Sulfentrazone	Carfentrazone
26	Chlorpropham	Imazapyr	Pinoxaden	56	Chlorpropham	Sulfentrazone	Flucarbazone
27	Chlorpropham	Imazapyr	Pyraflufen	57	Chlorpropham	Sulfentrazone	Amicarbazone
28	Chlorpropham	Imazethapyr	Carfentrazone	58	Chlorpropham	Sulfentrazone	Bromacil
29	Chlorpropham	Imazethapyr	Flucarbazone	59	Chlorpropham	Sulfentrazone	Saflufenacil
30	Chlorpropham	Imazethapyr	Sulfentrazone	60	Chlorpropham	Sulfentrazone	Flumioxazin
61	Chlorpropham	Sulfentrazone	Metazachlor	91	Chlorpropham	Pyrazosulfuron	Carfentrazone
62	Chlorpropham	Sulfentrazone	Pinoxaden	92	Chlorpropham	Pyrazosulfuron	Flucarbazone
63	Chlorpropham	Sulfentrazone	Pyraflufen	93	Chlorpropham	Pyrazosulfuron	Sulfentrazone
64	Chlorpropham	Flucarbazone-sodium	Carfentrazone	94	Chlorpropham	Pyrazosulfuron	Bromacil
65	Chlorpropham	Flucarbazone-sodium	Flucarbazone	95	Chlorpropham	Pyrazosulfuron	Saflufenacil
66	Chlorpropham	Flucarbazone-sodium	Sulfentrazone	96	Chlorpropham	Pyrazosulfuron	Flumioxazin

TABLE 1-continued

S No.	Photosystem II inhibitor	ALS inhibitor	Chlorophyll and Heme biosynthesis inhibitor	S No.	Photosystem II inhibitor	ALS inhibitor	Chlorophyll and Heme biosynthesis inhibitor
67	Chlorpropham	Flucarbazone-sodium	Bromacil	97	Chlorpropham	Pyrazosulfuron	Metazachlor
68	Chlorpropham	Flucarbazone-sodium	Saflufenacil	98	Chlorpropham	Pyrazosulfuron	Pinoxaden
69	Chlorpropham	Flucarbazone-sodium	Flumioxazin	99	Chlorpropham	Pyrazosulfuron	Pyraflufen
70	Chlorpropham	Flucarbazone-sodium	Metazachlor	100	Chlorpropham	Sulfosulfuron	Carfentrazone
71	Chlorpropham	Flucarbazone-sodium	Pinoxaden	101	Chlorpropham	Sulfosulfuron	Flucarbazone
72	Chlorpropham	Flucarbazone-sodium	Pyraflufen	102	Chlorpropham	Sulfosulfuron	Sulfentrazone
73	Chlorpropham	Bensulfuron	Carfentrazone	103	Chlorpropham	Sulfosulfuron	Bromacil
74	Chlorpropham	Bensulfuron	Flucarbazone	104	Chlorpropham	Sulfosulfuron	Saflufenacil
75	Chlorpropham	Bensulfuron	Sulfentrazone	105	Chlorpropham	Sulfosulfuron	Flumioxazin
76	Chlorpropham	Bensulfuron	Bromacil	106	Chlorpropham	Sulfosulfuron	Metazachlor
77	Chlorpropham	Bensulfuron	Saflufenacil	107	Chlorpropham	Sulfosulfuron	Pinoxaden
78	Chlorpropham	Bensulfuron	Flumioxazin	108	Chlorpropham	Sulfosulfuron	Pyraflufen
79	Chlorpropham	Bensulfuron	Metazachlor	109	Chlorpropham	Trifloxysulfuron	Carfentrazone
80	Chlorpropham	Bensulfuron	Pinoxaden	110	Chlorpropham	Trifloxysulfuron	Flucarbazone
81	Chlorpropham	Bensulfuron	Pyraflufen	111	Chlorpropham	Trifloxysulfuron	Sulfentrazone
82	Chlorpropham	Halosulfuron	Carfentrazone	112	Chlorpropham	Trifloxysulfuron	Bromacil
83	Chlorpropham	Halosulfuron	Flucarbazone	113	Chlorpropham	Trifloxysulfuron	Saflufenacil
84	Chlorpropham	Halosulfuron	Sulfentrazone	114	Chlorpropham	Trifloxysulfuron	Flumioxazin
85	Chlorpropham	Halosulfuron	Bromacil	115	Chlorpropham	Trifloxysulfuron	Metazachlor
86	Chlorpropham	Halosulfuron	Saflufenacil	116	Chlorpropham	Trifloxysulfuron	Pinoxaden
87	Chlorpropham	Halosulfuron	Flumioxazin	117	Chlorpropham	Trifloxysulfuron	Pyraflufen
88	Chlorpropham	Halosulfuron	Metazachlor	118	Chlorpropham	Metsulfuron	Carfentrazone
89	Chlorpropham	Halosulfuron	Pinoxaden	119	Chlorpropham	Metsulfuron	Flucarbazone
90	Chlorpropham	Halosulfuron	Pyraflufen	120	Chlorpropham	Metsulfuron	Sulfentrazone
121	Chlorpropham	Metsulfuron	Bromacil	151	Chlorpropham	Pyraflufen	Metazachlor
122	Chlorpropham	Metsulfuron	Saflufenacil	152	Chlorpropham	Pyraflufen	Pinoxaden
123	Chlorpropham	Metsulfuron	Flumioxazin	153	Chlorpropham	Diclosulam	Carfentrazone
124	Chlorpropham	Metsulfuron	Metazachlor	154	Chlorpropham	Diclosulam	Flucarbazone
125	Chlorpropham	Metsulfuron	Pinoxaden	155	Chlorpropham	Diclosulam	Sulfentrazone
126	Chlorpropham	Metsulfuron	Pyraflufen	156	Chlorpropham	Diclosulam	Bromacil
127	Chlorpropham	Metazachlor	Carfentrazone	157	Chlorpropham	Diclosulam	Saflufenacil
128	Chlorpropham	Metazachlor	Flucarbazone	158	Chlorpropham	Diclosulam	Flumioxazin
129	Chlorpropham	Metazachlor	Sulfentrazone	159	Chlorpropham	Diclosulam	Metazachlor
130	Chlorpropham	Metazachlor	Bromacil	160	Chlorpropham	Diclosulam	Pinoxaden
131	Chlorpropham	Metazachlor	Saflufenacil	161	Chlorpropham	Diclosulam	Pyraflufen
132	Chlorpropham	Metazachlor	Flumioxazin	162	Chlorpropham	Penoxsulam	Carfentrazone
133	Chlorpropham	Metazachlor	Metazachlor	163	Chlorpropham	Penoxsulam	Flucarbazone
134	Chlorpropham	Metazachlor	Pinoxaden	164	Chlorpropham	Penoxsulam	Sulfentrazone
135	Chlorpropham	Metazachlor	Pyraflufen	165	Chlorpropham	Penoxsulam	Bromacil
136	Chlorpropham	Pinoxaden	Carfentrazone	166	Chlorpropham	Penoxsulam	Saflufenacil
137	Chlorpropham	Pinoxaden	Flucarbazone	167	Chlorpropham	Penoxsulam	Flumioxazin
138	Chlorpropham	Pinoxaden	Sulfentrazone	168	Chlorpropham	Penoxsulam	Metazachlor
139	Chlorpropham	Pinoxaden	Bromacil	169	Chlorpropham	Penoxsulam	Pinoxaden
140	Chlorpropham	Pinoxaden	Saflufenacil	170	Chlorpropham	Penoxsulam	Pyraflufen
141	Chlorpropham	Pinoxaden	Flumioxazin	171	Desmedipham	Imazamox	Carfentrazone
142	Chlorpropham	Pinoxaden	Metazachlor	172	Desmedipham	Imazamox	Flucarbazone
143	Chlorpropham	Pinoxaden	Pinoxaden	173	Desmedipham	Imazamox	Sulfentrazone
144	Chlorpropham	Pinoxaden	Pyraflufen	174	Desmedipham	Imazamox	Bromacil
145	Chlorpropham	Pyraflufen	Carfentrazone	175	Desmedipham	Imazamox	Saflufenacil
146	Chlorpropham	Pyraflufen	Flucarbazone	176	Desmedipham	Imazamox	Flumioxazin
147	Chlorpropham	Pyraflufen	Sulfentrazone	177	Desmedipham	Imazamox	Metazachlor
148	Chlorpropham	Pyraflufen	Bromacil	178	Desmedipham	Imazamox	Pinoxaden
149	Chlorpropham	Pyraflufen	Saflufenacil	179	Desmedipham	Imazamox	Pyraflufen
150	Chlorpropham	Pyraflufen	Flumioxazin	180	Desmedipham	Imazapic	Carfentrazone
181	Desmedipham	Imazapic	Flucarbazone	211	Desmedipham	Carfentrazone	Saflufenacil
182	Desmedipham	Imazapic	Sulfentrazone	212	Desmedipham	Carfentrazone	Flumioxazin
183	Desmedipham	Imazapic	Bromacil	213	Desmedipham	Carfentrazone	Metazachlor
184	Desmedipham	Imazapic	Saflufenacil	214	Desmedipham	Carfentrazone	Pinoxaden
185	Desmedipham	Imazapic	Flumioxazin	215	Desmedipham	Carfentrazone	Pyraflufen
186	Desmedipham	Imazapic	Metazachlor	216	Desmedipham	Flucarbazone	Carfentrazone
187	Desmedipham	Imazapic	Pinoxaden	217	Desmedipham	Flucarbazone	Flucarbazone
188	Desmedipham	Imazapic	Pyraflufen	218	Desmedipham	Flucarbazone	Sulfentrazone
189	Desmedipham	Imazapyr	Carfentrazone	219	Desmedipham	Flucarbazone	Bromacil
190	Desmedipham	Imazapyr	Flucarbazone	220	Desmedipham	Flucarbazone	Saflufenacil
191	Desmedipham	Imazapyr	Sulfentrazone	221	Desmedipham	Flucarbazone	Flumioxazin
192	Desmedipham	Imazapyr	Bromacil	222	Desmedipham	Flucarbazone	Metazachlor
193	Desmedipham	Imazapyr	Saflufenacil	223	Desmedipham	Flucarbazone	Pinoxaden
194	Desmedipham	Imazapyr	Flumioxazin	224	Desmedipham	Flucarbazone	Pyraflufen
195	Desmedipham	Imazapyr	Metazachlor	225	Desmedipham	Sulfentrazone	Carfentrazone

TABLE 1-continued

Photosystem II			Chlorophyll and Heme biosynthesis inhibitor	Photosystem II			Chlorophyll and Heme biosynthesis inhibitor
S No.	inhibitor	ALS inhibitor		S No.	inhibitor	ALS inhibitor	
196	Desmedipham	Imazapyr	Pinoxaden	226	Desmedipham	Sulfentrazone	Flucarbazone
197	Desmedipham	Imazapyr	Pyraflufen	227	Desmedipham	Sulfentrazone	Amicarbazone
198	Desmedipham	Imazethapyr	Carfentrazone	228	Desmedipham	Sulfentrazone	Bromacil
199	Desmedipham	Imazethapyr	Flucarbazone	229	Desmedipham	Sulfentrazone	Saflufenacil
200	Desmedipham	Imazethapyr	Sulfentrazone	230	Desmedipham	Sulfentrazone	Flumioxazin
201	Desmedipham	Imazethapyr	Bromacil	231	Desmedipham	Sulfentrazone	Metazachlor
202	Desmedipham	Imazethapyr	Saflufenacil	232	Desmedipham	Sulfentrazone	Pinoxaden
203	Desmedipham	Imazethapyr	Flumioxazin	233	Desmedipham	Sulfentrazone	Pyraflufen
204	Desmedipham	Imazethapyr	Metazachlor	234	Desmedipham	Flucarbazone-sodium	Carfentrazone
205	Desmedipham	Imazethapyr	Pinoxaden	235	Desmedipham	Flucarbazone-sodium	Flucarbazone
206	Desmedipham	Imazethapyr	Pyraflufen	236	Desmedipham	Flucarbazone-sodium	Sulfentrazone
207	Desmedipham	Carfentrazone	Carfentrazone	237	Desmedipham	Flucarbazone-sodium	Bromacil
208	Desmedipham	Carfentrazone	Flucarbazone	238	Desmedipham	Flucarbazone-sodium	Saflufenacil
209	Desmedipham	Carfentrazone	Sulfentrazone	239	Desmedipham	Flucarbazone-sodium	Flumioxazin
210	Desmedipham	Carfentrazone	Bromacil	240	Desmedipham	Flucarbazone-sodium	Metazachlor
241	Desmedipham	Flucarbazone-sodium	Pinoxaden	271	Desmedipham	Sulfosulfuron	Flucarbazone
242	Desmedipham	Flucarbazone-sodium	Pyraflufen	272	Desmedipham	Sulfosulfuron	Sulfentrazone
243	Desmedipham	Bensulfuron	Carfentrazone	273	Desmedipham	Sulfosulfuron	Bromacil
244	Desmedipham	Bensulfuron	Flucarbazone	274	Desmedipham	Sulfosulfuron	Saflufenacil
245	Desmedipham	Bensulfuron	Sulfentrazone	275	Desmedipham	Sulfosulfuron	Flumioxazin
246	Desmedipham	Bensulfuron	Bromacil	276	Desmedipham	Sulfosulfuron	Metazachlor
247	Desmedipham	Bensulfuron	Saflufenacil	277	Desmedipham	Sulfosulfuron	Pinoxaden
248	Desmedipham	Bensulfuron	Flumioxazin	278	Desmedipham	Sulfosulfuron	Pyraflufen
249	Desmedipham	Bensulfuron	Metazachlor	279	Desmedipham	Trifloxysulfuron	Carfentrazone
250	Desmedipham	Bensulfuron	Pinoxaden	280	Desmedipham	Trifloxysulfuron	Flucarbazone
251	Desmedipham	Bensulfuron	Pyraflufen	281	Desmedipham	Trifloxysulfuron	Sulfentrazone
252	Desmedipham	Halosulfuron	Carfentrazone	282	Desmedipham	Trifloxysulfuron	Bromacil
253	Desmedipham	Halosulfuron	Flucarbazone	283	Desmedipham	Trifloxysulfuron	Saflufenacil
254	Desmedipham	Halosulfuron	Sulfentrazone	284	Desmedipham	Trifloxysulfuron	Flumioxazin
255	Desmedipham	Halosulfuron	Bromacil	285	Desmedipham	Trifloxysulfuron	Metazachlor
256	Desmedipham	Halosulfuron	Saflufenacil	286	Desmedipham	Trifloxysulfuron	Pinoxaden
257	Desmedipham	Halosulfuron	Flumioxazin	287	Desmedipham	Trifloxysulfuron	Pyraflufen
258	Desmedipham	Halosulfuron	Metazachlor	288	Desmedipham	Metsulfuron	Carfentrazone
259	Desmedipham	Halosulfuron	Pinoxaden	289	Desmedipham	Metsulfuron	Flucarbazone
260	Desmedipham	Halosulfuron	Pyraflufen	290	Desmedipham	Metsulfuron	Sulfentrazone
261	Desmedipham	Pyrazosulfuron	Carfentrazone	291	Desmedipham	Metsulfuron	Bromacil
262	Desmedipham	Pyrazosulfuron	Flucarbazone	292	Desmedipham	Metsulfuron	Saflufenacil
263	Desmedipham	Pyrazosulfuron	Sulfentrazone	293	Desmedipham	Metsulfuron	Flumioxazin
264	Desmedipham	Pyrazosulfuron	Bromacil	294	Desmedipham	Metsulfuron	Metazachlor
265	Desmedipham	Pyrazosulfuron	Saflufenacil	295	Desmedipham	Metsulfuron	Pinoxaden
266	Desmedipham	Pyrazosulfuron	Flumioxazin	296	Desmedipham	Metsulfuron	Pyraflufen
267	Desmedipham	Pyrazosulfuron	Metazachlor	297	Desmedipham	Metazachlor	Carfentrazone
268	Desmedipham	Pyrazosulfuron	Pinoxaden	298	Desmedipham	Metazachlor	Flucarbazone
269	Desmedipham	Pyrazosulfuron	Pyraflufen	299	Desmedipham	Metazachlor	Sulfentrazone
270	Desmedipham	Sulfosulfuron	Carfentrazone	300	Desmedipham	Metazachlor	Bromacil
301	Desmedipham	Metazachlor	Saflufenacil	331	Desmedipham	Diclosulam	Pyraflufen
302	Desmedipham	Metazachlor	Flumioxazin	332	Desmedipham	Penoxsulam	Carfentrazone
303	Desmedipham	Metazachlor	Metazachlor	333	Desmedipham	Penoxsulam	Flucarbazone
304	Desmedipham	Metazachlor	Pinoxaden	334	Desmedipham	Penoxsulam	Sulfentrazone
305	Desmedipham	Metazachlor	Pyraflufen	335	Desmedipham	Penoxsulam	Bromacil
306	Desmedipham	Pinoxaden	Carfentrazone	336	Desmedipham	Penoxsulam	Saflufenacil
307	Desmedipham	Pinoxaden	Flucarbazone	337	Desmedipham	Penoxsulam	Flumioxazin
308	Desmedipham	Pinoxaden	Sulfentrazone	338	Desmedipham	Penoxsulam	Metazachlor
309	Desmedipham	Pinoxaden	Bromacil	339	Desmedipham	Penoxsulam	Pinoxaden
310	Desmedipham	Pinoxaden	Saflufenacil	340	Desmedipham	Penoxsulam	Pyraflufen
311	Desmedipham	Pinoxaden	Flumioxazin	341	Phenmedipham	Imazamox	Carfentrazone
312	Desmedipham	Pinoxaden	Metazachlor	342	Phenmedipham	Imazamox	Flucarbazone
313	Desmedipham	Pinoxaden	Pinoxaden	343	Phenmedipham	Imazamox	Sulfentrazone
314	Desmedipham	Pinoxaden	Pyraflufen	344	Phenmedipham	Imazamox	Bromacil
315	Desmedipham	Pyraflufen	Carfentrazone	345	Phenmedipham	Imazamox	Saflufenacil
316	Desmedipham	Pyraflufen	Flucarbazone	346	Phenmedipham	Imazamox	Flumioxazin
317	Desmedipham	Pyraflufen	Sulfentrazone	347	Phenmedipham	Imazamox	Metazachlor
318	Desmedipham	Pyraflufen	Bromacil	348	Phenmedipham	Imazamox	Pinoxaden
319	Desmedipham	Pyraflufen	Saflufenacil	349	Phenmedipham	Imazamox	Pyraflufen
320	Desmedipham	Pyraflufen	Flumioxazin	350	Phenmedipham	Imazapic	Carfentrazone
321	Desmedipham	Pyraflufen	Metazachlor	351	Phenmedipham	Imazapic	Flucarbazone

TABLE 1-continued

Photosystem II S No. inhibitor	ALS inhibitor	Chlorophyll and Heme biosynthesis inhibitor	Photosystem II S No. inhibitor	ALS inhibitor	Chlorophyll and Heme biosynthesis inhibitor
322 Desmedipham	Pyraflufen	Pinoxaden	352 Phenmedipham	Imazapic	Sulfentrazone
323 Desmedipham	Diclosulam	Carfentrazone	353 Phenmedipham	Imazapic	Bromacil
324 Desmedipham	Diclosulam	Flucarbazone	354 Phenmedipham	Imazapic	Saflufenacil
325 Desmedipham	Diclosulam	Sulfentrazone	355 Phenmedipham	Imazapic	Flumioxazin
326 Desmedipham	Diclosulam	Bromacil	356 Phenmedipham	Imazapic	Metazachlor
327 Desmedipham	Diclosulam	Saflufenacil	357 Phenmedipham	Imazapic	Pinoxaden
328 Desmedipham	Diclosulam	Flumioxazin	358 Phenmedipham	Imazapic	Pyraflufen
329 Desmedipham	Diclosulam	Metazachlor	359 Phenmedipham	Imazapyr	Carfentrazone
330 Desmedipham	Diclosulam	Pinoxaden	360 Phenmedipham	Imazapyr	Flucarbazone
361 Phenmedipham	Imazapyr	Sulfentrazone	391 Phenmedipham	Flucarbazone	Flumioxazin
362 Phenmedipham	Imazapyr	Bromacil	392 Phenmedipham	Flucarbazone	Metazachlor
363 Phenmedipham	Imazapyr	Saflufenacil	393 Phenmedipham	Flucarbazone	Pinoxaden
364 Phenmedipham	Imazapyr	Flumioxazin	394 Phenmedipham	Flucarbazone	Pyraflufen
365 Phenmedipham	Imazapyr	Metazachlor	395 Phenmedipham	Sulfentrazone	Carfentrazone
366 Phenmedipham	Imazapyr	Pinoxaden	396 Phenmedipham	Sulfentrazone	Flucarbazone
367 Phenmedipham	Imazapyr	Pyraflufen	397 Phenmedipham	Sulfentrazone	Amicarbazone
368 Phenmedipham	Imazethapyr	Carfentrazone	398 Phenmedipham	Sulfentrazone	Bromacil
369 Phenmedipham	Imazethapyr	Flucarbazone	399 Phenmedipham	Sulfentrazone	Saflufenacil
370 Phenmedipham	Imazethapyr	Sulfentrazone	400 Phenmedipham	Sulfentrazone	Flumioxazin
371 Phenmedipham	Imazethapyr	Bromacil	401 Phenmedipham	Sulfentrazone	Metazachlor
372 Phenmedipham	Imazethapyr	Saflufenacil	402 Phenmedipham	Sulfentrazone	Pinoxaden
373 Phenmedipham	Imazethapyr	Flumioxazin	403 Phenmedipham	Sulfentrazone	Pyraflufen
374 Phenmedipham	Imazethapyr	Metazachlor	404 Phenmedipham	Flucarbazone- sodium	Carfentrazone
375 Desmedipham	Imazethapyr	Pinoxaden	405 Phenmedipham	Flucarbazone- sodium	Flucarbazone
376 Phenmedipham	Imazethapyr	Pyraflufen	406 Phenmedipham	Flucarbazone- sodium	Sulfentrazone
377 Phenmedipham	Carfentrazone	Carfentrazone	407 Phenmedipham	Flucarbazone- sodium	Bromacil
378 Phenmedipham	Carfentrazone	Flucarbazone	408 Phenmedipham	Flucarbazone- sodium	Saflufenacil
379 Phenmedipham	Carfentrazone	Sulfentrazone	409 Phenmedipham	Flucarbazone- sodium	Flumioxazin
380 Phenmedipham	Carfentrazone	Bromacil	410 Phenmedipham	Flucarbazone- sodium	Metazachlor
381 Phenmedipham	Carfentrazone	Saflufenacil	411 Phenmedipham	Flucarbazone- sodium	Pinoxaden
382 Phenmedipham	Carfentrazone	Flumioxazin	412 Phenmedipham	Flucarbazone- sodium	Pyraflufen
383 Phenmedipham	Carfentrazone	Metazachlor	413 Phenmedipham	Bensulfuron	Carfentrazone
384 Phenmedipham	Carfentrazone	Pinoxaden	414 Phenmedipham	Bensulfuron	Flucarbazone
385 Phenmedipham	Carfentrazone	Pyraflufen	415 Phenmedipham	Bensulfuron	Sulfentrazone
386 Phenmedipham	Flucarbazone	Carfentrazone	416 Phenmedipham	Bensulfuron	Bromacil
387 Phenmedipham	Flucarbazone	Flucarbazone	417 Phenmedipham	Bensulfuron	Saflufenacil
388 Phenmedipham	Flucarbazone	Sulfentrazone	418 Phenmedipham	Bensulfuron	Flumioxazin
389 Phenmedipham	Flucarbazone	Bromacil	419 Phenmedipham	Bensulfuron	Metazachlor
390 Phenmedipham	Flucarbazone	Saflufenacil	420 Phenmedipham	Bensulfuron	Pinoxaden
421 Phenmedipham	Bensulfuron	Pyraflufen	451 Phenmedipham	Trifloxysulfuron	Sulfentrazone
422 Phenmedipham	Halosulfuron	Carfentrazone	452 Phenmedipham	Trifloxysulfuron	Bromacil
423 Phenmedipham	Halosulfuron	Flucarbazone	453 Phenmedipham	Trifloxysulfuron	Saflufenacil
424 Phenmedipham	Halosulfuron	Sulfentrazone	454 Phenmedipham	Trifloxysulfuron	Flumioxazin
425 Phenmedipham	Halosulfuron	Bromacil	455 Phenmedipham	Trifloxysulfuron	Metazachlor
426 Phenmedipham	Halosulfuron	Saflufenacil	456 Phenmedipham	Trifloxysulfuron	Pinoxaden
427 Phenmedipham	Halosulfuron	Flumioxazin	457 Phenmedipham	Trifloxysulfuron	Pyraflufen
428 Phenmedipham	Halosulfuron	Metazachlor	458 Phenmedipham	Metsulfuron	Carfentrazone
429 Phenmedipham	Halosulfuron	Pinoxaden	459 Phenmedipham	Metsulfuron	Flucarbazone
430 Phenmedipham	Halosulfuron	Pyraflufen	460 Phenmedipham	Metsulfuron	Sulfentrazone
431 Phenmedipham	Pyrazosulfuron	Carfentrazone	461 Phenmedipham	Metsulfuron	Bromacil
432 Phenmedipham	Pyrazosulfuron	Flucarbazone	462 Phenmedipham	Metsulfuron	Saflufenacil
433 Phenmedipham	Pyrazosulfuron	Sulfentrazone	463 Phenmedipham	Metsulfuron	Flumioxazin
434 Phenmedipham	Pyrazosulfuron	Bromacil	464 Phenmedipham	Metsulfuron	Metazachlor
435 Phenmedipham	Pyrazosulfuron	Saflufenacil	465 Phenmedipham	Metsulfuron	Pinoxaden
436 Phenmedipham	Pyrazosulfuron	Flumioxazin	466 Phenmedipham	Metsulfuron	Pyraflufen
437 Phenmedipham	Pyrazosulfuron	Metazachlor	467 Phenmedipham	Metazachlor	Carfentrazone
438 Phenmedipham	Pyrazosulfuron	Pinoxaden	468 Phenmedipham	Metazachlor	Flucarbazone
439 Phenmedipham	Pyrazosulfuron	Pyraflufen	469 Phenmedipham	Metazachlor	Sulfentrazone
440 Phenmedipham	Sulfosulfuron	Carfentrazone	470 Phenmedipham	Metazachlor	Bromacil
441 Phenmedipham	Sulfosulfuron	Flucarbazone	471 Phenmedipham	Metazachlor	Saflufenacil
442 Phenmedipham	Sulfosulfuron	Sulfentrazone	472 Phenmedipham	Metazachlor	Flumioxazin
443 Phenmedipham	Sulfosulfuron	Bromacil	473 Phenmedipham	Metazachlor	Metazachlor
444 Phenmedipham	Sulfosulfuron	Saflufenacil	474 Phenmedipham	Metazachlor	Pinoxaden
445 Phenmedipham	Sulfosulfuron	Flumioxazin	475 Phenmedipham	Metazachlor	Pyraflufen
446 Phenmedipham	Sulfosulfuron	Metazachlor	476 Phenmedipham	Pinoxaden	Carfentrazone
447 Phenmedipham	Sulfosulfuron	Pinoxaden	477 Phenmedipham	Pinoxaden	Flucarbazone

TABLE 1-continued

S No.	Photosystem II inhibitor	ALS inhibitor	Chlorophyll and Heme biosynthesis inhibitor	S No.	Photosystem II inhibitor	ALS inhibitor	Chlorophyll and Heme biosynthesis inhibitor
448	Phenmedipham	Sulfosulfuron	Pyraflufen	478	Phenmedipham	Pinoxaden	Sulfentrazone
449	Phenmedipham	Trifloxysulfuron	Carfentrazone	479	Phenmedipham	Pinoxaden	Bromacil
450	Phenmedipham	Trifloxysulfuron	Flucarbazone	480	Phenmedipham	Pinoxaden	Saflufenacil
481	Phenmedipham	Pinoxaden	Flumioxazin	511	Phenmedipham-ethyl	Imazamox	Carfentrazone
482	Phenmedipham	Pinoxaden	Metazachlor	512	Phenmedipham-ethyl	Imazamox	Flucarbazone
483	Phenmedipham	Pinoxaden	Pinoxaden	513	Phenmedipham-ethyl	Imazamox	Sulfentrazone
484	Phenmedipham	Pinoxaden	Pyraflufen	514	Phenmedipham-ethyl	Imazamox	Bromacil
485	Phenmedipham	Pyraflufen	Carfentrazone	515	Phenmedipham-ethyl	Imazamox	Saflufenacil
486	Phenmedipham	Pyraflufen	Flucarbazone	516	Phenmedipham-ethyl	Imazamox	Flumioxazin
487	Phenmedipham	Pyraflufen	Sulfentrazone	517	Phenmedipham-ethyl	Imazamox	Metazachlor
488	Phenmedipham	Pyraflufen	Bromacil	518	Phenmedipham-ethyl	Imazamox	Pinoxaden
489	Phenmedipham	Pyraflufen	Saflufenacil	519	Phenmedipham-ethyl	Imazamox	Pyraflufen
490	Phenmedipham	Pyraflufen	Flumioxazin	520	Phenmedipham-ethyl	Imazapic	Carfentrazone
491	Phenmedipham	Pyraflufen	Metazachlor	521	Phenmedipham-ethyl	Imazapic	Flucarbazone
492	Phenmedipham	Pyraflufen	Pinoxaden	522	Phenmedipham-ethyl	Imazapic	Sulfentrazone
493	Phenmedipham	Diclosulam	Carfentrazone	523	Phenmedipham-ethyl	Imazapic	Bromacil
494	Phenmedipham	Diclosulam	Flucarbazone	524	Phenmedipham-ethyl	Imazapic	Saflufenacil
495	Phenmedipham	Diclosulam	Sulfentrazone	525	Phenmedipham-ethyl	Imazapic	Flumioxazin
496	Phenmedipham	Diclosulam	Bromacil	526	Phenmedipham-ethyl	Imazapic	Metazachlor
497	Phenmedipham	Diclosulam	Saflufenacil	527	Phenmedipham-ethyl	Imazapic	Pinoxaden
498	Phenmedipham	Diclosulam	Flumioxazin	528	Phenmedipham-ethyl	Imazapic	Pyraflufen
499	Phenmedipham	Diclosulam	Metazachlor	529	Phenmedipham-ethyl	Imazapyr	Carfentrazone
500	Phenmedipham	Diclosulam	Pinoxaden	530	Phenmedipham-ethyl	Imazapyr	Flucarbazone
501	Phenmedipham	Diclosulam	Pyraflufen	531	Phenmedipham-ethyl	Imazapyr	Sulfentrazone
502	Phenmedipham	Penoxsulam	Carfentrazone	532	Phenmedipham-ethyl	Imazapyr	Bromacil
503	Phenmedipham	Penoxsulam	Flucarbazone	533	Phenmedipham-ethyl	Imazapyr	Saflufenacil
504	Phenmedipham	Penoxsulam	Sulfentrazone	534	Phenmedipham-ethyl	Imazapyr	Flumioxazin
505	Phenmedipham	Penoxsulam	Bromacil	535	Phenmedipham-ethyl	Imazapyr	Metazachlor
506	Phenmedipham	Penoxsulam	Saflufenacil	536	Phenmedipham-ethyl	Imazapyr	Pinoxaden
507	Phenmedipham	Penoxsulam	Flumioxazin	537	Phenmedipham-ethyl	Imazapyr	Pyraflufen
508	Phenmedipham	Penoxsulam	Metazachlor	538	Phenmedipham-ethyl	Imazethapyr	Carfentrazone
509	Phenmedipham	Penoxsulam	Pinoxaden	539	Phenmedipham-ethyl	Imazethapyr	Flucarbazone
510	Phenmedipham	Penoxsulam	Pyraflufen	540	Phenmedipham-ethyl	Imazethapyr	Sulfentrazone
541	Phenmedipham-ethyl	Imazethapyr	Bromacil	571	Phenmedipham-ethyl	Sulfentrazone	Metazachlor
542	Phenmedipham-ethyl	Imazethapyr	Saflufenacil	572	Phenmedipham-ethyl	Sulfentrazone	Pinoxaden
543	Phenmedipham-ethyl	Imazethapyr	Flumioxazin	573	Phenmedipham-ethyl	Sulfentrazone	Pyraflufen
544	Phenmedipham-ethyl	Imazethapyr	Metazachlor	574	Phenmedipham-ethyl	Flucarbazone-sodium	Carfentrazone
545	Phenmedipham-ethyl	Imazethapyr	Pinoxaden	575	Phenmedipham-ethyl	Flucarbazone-sodium	Flucarbazone
546	Phenmedipham-ethyl	Imazethapyr	Pyraflufen	576	Phenmedipham-ethyl	Flucarbazone-sodium	Sulfentrazone

TABLE 1-continued

S No.	Photosystem II inhibitor	ALS inhibitor	Chlorophyll and Heme biosynthesis inhibitor	S No.	Photosystem II inhibitor	ALS inhibitor	Chlorophyll and Heme biosynthesis inhibitor
547	Phenmedipham-ethyl	Carfentrazone	Carfentrazone	577	Phenmedipham-ethyl	Flucarbazon-sodium	Bromacil
548	Phenmedipham-ethyl	Carfentrazone	Flucarbazon	578	Phenmedipham-ethyl	Flucarbazon-sodium	Saflufenacil
549	Phenmedipham-ethyl	Carfentrazone	Sulfentrazone	579	Phenmedipham-ethyl	Flucarbazon-sodium	Flumioxazin
550	Phenmedipham-ethyl	Carfentrazone	Bromacil	580	Phenmedipham-ethyl	Flucarbazon-sodium	Metazachlor
551	Phenmedipham-ethyl	Carfentrazone	Saflufenacil	581	Phenmedipham-ethyl	Flucarbazon-sodium	Pinoxaden
552	Phenmedipham-ethyl	Carfentrazone	Flumioxazin	582	Phenmedipham-ethyl	Flucarbazon-sodium	Pyraflufen
553	Phenmedipham-ethyl	Carfentrazone	Metazachlor	583	Phenmedipham-ethyl	Bensulfuron	Carfentrazone
554	Phenmedipham-ethyl	Carfentrazone	Pinoxaden	584	Phenmedipham-ethyl	Bensulfuron	Flucarbazon
555	Phenmedipham-ethyl	Carfentrazone	Pyraflufen	585	Phenmedipham-ethyl	Bensulfuron	Sulfentrazone
556	Phenmedipham-ethyl	Flucarbazon	Carfentrazone	586	Phenmedipham-ethyl	Bensulfuron	Bromacil
557	Phenmedipham-ethyl	Flucarbazon	Flucarbazon	587	Phenmedipham-ethyl	Bensulfuron	Saflufenacil
558	Phenmedipham-ethyl	Flucarbazon	Sulfentrazone	588	Phenmedipham-ethyl	Bensulfuron	Flumioxazin
559	Phenmedipham-ethyl	Flucarbazon	Bromacil	589	Phenmedipham-ethyl	Bensulfuron	Metazachlor
560	Phenmedipham-ethyl	Flucarbazon	Saflufenacil	590	Phenmedipham-ethyl	Bensulfuron	Pinoxaden
561	Phenmedipham-ethyl	Flucarbazon	Flumioxazin	591	Phenmedipham-ethyl	Bensulfuron	Pyraflufen
562	Phenmedipham-ethyl	Flucarbazon	Metazachlor	592	Phenmedipham-ethyl	Halosulfuron	Carfentrazone
563	Phenmedipham-ethyl	Flucarbazon	Pinoxaden	593	Phenmedipham-ethyl	Halosulfuron	Flucarbazon
564	Phenmedipham-ethyl	Flucarbazon	Pyraflufen	594	Phenmedipham-ethyl	Halosulfuron	Sulfentrazone
565	Phenmedipham-ethyl	Sulfentrazone	Carfentrazone	595	Phenmedipham-ethyl	Halosulfuron	Bromacil
566	Phenmedipham-ethyl	Sulfentrazone	Flucarbazon	596	Phenmedipham-ethyl	Halosulfuron	Saflufenacil
567	Phenmedipham-ethyl	Sulfentrazone	Amicarbazone	597	Phenmedipham-ethyl	Halosulfuron	Flumioxazin
568	Phenmedipham-ethyl	Sulfentrazone	Bromacil	598	Phenmedipham-ethyl	Halosulfuron	Metazachlor
569	Phenmedipham-ethyl	Sulfentrazone	Saflufenacil	599	Phenmedipham-ethyl	Halosulfuron	Pinoxaden
570	Phenmedipham-ethyl	Sulfentrazone	Flumioxazin	600	Phenmedipham-ethyl	Halosulfuron	Pyraflufen
601	Phenmedipham-ethyl	Pyrazosulfuron	Carfentrazone	631	Phenmedipham-ethyl	Metsulfuron	Bromacil
602	Phenmedipham-ethyl	Pyrazosulfuron	Flucarbazon	632	Phenmedipham-ethyl	Metsulfuron	Saflufenacil
603	Phenmedipham-ethyl	Pyrazosulfuron	Sulfentrazone	633	Phenmedipham-ethyl	Metsulfuron	Flumioxazin
604	Phenmedipham-ethyl	Pyrazosulfuron	Bromacil	634	Phenmedipham-ethyl	Metsulfuron	Metazachlor
605	Phenmedipham-ethyl	Pyrazosulfuron	Saflufenacil	635	Phenmedipham-ethyl	Metsulfuron	Pinoxaden
606	Phenmedipham-ethyl	Pyrazosulfuron	Flumioxazin	636	Phenmedipham-ethyl	Metsulfuron	Pyraflufen
607	Phenmedipham-ethyl	Pyrazosulfuron	Metazachlor	637	Phenmedipham-ethyl	Metazachlor	Carfentrazone
608	Phenmedipham-ethyl	Pyrazosulfuron	Pinoxaden	638	Phenmedipham-ethyl	Metazachlor	Flucarbazon
609	Phenmedipham-ethyl	Pyrazosulfuron	Pyraflufen	639	Phenmedipham-ethyl	Metazachlor	Sulfentrazone
610	Phenmedipham-ethyl	Sulfosulfuron	Carfentrazone	640	Phenmedipham-ethyl	Metazachlor	Bromacil
611	Phenmedipham-ethyl	Sulfosulfuron	Flucarbazon	641	Phenmedipham-ethyl	Metazachlor	Saflufenacil
612	Phenmedipham-ethyl	Sulfosulfuron	Sulfentrazone	642	Phenmedipham-ethyl	Metazachlor	Flumioxazin
613	Phenmedipham-ethyl	Sulfosulfuron	Bromacil	643	Phenmedipham-ethyl	Metazachlor	Metazachlor

TABLE 1-continued

S No.	Photosystem II inhibitor	ALS inhibitor	Chlorophyll and Heme biosynthesis inhibitor	S No.	Photosystem II inhibitor	ALS inhibitor	Chlorophyll and Heme biosynthesis inhibitor
614	Phenmedipham-ethyl	Sulfosulfuron	Saflufenacil	644	Phenmedipham-ethyl	Metazachlor	Pinoxaden
615	Phenmedipham-ethyl	Sulfosulfuron	Flumioxazin	645	Phenmedipham-ethyl	Metazachlor	Pyraflufen
616	Phenmedipham-ethyl	Sulfosulfuron	Metazachlor	646	Phenmedipham-ethyl	Pinoxaden	Carfentrazone
617	Phenmedipham-ethyl	Sulfosulfuron	Pinoxaden	647	Phenmedipham-ethyl	Pinoxaden	Flucarbazone
618	Phenmedipham-ethyl	Sulfosulfuron	Pyraflufen	648	Phenmedipham-ethyl	Pinoxaden	Sulfentrazone
619	Phenmedipham-ethyl	Trifloxysulfuron	Carfentrazone	649	Phenmedipham-ethyl	Pinoxaden	Bromacil
620	Phenmedipham-ethyl	Trifloxysulfuron	Flucarbazone	650	Phenmedipham-ethyl	Pinoxaden	Saflufenacil
621	Phenmedipham-ethyl	Trifloxysulfuron	Sulfentrazone	651	Phenmedipham-ethyl	Pinoxaden	Flumioxazin
622	Phenmedipham-ethyl	Trifloxysulfuron	Bromacil	652	Phenmedipham-ethyl	Pinoxaden	Metazachlor
623	Phenmedipham-ethyl	Trifloxysulfuron	Saflufenacil	653	Phenmedipham-ethyl	Pinoxaden	Pinoxaden
624	Phenmedipham-ethyl	Trifloxysulfuron	Flumioxazin	654	Phenmedipham-ethyl	Pinoxaden	Pyraflufen
625	Phenmedipham-ethyl	Trifloxysulfuron	Metazachlor	655	Phenmedipham-ethyl	Pyraflufen	Carfentrazone
626	Phenmedipham-ethyl	Trifloxysulfuron	Pinoxaden	656	Phenmedipham-ethyl	Pyraflufen	Flucarbazone
627	Phenmedipham-ethyl	Trifloxysulfuron	Pyraflufen	657	Phenmedipham-ethyl	Pyraflufen	Sulfentrazone
628	Phenmedipham-ethyl	Metsulfuron	Carfentrazone	658	Phenmedipham-ethyl	Pyraflufen	Bromacil
629	Phenmedipham-ethyl	Metsulfuron	Flucarbazone	659	Phenmedipham-ethyl	Pyraflufen	Saflufenacil
630	Phenmedipham-ethyl	Metsulfuron	Sulfentrazone	660	Phenmedipham-ethyl	Pyraflufen	Flumioxazin
661	Phenmedipham-ethyl	Pyraflufen	Metazachlor	691	Atrazine	Imazapic	Flucarbazone
662	Phenmedipham-ethyl	Pyraflufen	Pinoxaden	692	Atrazine	Imazapic	Sulfentrazone
663	Phenmedipham-ethyl	Diclosulam	Carfentrazone	693	Atrazine	Imazapic	Bromacil
664	Phenmedipham-ethyl	Diclosulam	Flucarbazone	694	Atrazine	Imazapic	Saflufenacil
665	Phenmedipham-ethyl	Diclosulam	Sulfentrazone	695	Atrazine	Imazapic	Flumioxazin
666	Phenmedipham-ethyl	Diclosulam	Bromacil	696	Atrazine	Imazapic	Metazachlor
667	Phenmedipham-ethyl	Diclosulam	Saflufenacil	697	Atrazine	Imazapic	Pinoxaden
668	Phenmedipham-ethyl	Diclosulam	Flumioxazin	698	Atrazine	Imazapic	Pyraflufen
669	Phenmedipham-ethyl	Diclosulam	Metazachlor	699	Atrazine	Imazapyr	Carfentrazone
670	Phenmedipham-ethyl	Diclosulam	Pinoxaden	700	Atrazine	Imazapyr	Flucarbazone
671	Phenmedipham-ethyl	Diclosulam	Pyraflufen	701	Atrazine	Imazapyr	Sulfentrazone
672	Phenmedipham-ethyl	Penoxsulam	Carfentrazone	702	Atrazine	Imazapyr	Bromacil
673	Phenmedipham-ethyl	Penoxsulam	Flucarbazone	703	Atrazine	Imazapyr	Saflufenacil
674	Phenmedipham-ethyl	Penoxsulam	Sulfentrazone	704	Atrazine	Imazapyr	Flumioxazin
675	Phenmedipham-ethyl	Penoxsulam	Bromacil	705	Atrazine	Imazapyr	Metazachlor
676	Phenmedipham-ethyl	Penoxsulam	Saflufenacil	706	Atrazine	Imazapyr	Pinoxaden
677	Phenmedipham-ethyl	Penoxsulam	Flumioxazin	707	Atrazine	Imazapyr	Pyraflufen
678	Phenmedipham-ethyl	Penoxsulam	Metazachlor	708	Atrazine	Imazethapyr	Carfentrazone
679	Phenmedipham-ethyl	Penoxsulam	Pinoxaden	709	Atrazine	Imazethapyr	Flucarbazone
680	Phenmedipham-ethyl	Penoxsulam	Pyraflufen	710	Atrazine	Imazethapyr	Sulfentrazone
681	Atrazine	Imazamox	Carfentrazone	711	Atrazine	Imazethapyr	Bromacil

TABLE 1-continued

Photosystem II			Photosystem II		
S No.	inhibitor	Chlorophyll and Heme biosynthesis inhibitor	S No.	inhibitor	Chlorophyll and Heme biosynthesis inhibitor
682	Atrazine	Imazamox	712	Atrazine	Imazethapyr
683	Atrazine	Imazamox	713	Atrazine	Imazethapyr
684	Atrazine	Imazamox	714	Atrazine	Imazethapyr
685	Atrazine	Imazamox	715	Atrazine	Imazethapyr
686	Atrazine	Imazamox	716	Atrazine	Imazethapyr
687	Atrazine	Imazamox	717	Atrazine	Carfentrazone
688	Atrazine	Imazamox	718	Atrazine	Carfentrazone
689	Atrazine	Imazamox	719	Atrazine	Carfentrazone
690	Atrazine	Imazapic	720	Atrazine	Carfentrazone
721	Atrazine	Carfentrazone	751	Atrazine	Flucarbazon-sodium
722	Atrazine	Carfentrazone	752	Atrazine	Flucarbazon-sodium
723	Atrazine	Carfentrazone	753	Atrazine	Bensulfuron
724	Atrazine	Carfentrazone	754	Atrazine	Bensulfuron
725	Atrazine	Carfentrazone	755	Atrazine	Bensulfuron
726	Atrazine	Flucarbazon	756	Atrazine	Bensulfuron
727	Atrazine	Flucarbazon	757	Atrazine	Bensulfuron
728	Atrazine	Flucarbazon	758	Atrazine	Bensulfuron
729	Atrazine	Flucarbazon	759	Atrazine	Bensulfuron
730	Atrazine	Flucarbazon	760	Atrazine	Bensulfuron
731	Atrazine	Flucarbazon	761	Atrazine	Bensulfuron
732	Atrazine	Flucarbazon	762	Atrazine	Halosulfuron
733	Atrazine	Flucarbazon	763	Atrazine	Halosulfuron
734	Atrazine	Flucarbazon	764	Atrazine	Halosulfuron
735	Atrazine	Sulfentrazone	765	Atrazine	Halosulfuron
736	Atrazine	Sulfentrazone	766	Atrazine	Halosulfuron
737	Atrazine	Sulfentrazone	767	Atrazine	Halosulfuron
738	Atrazine	Sulfentrazone	768	Atrazine	Halosulfuron
739	Atrazine	Sulfentrazone	769	Atrazine	Halosulfuron
740	Atrazine	Sulfentrazone	770	Atrazine	Halosulfuron
741	Atrazine	Sulfentrazone	771	Atrazine	Pyrazosulfuron
742	Atrazine	Sulfentrazone	772	Atrazine	Pyrazosulfuron
743	Atrazine	Sulfentrazone	773	Atrazine	Pyrazosulfuron
744	Atrazine	Flucarbazon-sodium	774	Atrazine	Pyrazosulfuron
745	Atrazine	Flucarbazon-sodium	775	Atrazine	Pyrazosulfuron
746	Atrazine	Flucarbazon-sodium	776	Atrazine	Pyrazosulfuron
747	Atrazine	Flucarbazon-sodium	777	Atrazine	Pyrazosulfuron
748	Atrazine	Flucarbazon-sodium	778	Atrazine	Pyrazosulfuron
749	Atrazine	Flucarbazon-sodium	779	Atrazine	Pyrazosulfuron
750	Atrazine	Flucarbazon-sodium	780	Atrazine	Sulfosulfuron
781	Atrazine	Sulfosulfuron	811	Atrazine	Metazachlor
782	Atrazine	Sulfosulfuron	812	Atrazine	Metazachlor
783	Atrazine	Sulfosulfuron	813	Atrazine	Metazachlor
784	Atrazine	Sulfosulfuron	814	Atrazine	Metazachlor
785	Atrazine	Sulfosulfuron	815	Atrazine	Metazachlor
786	Atrazine	Sulfosulfuron	816	Atrazine	Pinoxaden
787	Atrazine	Sulfosulfuron	817	Atrazine	Pinoxaden
788	Atrazine	Sulfosulfuron	818	Atrazine	Pinoxaden
789	Atrazine	Trifloxysulfuron	819	Atrazine	Pinoxaden
790	Atrazine	Trifloxysulfuron	820	Atrazine	Pinoxaden
791	Atrazine	Trifloxysulfuron	821	Atrazine	Pinoxaden
792	Atrazine	Trifloxysulfuron	822	Atrazine	Pinoxaden
793	Atrazine	Trifloxysulfuron	823	Atrazine	Pinoxaden
794	Atrazine	Trifloxysulfuron	824	Atrazine	Pinoxaden
795	Atrazine	Trifloxysulfuron	825	Atrazine	Pyraflufen
796	Atrazine	Trifloxysulfuron	826	Atrazine	Pyraflufen
797	Atrazine	Trifloxysulfuron	827	Atrazine	Pyraflufen
798	Atrazine	Metsulfuron	828	Atrazine	Pyraflufen
799	Atrazine	Metsulfuron	829	Atrazine	Pyraflufen
800	Atrazine	Metsulfuron	830	Atrazine	Pyraflufen
801	Atrazine	Metsulfuron	831	Atrazine	Pyraflufen
802	Atrazine	Metsulfuron	832	Atrazine	Pyraflufen
803	Atrazine	Metsulfuron	833	Atrazine	Diclosulam
804	Atrazine	Metsulfuron	834	Atrazine	Diclosulam
805	Atrazine	Metsulfuron	835	Atrazine	Diclosulam
806	Atrazine	Metsulfuron	836	Atrazine	Diclosulam
807	Atrazine	Metazachlor	837	Atrazine	Diclosulam

TABLE 1-continued

Photosystem II			Photosystem II		
S No.	inhibitor	Chlorophyll and Heme biosynthesis inhibitor	S No.	inhibitor	Chlorophyll and Heme biosynthesis inhibitor
808	Atrazine	Metazachlor	838	Atrazine	Diclosulam
809	Atrazine	Metazachlor	839	Atrazine	Diclosulam
810	Atrazine	Metazachlor	840	Atrazine	Diclosulam
841	Atrazine	Diclosulam	871	Hexazinone	Imazapyr
842	Atrazine	Penoxsulam	872	Hexazinone	Imazapyr
843	Atrazine	Penoxsulam	873	Hexazinone	Imazapyr
844	Atrazine	Penoxsulam	874	Hexazinone	Imazapyr
845	Atrazine	Penoxsulam	875	Hexazinone	Imazapyr
846	Atrazine	Penoxsulam	876	Hexazinone	Imazapyr
847	Atrazine	Penoxsulam	877	Hexazinone	Imazapyr
848	Atrazine	Penoxsulam	878	Hexazinone	Imazethapyr
849	Atrazine	Penoxsulam	879	Hexazinone	Imazethapyr
850	Atrazine	Penoxsulam	880	Hexazinone	Imazethapyr
851	Hexazinone	Imazamox	881	Hexazinone	Imazethapyr
852	Hexazinone	Imazamox	882	Hexazinone	Imazethapyr
853	Hexazinone	Imazamox	883	Hexazinone	Imazethapyr
854	Hexazinone	Imazamox	884	Hexazinone	Imazethapyr
855	Hexazinone	Imazamox	885	Hexazinone	Imazethapyr
856	Hexazinone	Imazamox	886	Hexazinone	Imazethapyr
857	Hexazinone	Imazamox	887	Hexazinone	Carfentrazone
858	Hexazinone	Imazamox	888	Hexazinone	Carfentrazone
859	Hexazinone	Imazamox	889	Hexazinone	Carfentrazone
860	Hexazinone	Imazapic	890	Hexazinone	Carfentrazone
861	Hexazinone	Imazapic	891	Hexazinone	Carfentrazone
862	Hexazinone	Imazapic	892	Hexazinone	Carfentrazone
863	Hexazinone	Imazapic	893	Hexazinone	Carfentrazone
864	Hexazinone	Imazapic	894	Hexazinone	Carfentrazone
865	Hexazinone	Imazapic	895	Hexazinone	Carfentrazone
866	Hexazinone	Imazapic	896	Hexazinone	Flucarbazon
867	Hexazinone	Imazapic	897	Hexazinone	Flucarbazon
868	Hexazinone	Imazapic	898	Hexazinone	Flucarbazon
869	Hexazinone	Imazapyr	899	Hexazinone	Flucarbazon
870	Hexazinone	Imazapyr	900	Hexazinone	Flucarbazon
901	Hexazinone	Flucarbazon	931	Hexazinone	Bensulfuron
902	Hexazinone	Flucarbazon	932	Hexazinone	Halosulfuron
903	Hexazinone	Flucarbazon	933	Hexazinone	Halosulfuron
904	Hexazinone	Flucarbazon	934	Hexazinone	Halosulfuron
905	Hexazinone	Sulfentrazone	935	Hexazinone	Halosulfuron
906	Hexazinone	Sulfentrazone	936	Hexazinone	Halosulfuron
907	Hexazinone	Sulfentrazone	937	Hexazinone	Halosulfuron
908	Hexazinone	Sulfentrazone	938	Hexazinone	Halosulfuron
909	Hexazinone	Sulfentrazone	939	Hexazinone	Halosulfuron
910	Hexazinone	Sulfentrazone	940	Hexazinone	Halosulfuron
911	Hexazinone	Sulfentrazone	941	Hexazinone	Pyrazosulfuron
912	Hexazinone	Sulfentrazone	942	Hexazinone	Pyrazosulfuron
913	Hexazinone	Sulfentrazone	943	Hexazinone	Pyrazosulfuron
914	Hexazinone	Flucarbazon-sodium	944	Hexazinone	Pyrazosulfuron
915	Hexazinone	Flucarbazon-sodium	945	Hexazinone	Pyrazosulfuron
916	Hexazinone	Flucarbazon-sodium	946	Hexazinone	Pyrazosulfuron
917	Hexazinone	Flucarbazon-sodium	947	Hexazinone	Pyrazosulfuron
918	Hexazinone	Flucarbazon-sodium	948	Hexazinone	Pyrazosulfuron
919	Hexazinone	Flucarbazon-sodium	949	Hexazinone	Pyrazosulfuron
920	Hexazinone	Flucarbazon-sodium	950	Hexazinone	Sulfosulfuron
921	Hexazinone	Flucarbazon-sodium	951	Hexazinone	Sulfosulfuron
922	Hexazinone	Flucarbazon-sodium	952	Hexazinone	Sulfosulfuron
923	Hexazinone	Bensulfuron	953	Hexazinone	Sulfosulfuron
924	Hexazinone	Bensulfuron	954	Hexazinone	Sulfosulfuron
925	Hexazinone	Bensulfuron	955	Hexazinone	Sulfosulfuron
926	Hexazinone	Bensulfuron	956	Hexazinone	Sulfosulfuron
927	Hexazinone	Bensulfuron	957	Hexazinone	Sulfosulfuron
928	Hexazinone	Bensulfuron	958	Hexazinone	Sulfosulfuron
929	Hexazinone	Bensulfuron	959	Hexazinone	Trifloxysulfuron
930	Hexazinone	Bensulfuron	960	Hexazinone	Trifloxysulfuron
961	Hexazinone	Trifloxysulfuron	991	Hexazinone	Pinoxaden
962	Hexazinone	Trifloxysulfuron	992	Hexazinone	Pinoxaden
963	Hexazinone	Trifloxysulfuron	993	Hexazinone	Pinoxaden

TABLE 1-continued

Photosystem II			Photosystem II		
S No.	inhibitor	Chlorophyll and Heme biosynthesis inhibitor	S No.	inhibitor	Chlorophyll and Heme biosynthesis inhibitor
964	Hexazinone	Trifloxysulfuron	994	Hexazinone	Pinoxaden
965	Hexazinone	Trifloxysulfuron	995	Hexazinone	Pyraflufen
966	Hexazinone	Trifloxysulfuron	996	Hexazinone	Pyraflufen
967	Hexazinone	Trifloxysulfuron	997	Hexazinone	Pyraflufen
968	Hexazinone	Metsulfuron	998	Hexazinone	Pyraflufen
969	Hexazinone	Metsulfuron	999	Hexazinone	Pyraflufen
970	Hexazinone	Metsulfuron	1000	Hexazinone	Pyraflufen
971	Hexazinone	Metsulfuron	1001	Hexazinone	Pyraflufen
972	Hexazinone	Metsulfuron	1002	Hexazinone	Pyraflufen
973	Hexazinone	Metsulfuron	1003	Hexazinone	Diclosulam
974	Hexazinone	Metsulfuron	1004	Hexazinone	Diclosulam
975	Hexazinone	Metsulfuron	1005	Hexazinone	Diclosulam
976	Hexazinone	Metsulfuron	1006	Hexazinone	Diclosulam
977	Hexazinone	Metazachlor	1007	Hexazinone	Diclosulam
978	Hexazinone	Metazachlor	1008	Hexazinone	Diclosulam
979	Hexazinone	Metazachlor	1009	Hexazinone	Diclosulam
980	Hexazinone	Metazachlor	1010	Hexazinone	Diclosulam
981	Hexazinone	Metazachlor	1011	Hexazinone	Diclosulam
982	Hexazinone	Metazachlor	1012	Hexazinone	Penoxsulam
983	Hexazinone	Metazachlor	1013	Hexazinone	Penoxsulam
984	Hexazinone	Metazachlor	1014	Hexazinone	Penoxsulam
985	Hexazinone	Metazachlor	1015	Hexazinone	Penoxsulam
986	Hexazinone	Pinoxaden	1016	Hexazinone	Penoxsulam
987	Hexazinone	Pinoxaden	1017	Hexazinone	Penoxsulam
988	Hexazinone	Pinoxaden	1018	Hexazinone	Penoxsulam
989	Hexazinone	Pinoxaden	1019	Hexazinone	Penoxsulam
990	Hexazinone	Pinoxaden	1020	Hexazinone	Penoxsulam
1021	Metamitron	Imazamox	1051	Metamitron	Imazethapyr
1022	Metamitron	Imazamox	1052	Metamitron	Imazethapyr
1023	Metamitron	Imazamox	1053	Metamitron	Imazethapyr
1024	Metamitron	Imazamox	1054	Metamitron	Imazethapyr
1025	Metamitron	Imazamox	1055	Metamitron	Imazethapyr
1026	Metamitron	Imazamox	1056	Metamitron	Imazethapyr
1027	Metamitron	Imazamox	1057	Metamitron	Carfentrazone
1028	Metamitron	Imazamox	1058	Metamitron	Carfentrazone
1029	Metamitron	Imazamox	1059	Metamitron	Carfentrazone
1030	Metamitron	Imazapic	1060	Metamitron	Carfentrazone
1031	Metamitron	Imazapic	1061	Metamitron	Carfentrazone
1032	Metamitron	Imazapic	1062	Metamitron	Carfentrazone
1033	Metamitron	Imazapic	1063	Metamitron	Carfentrazone
1034	Metamitron	Imazapic	1064	Metamitron	Carfentrazone
1035	Metamitron	Imazapic	1065	Metamitron	Carfentrazone
1036	Metamitron	Imazapic	1066	Metamitron	Flucarbazone
1037	Metamitron	Imazapic	1067	Metamitron	Flucarbazone
1038	Metamitron	Imazapic	1068	Metamitron	Flucarbazone
1039	Metamitron	Imazapyr	1069	Metamitron	Flucarbazone
1040	Metamitron	Imazapyr	1070	Metamitron	Flucarbazone
1041	Metamitron	Imazapyr	1071	Metamitron	Flucarbazone
1042	Metamitron	Imazapyr	1072	Metamitron	Flucarbazone
1043	Metamitron	Imazapyr	1073	Metamitron	Flucarbazone
1044	Metamitron	Imazapyr	1074	Metamitron	Flucarbazone
1045	Metamitron	Imazapyr	1075	Metamitron	Sulfentrazone
1046	Metamitron	Imazapyr	1076	Metamitron	Sulfentrazone
1047	Metamitron	Imazapyr	1077	Metamitron	Sulfentrazone
1048	Metamitron	Imazethapyr	1078	Metamitron	Sulfentrazone
1049	Metamitron	Imazethapyr	1079	Metamitron	Sulfentrazone
1050	Metamitron	Imazethapyr	1080	Metamitron	Sulfentrazone
1081	Metamitron	Sulfentrazone	1111	Metamitron	Pyrazosulfuron
1082	Metamitron	Sulfentrazone	1112	Metamitron	Pyrazosulfuron
1083	Metamitron	Sulfentrazone	1113	Metamitron	Pyrazosulfuron
1084	Metamitron	Flucarbazone-sodium	1114	Metamitron	Pyrazosulfuron
1085	Metamitron	Flucarbazone-sodium	1115	Metamitron	Pyrazosulfuron
1086	Metamitron	Flucarbazone-sodium	1116	Metamitron	Pyrazosulfuron
1087	Metamitron	Flucarbazone-sodium	1117	Metamitron	Pyrazosulfuron
1088	Metamitron	Flucarbazone-sodium	1118	Metamitron	Pyrazosulfuron
1089	Metamitron	Flucarbazone-sodium	1119	Metamitron	Pyrazosulfuron
1090	Metamitron	Flucarbazone-sodium	1120	Metamitron	Sulfosulfuron

TABLE 1-continued

Photosystem II			Photosystem II		
S No.	inhibitor	Chlorophyll and Heme biosynthesis inhibitor	S No.	inhibitor	Chlorophyll and Heme biosynthesis inhibitor
1091	Metamitron	Flucarbazone-sodium	1121	Metamitron	Sulfosulfuron
1092	Metamitron	Flucarbazone-sodium	1122	Metamitron	Sulfosulfuron
1093	Metamitron	Bensulfuron	1123	Metamitron	Sulfosulfuron
1094	Metamitron	Bensulfuron	1124	Metamitron	Sulfosulfuron
1095	Metamitron	Bensulfuron	1125	Metamitron	Sulfosulfuron
1096	Metamitron	Bensulfuron	1126	Metamitron	Sulfosulfuron
1097	Metamitron	Bensulfuron	1127	Metamitron	Sulfosulfuron
1098	Metamitron	Bensulfuron	1128	Metamitron	Sulfosulfuron
1099	Metamitron	Bensulfuron	1129	Metamitron	Trifloxysulfuron
1100	Metamitron	Bensulfuron	1130	Metamitron	Trifloxysulfuron
1101	Metamitron	Bensulfuron	1131	Metamitron	Trifloxysulfuron
1102	Metamitron	Bensulfuron	1132	Metamitron	Trifloxysulfuron
1103	Metamitron	Halosulfuron	1133	Metamitron	Trifloxysulfuron
1104	Metamitron	Halosulfuron	1134	Metamitron	Trifloxysulfuron
1105	Metamitron	Halosulfuron	1135	Metamitron	Trifloxysulfuron
1106	Metamitron	Halosulfuron	1136	Metamitron	Trifloxysulfuron
1107	Metamitron	Halosulfuron	1137	Metamitron	Trifloxysulfuron
1108	Metamitron	Halosulfuron	1138	Metamitron	Metsulfuron
1109	Metamitron	Halosulfuron	1139	Metamitron	Metsulfuron
1110	Metamitron	Halosulfuron	1140	Metamitron	Metsulfuron
1141	Metamitron	Metsulfuron	1171	Metamitron	Pyraflufen
1142	Metamitron	Metsulfuron	1172	Metamitron	Pyraflufen
1143	Metamitron	Metsulfuron	1173	Metamitron	Diclosulam
1144	Metamitron	Metsulfuron	1174	Metamitron	Diclosulam
1145	Metamitron	Metsulfuron	1175	Metamitron	Diclosulam
1146	Metamitron	Metsulfuron	1176	Metamitron	Diclosulam
1147	Metamitron	Metazachlor	1177	Metamitron	Diclosulam
1148	Metamitron	Metazachlor	1178	Metamitron	Diclosulam
1149	Metamitron	Metazachlor	1179	Metamitron	Diclosulam
1150	Metamitron	Metazachlor	1180	Metamitron	Diclosulam
1151	Metamitron	Metazachlor	1181	Metamitron	Diclosulam
1152	Metamitron	Metazachlor	1182	Metamitron	Penoxsulam
1153	Metamitron	Metazachlor	1183	Metamitron	Penoxsulam
1154	Metamitron	Metazachlor	1184	Metamitron	Penoxsulam
1155	Metamitron	Metazachlor	1185	Metamitron	Penoxsulam
1156	Metamitron	Pinoxaden	1186	Metamitron	Penoxsulam
1157	Metamitron	Pinoxaden	1187	Metamitron	Penoxsulam
1158	Metamitron	Pinoxaden	1188	Metamitron	Penoxsulam
1159	Metamitron	Pinoxaden	1189	Metamitron	Penoxsulam
1160	Metamitron	Pinoxaden	1190	Metamitron	Penoxsulam
1161	Metamitron	Pinoxaden	1191	Metribuzin	Imazamox
1162	Metamitron	Pinoxaden	1192	Metribuzin	Imazamox
1163	Metamitron	Pinoxaden	1193	Metribuzin	Imazamox
1164	Metamitron	Pinoxaden	1194	Metribuzin	Imazamox
1165	Metamitron	Pyraflufen	1195	Metribuzin	Imazamox
1166	Metamitron	Pyraflufen	1196	Metribuzin	Imazamox
1167	Metamitron	Pyraflufen	1197	Metribuzin	Imazamox
1168	Metamitron	Pyraflufen	1198	Metribuzin	Imazamox
1169	Metamitron	Pyraflufen	1199	Metribuzin	Imazamox
1170	Metamitron	Pyraflufen	1200	Metribuzin	Imazapic
1201	Metribuzin	Imazapic	1231	Metribuzin	Carfentrazone
1202	Metribuzin	Imazapic	1232	Metribuzin	Carfentrazone
1203	Metribuzin	Imazapic	1233	Metribuzin	Carfentrazone
1204	Metribuzin	Imazapic	1234	Metribuzin	Carfentrazone
1205	Metribuzin	Imazapic	1235	Metribuzin	Carfentrazone
1206	Metribuzin	Imazapic	1236	Metribuzin	Flucarbazone
1207	Metribuzin	Imazapic	1237	Metribuzin	Flucarbazone
1208	Metribuzin	Imazapic	1238	Metribuzin	Flucarbazone
1209	Metribuzin	Imazapyr	1239	Metribuzin	Flucarbazone
1210	Metribuzin	Imazapyr	1240	Metribuzin	Flucarbazone
1211	Metribuzin	Imazapyr	1241	Metribuzin	Flucarbazone
1212	Metribuzin	Imazapyr	1242	Metribuzin	Flucarbazone
1213	Metribuzin	Imazapyr	1243	Metribuzin	Flucarbazone
1214	Metribuzin	Imazapyr	1244	Metribuzin	Flucarbazone
1215	Metribuzin	Imazapyr	1245	Metribuzin	Sulfentrazone
1216	Metribuzin	Imazapyr	1246	Metribuzin	Sulfentrazone
1217	Metribuzin	Imazapyr	1247	Metribuzin	Sulfentrazone
1218	Metribuzin	Imazethapyr	1248	Metribuzin	Sulfentrazone
1219	Metribuzin	Imazethapyr	1249	Metribuzin	Sulfentrazone
1220	Metribuzin	Imazethapyr	1250	Metribuzin	Sulfentrazone
1221	Metribuzin	Imazethapyr	1251	Metribuzin	Sulfentrazone
1222	Metribuzin	Imazethapyr	1252	Metribuzin	Sulfentrazone
1223	Metribuzin	Imazethapyr	1253	Metribuzin	Sulfentrazone

TABLE 1-continued

Photosystem II S No. inhibitor	ALS inhibitor	Chlorophyll and Heme biosynthesis inhibitor	Photosystem II S No. inhibitor	ALS inhibitor	Chlorophyll and Heme biosynthesis inhibitor
1224 Metribuzin	Imazethapyr	Metazachlor	1254 Metribuzin	Flucarbazone- sodium	Carfentrazone
1225 Metribuzin	Imazethapyr	Pinoxaden	1255 Metribuzin	Flucarbazone- sodium	Flucarbazone
1226 Metribuzin	Imazethapyr	Pyraflufen	1256 Metribuzin	Flucarbazone- sodium	Sulfentrazone
1227 Metribuzin	Carfentrazone	Carfentrazone	1257 Metribuzin	Flucarbazone- sodium	Bromacil
1228 Metribuzin	Carfentrazone	Flucarbazone	1258 Metribuzin	Flucarbazone- sodium	Saflufenacil
1229 Metribuzin	Carfentrazone	Sulfentrazone	1259 Metribuzin	Flucarbazone- sodium	Flumioxazin
1230 Metribuzin	Carfentrazone	Bromacil	1260 Metribuzin	Flucarbazone- sodium	Metazachlor
1261 Metribuzin	Flucarbazone- sodium	Pinoxaden	1291 Metribuzin	Sulfosulfuron	Flucarbazone
1262 Metribuzin	Flucarbazone- sodium	Pyraflufen	1292 Metribuzin	Sulfosulfuron	Sulfentrazone
1263 Metribuzin	Bensulfuron	Carfentrazone	1293 Metribuzin	Sulfosulfuron	Bromacil
1264 Metribuzin	Bensulfuron	Flucarbazone	1294 Metribuzin	Sulfosulfuron	Saflufenacil
1265 Metribuzin	Bensulfuron	Sulfentrazone	1295 Metribuzin	Sulfosulfuron	Flumioxazin
1266 Metribuzin	Bensulfuron	Bromacil	1296 Metribuzin	Sulfosulfuron	Metazachlor
1267 Metribuzin	Bensulfuron	Saflufenacil	1297 Metribuzin	Sulfosulfuron	Pinoxaden
1268 Metribuzin	Bensulfuron	Flumioxazin	1298 Metribuzin	Sulfosulfuron	Pyraflufen
1269 Metribuzin	Bensulfuron	Metazachlor	1299 Metribuzin	Trifloxysulfuron	Carfentrazone
1270 Metribuzin	Bensulfuron	Pinoxaden	1300 Metribuzin	Trifloxysulfuron	Flucarbazone
1271 Metribuzin	Bensulfuron	Pyraflufen	1301 Metribuzin	Trifloxysulfuron	Sulfentrazone
1272 Metribuzin	Halosulfuron	Carfentrazone	1302 Metribuzin	Trifloxysulfuron	Bromacil
1273 Metribuzin	Halosulfuron	Flucarbazone	1303 Metribuzin	Trifloxysulfuron	Saflufenacil
1274 Metribuzin	Halosulfuron	Sulfentrazone	1304 Metribuzin	Trifloxysulfuron	Flumioxazin
1275 Metribuzin	Halosulfuron	Bromacil	1305 Metribuzin	Trifloxysulfuron	Metazachlor
1276 Metribuzin	Halosulfuron	Saflufenacil	1306 Metribuzin	Trifloxysulfuron	Pinoxaden
1277 Metribuzin	Halosulfuron	Flumioxazin	1307 Metribuzin	Trifloxysulfuron	Pyraflufen
1278 Metribuzin	Halosulfuron	Metazachlor	1308 Metribuzin	Metsulfuron	Carfentrazone
1279 Metribuzin	Halosulfuron	Pinoxaden	1309 Metribuzin	Metsulfuron	Flucarbazone
1280 Metribuzin	Halosulfuron	Pyraflufen	1310 Metribuzin	Metsulfuron	Sulfentrazone
1281 Metribuzin	Pyrazosulfuron	Carfentrazone	1311 Metribuzin	Metsulfuron	Bromacil
1282 Metribuzin	Pyrazosulfuron	Flucarbazone	1312 Metribuzin	Metsulfuron	Saflufenacil
1283 Metribuzin	Pyrazosulfuron	Sulfentrazone	1313 Metribuzin	Metsulfuron	Flumioxazin
1284 Metribuzin	Pyrazosulfuron	Bromacil	1314 Metribuzin	Metsulfuron	Metazachlor
1285 Metribuzin	Pyrazosulfuron	Saflufenacil	1315 Metribuzin	Metsulfuron	Pinoxaden
1286 Metribuzin	Pyrazosulfuron	Flumioxazin	1316 Metribuzin	Metsulfuron	Pyraflufen
1287 Metribuzin	Pyrazosulfuron	Metazachlor	1317 Metribuzin	Metazachlor	Carfentrazone
1288 Metribuzin	Pyrazosulfuron	Pinoxaden	1318 Metribuzin	Metazachlor	Flucarbazone
1289 Metribuzin	Pyrazosulfuron	Pyraflufen	1319 Metribuzin	Metazachlor	Sulfentrazone
1290 Metribuzin	Sulfosulfuron	Carfentrazone	1320 Metribuzin	Metazachlor	Bromacil
1321 Metribuzin	Metazachlor	Saflufenacil	1351 Metribuzin	Diclosulam	Pyraflufen
1322 Metribuzin	Metazachlor	Flumioxazin	1352 Metribuzin	Penoxsulam	Carfentrazone
1323 Metribuzin	Metazachlor	Metazachlor	1353 Metribuzin	Penoxsulam	Flucarbazone
1324 Metribuzin	Metazachlor	Pinoxaden	1354 Metribuzin	Penoxsulam	Sulfentrazone
1325 Metribuzin	Metazachlor	Pyraflufen	1355 Metribuzin	Penoxsulam	Bromacil
1326 Metribuzin	Pinoxaden	Carfentrazone	1356 Metribuzin	Penoxsulam	Saflufenacil
1327 Metribuzin	Pinoxaden	Flucarbazone	1357 Metribuzin	Penoxsulam	Flumioxazin
1328 Metribuzin	Pinoxaden	Sulfentrazone	1358 Metribuzin	Penoxsulam	Metazachlor
1329 Metribuzin	Pinoxaden	Bromacil	1359 Metribuzin	Penoxsulam	Pinoxaden
1330 Metribuzin	Pinoxaden	Saflufenacil	1360 Metribuzin	Penoxsulam	Pyraflufen
1331 Metribuzin	Pinoxaden	Flumioxazin	1361 Bromacil	Imazamox	Carfentrazone
1332 Metribuzin	Pinoxaden	Metazachlor	1362 Bromacil	Imazamox	Flucarbazone
1333 Metribuzin	Pinoxaden	Pinoxaden	1363 Bromacil	Imazamox	Sulfentrazone
1334 Metribuzin	Pinoxaden	Pyraflufen	1364 Bromacil	Imazamox	Bromacil
1335 Metribuzin	Pyraflufen	Carfentrazone	1365 Bromacil	Imazamox	Saflufenacil
1336 Metribuzin	Pyraflufen	Flucarbazone	1366 Bromacil	Imazamox	Flumioxazin
1337 Metribuzin	Pyraflufen	Sulfentrazone	1367 Bromacil	Imazamox	Metazachlor
1338 Metribuzin	Pyraflufen	Bromacil	1368 Bromacil	Imazamox	Pinoxaden
1339 Metribuzin	Pyraflufen	Saflufenacil	1369 Bromacil	Imazamox	Pyraflufen
1340 Metribuzin	Pyraflufen	Flumioxazin	1370 Bromacil	Imazapic	Carfentrazone
1341 Metribuzin	Pyraflufen	Metazachlor	1371 Bromacil	Imazapic	Flucarbazone
1342 Metribuzin	Pyraflufen	Pinoxaden	1372 Bromacil	Imazapic	Sulfentrazone
1343 Metribuzin	Diclosulam	Carfentrazone	1373 Bromacil	Imazapic	Bromacil
1344 Metribuzin	Diclosulam	Flucarbazone	1374 Bromacil	Imazapic	Saflufenacil
1345 Metribuzin	Diclosulam	Sulfentrazone	1375 Bromacil	Imazapic	Flumioxazin
1346 Metribuzin	Diclosulam	Bromacil	1376 Bromacil	Imazapic	Metazachlor
1347 Metribuzin	Diclosulam	Saflufenacil	1377 Bromacil	Imazapic	Pinoxaden
1348 Metribuzin	Diclosulam	Flumioxazin	1378 Bromacil	Imazapic	Pyraflufen
1349 Metribuzin	Diclosulam	Metazachlor	1379 Bromacil	Imazapyr	Carfentrazone

TABLE 1-continued

Photosystem II			Photosystem II		
S No.	inhibitor	Chlorophyll and Heme biosynthesis inhibitor	S No.	inhibitor	Chlorophyll and Heme biosynthesis inhibitor
1350	Metribuzin	Diclosulam	1380	Bromacil	Imazapyr
1381	Bromacil	Sulfentrazone	1411	Bromacil	Flucarbazone
1382	Bromacil	Bromacil	1412	Bromacil	Flucarbazone
1383	Bromacil	Saflufenacil	1413	Bromacil	Flucarbazone
1384	Bromacil	Flumioxazin	1414	Bromacil	Flucarbazone
1385	Bromacil	Metazachlor	1415	Bromacil	Sulfentrazone
1386	Bromacil	Pinoxaden	1416	Bromacil	Sulfentrazone
1387	Bromacil	Pyraflufen	1417	Bromacil	Sulfentrazone
1388	Bromacil	Carfentrazone	1418	Bromacil	Sulfentrazone
1389	Bromacil	Flucarbazone	1419	Bromacil	Sulfentrazone
1390	Bromacil	Sulfentrazone	1420	Bromacil	Sulfentrazone
1391	Bromacil	Bromacil	1421	Bromacil	Sulfentrazone
1392	Bromacil	Saflufenacil	1422	Bromacil	Sulfentrazone
1393	Bromacil	Flumioxazin	1423	Bromacil	Sulfentrazone
1394	Bromacil	Metazachlor	1424	Bromacil	Flucarbazone-sodium
1395	Bromacil	Imazethapyr	1425	Bromacil	Flucarbazone-sodium
1396	Bromacil	Imazethapyr	1426	Bromacil	Flucarbazone-sodium
1397	Bromacil	Carfentrazone	1427	Bromacil	Flucarbazone-sodium
1398	Bromacil	Carfentrazone	1428	Bromacil	Flucarbazone-sodium
1399	Bromacil	Carfentrazone	1429	Bromacil	Flucarbazone-sodium
1400	Bromacil	Carfentrazone	1430	Bromacil	Flucarbazone-sodium
1401	Bromacil	Carfentrazone	1431	Bromacil	Flucarbazone-sodium
1402	Bromacil	Carfentrazone	1432	Bromacil	Flucarbazone-sodium
1403	Bromacil	Carfentrazone	1433	Bromacil	Bensulfuron
1404	Bromacil	Carfentrazone	1434	Bromacil	Bensulfuron
1405	Bromacil	Carfentrazone	1435	Bromacil	Bensulfuron
1406	Bromacil	Flucarbazone	1436	Bromacil	Bensulfuron
1407	Bromacil	Flucarbazone	1437	Bromacil	Bensulfuron
1408	Bromacil	Flucarbazone	1438	Bromacil	Bensulfuron
1409	Bromacil	Flucarbazone	1439	Bromacil	Bensulfuron
1410	Bromacil	Flucarbazone	1440	Bromacil	Bensulfuron
1441	Bromacil	Bensulfuron	1471	Bromacil	Trifloxysulfuron
1442	Bromacil	Halosulfuron	1472	Bromacil	Trifloxysulfuron
1443	Bromacil	Halosulfuron	1473	Bromacil	Trifloxysulfuron
1444	Bromacil	Halosulfuron	1474	Bromacil	Trifloxysulfuron
1445	Bromacil	Halosulfuron	1475	Bromacil	Trifloxysulfuron
1446	Bromacil	Halosulfuron	1476	Bromacil	Trifloxysulfuron
1447	Bromacil	Halosulfuron	1477	Bromacil	Trifloxysulfuron
1448	Bromacil	Halosulfuron	1478	Bromacil	Metsulfuron
1449	Bromacil	Halosulfuron	1479	Bromacil	Metsulfuron
1450	Bromacil	Halosulfuron	1480	Bromacil	Metsulfuron
1451	Bromacil	Pyrazosulfuron	1481	Bromacil	Metsulfuron
1452	Bromacil	Pyrazosulfuron	1482	Bromacil	Metsulfuron
1453	Bromacil	Pyrazosulfuron	1483	Bromacil	Metsulfuron
1454	Bromacil	Pyrazosulfuron	1484	Bromacil	Metsulfuron
1455	Bromacil	Pyrazosulfuron	1485	Bromacil	Metsulfuron
1456	Bromacil	Pyrazosulfuron	1486	Bromacil	Metsulfuron
1457	Bromacil	Pyrazosulfuron	1487	Bromacil	Metazachlor
1458	Bromacil	Pyrazosulfuron	1488	Bromacil	Metazachlor
1459	Bromacil	Pyrazosulfuron	1489	Bromacil	Metazachlor
1460	Bromacil	Sulfosulfuron	1490	Bromacil	Metazachlor
1461	Bromacil	Sulfosulfuron	1491	Bromacil	Metazachlor
1462	Bromacil	Sulfosulfuron	1492	Bromacil	Metazachlor
1463	Bromacil	Sulfosulfuron	1493	Bromacil	Metazachlor
1464	Bromacil	Sulfosulfuron	1494	Bromacil	Metazachlor
1465	Bromacil	Sulfosulfuron	1495	Bromacil	Metazachlor
1466	Bromacil	Sulfosulfuron	1496	Bromacil	Pinoxaden
1467	Bromacil	Sulfosulfuron	1497	Bromacil	Pinoxaden
1468	Bromacil	Sulfosulfuron	1498	Bromacil	Pinoxaden
1469	Bromacil	Trifloxysulfuron	1499	Bromacil	Pinoxaden
1470	Bromacil	Trifloxysulfuron	1500	Bromacil	Pinoxaden
1501	Bromacil	Pinoxaden	1531	Saflufenacil	Imazamox
1502	Bromacil	Pinoxaden	1532	Saflufenacil	Imazamox
1503	Bromacil	Pinoxaden	1533	Saflufenacil	Imazamox
1504	Bromacil	Pinoxaden	1534	Saflufenacil	Imazamox
1505	Bromacil	Pyraflufen	1535	Saflufenacil	Imazamox

TABLE 1-continued

Photosystem II			Photosystem II		
S No.	inhibitor	Chlorophyll and Heme biosynthesis inhibitor	S No.	inhibitor	Chlorophyll and Heme biosynthesis inhibitor
1506	Bromacil	Pyraflufen	1536	Saflufenacil	Imazamox
1507	Bromacil	Pyraflufen	1537	Saflufenacil	Imazamox
1508	Bromacil	Pyraflufen	1538	Saflufenacil	Imazamox
1509	Bromacil	Pyraflufen	1539	Saflufenacil	Imazamox
1510	Bromacil	Pyraflufen	1540	Saflufenacil	Imazapic
1511	Bromacil	Pyraflufen	1541	Saflufenacil	Imazapic
1512	Bromacil	Pyraflufen	1542	Saflufenacil	Imazapic
1513	Bromacil	Diclosulam	1543	Saflufenacil	Imazapic
1514	Bromacil	Diclosulam	1544	Saflufenacil	Imazapic
1515	Bromacil	Diclosulam	1545	Saflufenacil	Imazapic
1516	Bromacil	Diclosulam	1546	Saflufenacil	Imazapic
1517	Bromacil	Diclosulam	1547	Saflufenacil	Imazapic
1518	Bromacil	Diclosulam	1548	Saflufenacil	Imazapic
1519	Bromacil	Diclosulam	1549	Saflufenacil	Imazapyr
1520	Bromacil	Diclosulam	1550	Saflufenacil	Imazapyr
1521	Bromacil	Diclosulam	1551	Saflufenacil	Imazapyr
1522	Bromacil	Diclosulam	1552	Saflufenacil	Imazapyr
1523	Bromacil	Diclosulam	1553	Saflufenacil	Imazapyr
1524	Bromacil	Diclosulam	1554	Saflufenacil	Imazapyr
1525	Bromacil	Diclosulam	1555	Saflufenacil	Imazapyr
1526	Bromacil	Diclosulam	1556	Saflufenacil	Imazapyr
1527	Bromacil	Diclosulam	1557	Saflufenacil	Imazapyr
1528	Bromacil	Diclosulam	1558	Saflufenacil	Imazethapyr
1529	Bromacil	Diclosulam	1559	Saflufenacil	Imazethapyr
1530	Bromacil	Diclosulam	1560	Saflufenacil	Imazethapyr
1561	Saflufenacil	Imazethapyr	1591	Saflufenacil	Sulfentrazone
1562	Saflufenacil	Imazethapyr	1592	Saflufenacil	Sulfentrazone
1563	Saflufenacil	Imazethapyr	1593	Saflufenacil	Sulfentrazone
1564	Saflufenacil	Imazethapyr	1594	Saflufenacil	Flucarbazone-sodium
1565	Saflufenacil	Imazethapyr	1595	Saflufenacil	Flucarbazone-sodium
1566	Saflufenacil	Imazethapyr	1596	Saflufenacil	Flucarbazone-sodium
1567	Saflufenacil	Carfentrazone	1597	Saflufenacil	Flucarbazone-sodium
1568	Saflufenacil	Carfentrazone	1598	Saflufenacil	Flucarbazone-sodium
1569	Saflufenacil	Carfentrazone	1599	Saflufenacil	Flucarbazone-sodium
1570	Saflufenacil	Carfentrazone	1600	Saflufenacil	Flucarbazone-sodium
1571	Saflufenacil	Carfentrazone	1601	Saflufenacil	Flucarbazone-sodium
1572	Saflufenacil	Carfentrazone	1602	Saflufenacil	Flucarbazone-sodium
1573	Saflufenacil	Carfentrazone	1603	Saflufenacil	Bensulfuron
1574	Saflufenacil	Carfentrazone	1604	Saflufenacil	Bensulfuron
1575	Saflufenacil	Carfentrazone	1605	Saflufenacil	Bensulfuron
1576	Saflufenacil	Carfentrazone	1606	Saflufenacil	Bensulfuron
1577	Saflufenacil	Carfentrazone	1607	Saflufenacil	Bensulfuron
1578	Saflufenacil	Carfentrazone	1608	Saflufenacil	Bensulfuron
1579	Saflufenacil	Carfentrazone	1609	Saflufenacil	Bensulfuron
1580	Saflufenacil	Carfentrazone	1610	Saflufenacil	Bensulfuron
1581	Saflufenacil	Carfentrazone	1611	Saflufenacil	Bensulfuron
1582	Saflufenacil	Carfentrazone	1612	Saflufenacil	Bensulfuron
1583	Saflufenacil	Carfentrazone	1613	Saflufenacil	Bensulfuron
1584	Saflufenacil	Carfentrazone	1614	Saflufenacil	Bensulfuron
1585	Saflufenacil	Carfentrazone	1615	Saflufenacil	Bensulfuron
1586	Saflufenacil	Carfentrazone	1616	Saflufenacil	Bensulfuron
1587	Saflufenacil	Carfentrazone	1617	Saflufenacil	Bensulfuron
1588	Saflufenacil	Carfentrazone	1618	Saflufenacil	Bensulfuron
1589	Saflufenacil	Carfentrazone	1619	Saflufenacil	Bensulfuron
1590	Saflufenacil	Carfentrazone	1620	Saflufenacil	Bensulfuron
1621	Saflufenacil	Carfentrazone	1651	Saflufenacil	Metsulfuron
1622	Saflufenacil	Carfentrazone	1652	Saflufenacil	Metsulfuron
1623	Saflufenacil	Carfentrazone	1653	Saflufenacil	Metsulfuron
1624	Saflufenacil	Carfentrazone	1654	Saflufenacil	Metsulfuron
1625	Saflufenacil	Carfentrazone	1655	Saflufenacil	Metsulfuron
1626	Saflufenacil	Carfentrazone	1656	Saflufenacil	Metsulfuron
1627	Saflufenacil	Carfentrazone	1657	Saflufenacil	Metsulfuron
1628	Saflufenacil	Carfentrazone	1658	Saflufenacil	Metsulfuron
1629	Saflufenacil	Carfentrazone	1659	Saflufenacil	Metsulfuron
1630	Saflufenacil	Carfentrazone	1660	Saflufenacil	Metsulfuron
1631	Saflufenacil	Carfentrazone	1661	Saflufenacil	Metsulfuron

TABLE 1-continued

Photosystem II			Photosystem II		
S No.	inhibitor	Chlorophyll and Heme biosynthesis inhibitor	S No.	inhibitor	Chlorophyll and Heme biosynthesis inhibitor
1632	Saflufenacil	Sulfosulfuron	1662	Saflufenacil	Metazachlor
1633	Saflufenacil	Sulfosulfuron	1663	Saflufenacil	Metazachlor
1634	Saflufenacil	Sulfosulfuron	1664	Saflufenacil	Metazachlor
1635	Saflufenacil	Sulfosulfuron	1665	Saflufenacil	Metazachlor
1636	Saflufenacil	Sulfosulfuron	1666	Saflufenacil	Pinoxaden
1637	Saflufenacil	Sulfosulfuron	1667	Saflufenacil	Pinoxaden
1638	Saflufenacil	Sulfosulfuron	1668	Saflufenacil	Pinoxaden
1639	Saflufenacil	Trifloxysulfuron	1669	Saflufenacil	Pinoxaden
1640	Saflufenacil	Trifloxysulfuron	1670	Saflufenacil	Pinoxaden
1641	Saflufenacil	Trifloxysulfuron	1671	Saflufenacil	Pinoxaden
1642	Saflufenacil	Trifloxysulfuron	1672	Saflufenacil	Pinoxaden
1643	Saflufenacil	Trifloxysulfuron	1673	Saflufenacil	Pinoxaden
1644	Saflufenacil	Trifloxysulfuron	1674	Saflufenacil	Pinoxaden
1645	Saflufenacil	Trifloxysulfuron	1675	Saflufenacil	Pinoxaden
1646	Saflufenacil	Trifloxysulfuron	1676	Saflufenacil	Pinoxaden
1647	Saflufenacil	Trifloxysulfuron	1677	Saflufenacil	Pinoxaden
1648	Saflufenacil	Metsulfuron	1678	Saflufenacil	Pinoxaden
1649	Saflufenacil	Metsulfuron	1679	Saflufenacil	Pinoxaden
1650	Saflufenacil	Metsulfuron	1680	Saflufenacil	Pinoxaden
1681	Saflufenacil	Pyraflufen	1711	Bentazone	Imazapic
1682	Saflufenacil	Pyraflufen	1712	Bentazone	Imazapic
1683	Saflufenacil	Diclosulam	1713	Bentazone	Imazapic
1684	Saflufenacil	Diclosulam	1714	Bentazone	Imazapic
1685	Saflufenacil	Diclosulam	1715	Bentazone	Imazapic
1686	Saflufenacil	Diclosulam	1716	Bentazone	Imazapic
1687	Saflufenacil	Diclosulam	1717	Bentazone	Imazapic
1688	Saflufenacil	Diclosulam	1718	Bentazone	Imazapic
1689	Saflufenacil	Diclosulam	1719	Bentazone	Imazapic
1690	Saflufenacil	Diclosulam	1720	Bentazone	Imazapic
1691	Saflufenacil	Diclosulam	1721	Bentazone	Imazapic
1692	Saflufenacil	Penoxsulam	1722	Bentazone	Imazapic
1693	Saflufenacil	Penoxsulam	1723	Bentazone	Imazapic
1694	Saflufenacil	Penoxsulam	1724	Bentazone	Imazapic
1695	Saflufenacil	Penoxsulam	1725	Bentazone	Imazapic
1696	Saflufenacil	Penoxsulam	1726	Bentazone	Imazapic
1697	Saflufenacil	Penoxsulam	1727	Bentazone	Imazapic
1698	Saflufenacil	Penoxsulam	1728	Bentazone	Imazapic
1699	Saflufenacil	Penoxsulam	1729	Bentazone	Imazapic
1700	Saflufenacil	Penoxsulam	1730	Bentazone	Imazapic
1701	Bentazone	Imazamox	1731	Bentazone	Imazapic
1702	Bentazone	Imazamox	1732	Bentazone	Imazapic
1703	Bentazone	Imazamox	1733	Bentazone	Imazapic
1704	Bentazone	Imazamox	1734	Bentazone	Imazapic
1705	Bentazone	Imazamox	1735	Bentazone	Imazapic
1706	Bentazone	Imazamox	1736	Bentazone	Imazapic
1707	Bentazone	Imazamox	1737	Bentazone	Imazapic
1708	Bentazone	Imazamox	1738	Bentazone	Imazapic
1709	Bentazone	Imazamox	1739	Bentazone	Imazapic
1710	Bentazone	Imazapic	1740	Bentazone	Imazapic
1741	Bentazone	Carfentrazone	1771	Bentazone	Imazapic
1742	Bentazone	Carfentrazone	1772	Bentazone	Imazapic
1743	Bentazone	Carfentrazone	1773	Bentazone	Imazapic
1744	Bentazone	Carfentrazone	1774	Bentazone	Imazapic
1745	Bentazone	Carfentrazone	1775	Bentazone	Imazapic
1746	Bentazone	Flucarbazone	1776	Bentazone	Imazapic
1747	Bentazone	Flucarbazone	1777	Bentazone	Imazapic
1748	Bentazone	Flucarbazone	1778	Bentazone	Imazapic
1749	Bentazone	Flucarbazone	1779	Bentazone	Imazapic
1750	Bentazone	Flucarbazone	1780	Bentazone	Imazapic
1751	Bentazone	Flucarbazone	1781	Bentazone	Imazapic
1752	Bentazone	Flucarbazone	1782	Bentazone	Imazapic
1753	Bentazone	Flucarbazone	1783	Bentazone	Imazapic
1754	Bentazone	Flucarbazone	1784	Bentazone	Imazapic
1755	Bentazone	Flucarbazone	1785	Bentazone	Imazapic
1756	Bentazone	Flucarbazone	1786	Bentazone	Imazapic
1757	Bentazone	Flucarbazone	1787	Bentazone	Imazapic
1758	Bentazone	Flucarbazone	1788	Bentazone	Imazapic
1759	Bentazone	Flucarbazone	1789	Bentazone	Imazapic
1760	Bentazone	Flucarbazone	1790	Bentazone	Imazapic
1761	Bentazone	Flucarbazone	1791	Bentazone	Imazapic
1762	Bentazone	Flucarbazone	1792	Bentazone	Imazapic
1763	Bentazone	Flucarbazone	1793	Bentazone	Imazapic

TABLE 1-continued

Photosystem II S No. inhibitor	ALS inhibitor	Chlorophyll and Heme biosynthesis inhibitor	Photosystem II S No. inhibitor	ALS inhibitor	Chlorophyll and Heme biosynthesis inhibitor
1764 Bentazone	Flucarbazon- sodium	Carfentrazone	1794 Bentazone	Pyrazosulfuron	Bromacil
1765 Bentazone	Flucarbazon- sodium	Flucarbazon	1795 Bentazone	Pyrazosulfuron	Saflufenacil
1766 Bentazone	Flucarbazon- sodium	Sulfentrazone	1796 Bentazone	Pyrazosulfuron	Flumioxazin
1767 Bentazone	Flucarbazon- sodium	Bromacil	1797 Bentazone	Pyrazosulfuron	Metazachlor
1768 Bentazone	Flucarbazon- sodium	Saflufenacil	1798 Bentazone	Pyrazosulfuron	Pinoxaden
1769 Bentazone	Flucarbazon- sodium	Flumioxazin	1799 Bentazone	Pyrazosulfuron	Pyraflufen
1770 Bentazone	Flucarbazon- sodium	Metazachlor	1800 Bentazone	Sulfosulfuron	Carfentrazone
1801 Bentazone	Sulfosulfuron	Flucarbazon	1831 Bentazone	Metazachlor	Saflufenacil
1802 Bentazone	Sulfosulfuron	Sulfentrazone	1832 Bentazone	Metazachlor	Flumioxazin
1803 Bentazone	Sulfosulfuron	Bromacil	1833 Bentazone	Metazachlor	Metazachlor
1804 Bentazone	Sulfosulfuron	Saflufenacil	1834 Bentazone	Metazachlor	Pinoxaden
1805 Bentazone	Sulfosulfuron	Flumioxazin	1835 Bentazone	Metazachlor	Pyraflufen
1806 Bentazone	Sulfosulfuron	Metazachlor	1836 Bentazone	Pinoxaden	Carfentrazone
1807 Bentazone	Sulfosulfuron	Pinoxaden	1837 Bentazone	Pinoxaden	Flucarbazon
1808 Bentazone	Sulfosulfuron	Pyraflufen	1838 Bentazone	Pinoxaden	Sulfentrazone
1809 Bentazone	Trifloxysulfuron	Carfentrazone	1839 Bentazone	Pinoxaden	Bromacil
1810 Bentazone	Trifloxysulfuron	Flucarbazon	1840 Bentazone	Pinoxaden	Saflufenacil
1811 Bentazone	Trifloxysulfuron	Sulfentrazone	1841 Bentazone	Pinoxaden	Flumioxazin
1812 Bentazone	Trifloxysulfuron	Bromacil	1842 Bentazone	Pinoxaden	Metazachlor
1813 Bentazone	Trifloxysulfuron	Saflufenacil	1843 Bentazone	Pinoxaden	Pinoxaden
1814 Bentazone	Trifloxysulfuron	Flumioxazin	1844 Bentazone	Pinoxaden	Pyraflufen
1815 Bentazone	Trifloxysulfuron	Metazachlor	1845 Bentazone	Pyraflufen	Carfentrazone
1816 Bentazone	Trifloxysulfuron	Pinoxaden	1846 Bentazone	Pyraflufen	Flucarbazon
1817 Bentazone	Trifloxysulfuron	Pyraflufen	1847 Bentazone	Pyraflufen	Sulfentrazone
1818 Bentazone	Metsulfuron	Carfentrazone	1848 Bentazone	Pyraflufen	Bromacil
1819 Bentazone	Metsulfuron	Flucarbazon	1849 Bentazone	Pyraflufen	Saflufenacil
1820 Bentazone	Metsulfuron	Sulfentrazone	1850 Bentazone	Pyraflufen	Flumioxazin
1821 Bentazone	Metsulfuron	Bromacil	1851 Bentazone	Pyraflufen	Metazachlor
1822 Bentazone	Metsulfuron	Saflufenacil	1852 Bentazone	Pyraflufen	Pinoxaden
1823 Bentazone	Metsulfuron	Flumioxazin	1853 Bentazone	Diclosulam	Carfentrazone
1824 Bentazone	Metsulfuron	Metazachlor	1854 Bentazone	Diclosulam	Flucarbazon
1825 Bentazone	Metsulfuron	Pinoxaden	1855 Bentazone	Diclosulam	Sulfentrazone
1826 Bentazone	Metsulfuron	Pyraflufen	1856 Bentazone	Diclosulam	Bromacil
1827 Bentazone	Metazachlor	Carfentrazone	1857 Bentazone	Diclosulam	Saflufenacil
1828 Bentazone	Metazachlor	Flucarbazon	1858 Bentazone	Diclosulam	Flumioxazin
1829 Bentazone	Metazachlor	Sulfentrazone	1859 Bentazone	Diclosulam	Metazachlor
1830 Bentazone	Metazachlor	Bromacil	1860 Bentazone	Diclosulam	Pinoxaden
1861 Bentazone	Diclosulam	Pyraflufen	1891 Bentazone- sodium	Imazapyr	Sulfentrazone
1862 Bentazone	Penoxsulam	Carfentrazone	1892 Bentazone- sodium	Imazapyr	Bromacil
1863 Bentazone	Penoxsulam	Flucarbazon	1893 Bentazone- sodium	Imazapyr	Saflufenacil
1864 Bentazone	Penoxsulam	Sulfentrazone	1894 Bentazone- sodium	Imazapyr	Flumioxazin
1865 Bentazone	Penoxsulam	Bromacil	1895 Bentazone- sodium	Imazapyr	Metazachlor
1866 Bentazone	Penoxsulam	Saflufenacil	1896 Bentazone- sodium	Imazapyr	Pinoxaden
1867 Bentazone	Penoxsulam	Flumioxazin	1897 Bentazone- sodium	Imazapyr	Pyraflufen
1868 Bentazone	Penoxsulam	Metazachlor	1898 Bentazone- sodium	Imazethapyr	Carfentrazone
1869 Bentazone	Penoxsulam	Pinoxaden	1899 Bentazone- sodium	Imazethapyr	Flucarbazon
1870 Bentazone	Penoxsulam	Pyraflufen	1900 Bentazone- sodium	Imazethapyr	Sulfentrazone
1871 Bentazone- sodium	Imazamox	Carfentrazone	1901 Bentazone- sodium	Imazethapyr	Bromacil
1872 Bentazone- sodium	Imazamox	Flucarbazon	1902 Bentazone- sodium	Imazethapyr	Saflufenacil
1873 Bentazone- sodium	Imazamox	Sulfentrazone	1903 Bentazone- sodium	Imazethapyr	Flumioxazin
1874 Bentazone- sodium	Imazamox	Bromacil	1904 Bentazone- sodium	Imazethapyr	Metazachlor
1875 Bentazone- sodium	Imazamox	Saflufenacil	1905 Bentazone- sodium	Imazethapyr	Pinoxaden

TABLE 1-continued

S No.	Photosystem II inhibitor	ALS inhibitor	Chlorophyll and Heme biosynthesis inhibitor	S No.	Photosystem II inhibitor	ALS inhibitor	Chlorophyll and Heme biosynthesis inhibitor
1876	Bentazone- sodium	Imazamox	Flumioxazin	1906	Bentazone- sodium	Imazethapyr	Pyraflufen
1877	Bentazone- sodium	Imazamox	Metazachlor	1907	Bentazone- sodium	Carfentrazone	Carfentrazone
1878	Bentazone- sodium	Imazamox	Pinoxaden	1908	Bentazone- sodium	Carfentrazone	Flucarbazon
1879	Bentazone- sodium	Imazamox	Pyraflufen	1909	Bentazone- sodium	Carfentrazone	Sulfentrazone
1880	Bentazone- sodium	Imazapic	Carfentrazone	1910	Bentazone- sodium	Carfentrazone	Bromacil
1881	Bentazone- sodium	Imazapic	Flucarbazon	1911	Bentazone- sodium	Carfentrazone	Saflufenacil
1882	Bentazone- sodium	Imazapic	Sulfentrazone	1912	Bentazone- sodium	Carfentrazone	Flumioxazin
1883	Bentazone- sodium	Imazapic	Bromacil	1913	Bentazone- sodium	Carfentrazone	Metazachlor
1884	Bentazone- sodium	Imazapic	Saflufenacil	1914	Bentazone- sodium	Carfentrazone	Pinoxaden
1885	Bentazone- sodium	Imazapic	Flumioxazin	1915	Bentazone- sodium	Carfentrazone	Pyraflufen
1886	Bentazone- sodium	Imazapic	Metazachlor	1916	Bentazone- sodium	Flucarbazon	Carfentrazone
1887	Bentazone- sodium	Imazapic	Pinoxaden	1917	Bentazone- sodium	Flucarbazon	Flucarbazon
1888	Bentazone- sodium	Imazapic	Pyraflufen	1918	Bentazone- sodium	Flucarbazon	Sulfentrazone
1889	Bentazone- sodium	Imazapyr	Carfentrazone	1919	Bentazone- sodium	Flucarbazon	Bromacil
1890	Bentazone- sodium	Imazapyr	Flucarbazon	1920	Bentazone- sodium	Flucarbazon	Saflufenacil
1921	Bentazone- sodium	Flucarbazon	Flumioxazin	1951	Bentazone- sodium	Bensulfuron	Pyraflufen
1922	Bentazone- sodium	Flucarbazon	Metazachlor	1952	Bentazone- sodium	Halosulfuron	Carfentrazone
1923	Bentazone- sodium	Flucarbazon	Pinoxaden	1953	Bentazone- sodium	Halosulfuron	Flucarbazon
1924	Bentazone- sodium	Flucarbazon	Pyraflufen	1954	Bentazone- sodium	Halosulfuron	Sulfentrazone
1925	Bentazone- sodium	Sulfentrazone	Carfentrazone	1955	Bentazone- sodium	Halosulfuron	Bromacil
1926	Bentazone- sodium	Sulfentrazone	Flucarbazon	1956	Bentazone- sodium	Halosulfuron	Saflufenacil
1927	Bentazone- sodium	Sulfentrazone	Amicarbazone	1957	Bentazone- sodium	Halosulfuron	Flumioxazin
1928	Bentazone- sodium	Sulfentrazone	Bromacil	1958	Bentazone- sodium	Halosulfuron	Metazachlor
1929	Bentazone- sodium	Sulfentrazone	Saflufenacil	1959	Bentazone- sodium	Halosulfuron	Pinoxaden
1930	Bentazone- sodium	Sulfentrazone	Flumioxazin	1960	Bentazone- sodium	Halosulfuron	Pyraflufen
1931	Bentazone- sodium	Sulfentrazone	Metazachlor	1961	Bentazone- sodium	Pyrazosulfuron	Carfentrazone
1932	Bentazone- sodium	Sulfentrazone	Pinoxaden	1962	Bentazone- sodium	Pyrazosulfuron	Flucarbazon
1933	Bentazone- sodium	Sulfentrazone	Pyraflufen	1963	Bentazone- sodium	Pyrazosulfuron	Sulfentrazone
1934	Bentazone- sodium	Flucarbazon- sodium	Carfentrazone	1964	Bentazone- sodium	Pyrazosulfuron	Bromacil
1935	Bentazone- sodium	Flucarbazon- sodium	Flucarbazon	1965	Bentazone- sodium	Pyrazosulfuron	Saflufenacil
1936	Bentazone- sodium	Flucarbazon- sodium	Sulfentrazone	1966	Bentazone- sodium	Pyrazosulfuron	Flumioxazin
1937	Bentazone- sodium	Flucarbazon- sodium	Bromacil	1967	Bentazone- sodium	Pyrazosulfuron	Metazachlor
1938	Bentazone- sodium	Flucarbazon- sodium	Saflufenacil	1968	Bentazone- sodium	Pyrazosulfuron	Pinoxaden
1939	Bentazone- sodium	Flucarbazon- sodium	Flumioxazin	1969	Bentazone- sodium	Pyrazosulfuron	Pyraflufen
1940	Bentazone- sodium	Flucarbazon- sodium	Metazachlor	1970	Bentazone- sodium	Sulfosulfuron	Carfentrazone
1941	Bentazone- sodium	Flucarbazon- sodium	Pinoxaden	1971	Bentazone- sodium	Sulfosulfuron	Flucarbazon
1942	Bentazone- sodium	Flucarbazon- sodium	Pyraflufen	1972	Bentazone- sodium	Sulfosulfuron	Sulfentrazone

TABLE 1-continued

S No.	Photosystem II inhibitor	ALS inhibitor	Chlorophyll and Heme biosynthesis inhibitor	S No.	Photosystem II inhibitor	ALS inhibitor	Chlorophyll and Heme biosynthesis inhibitor
1943	Bentazone-sodium	Bensulfuron	Carfentrazone	1973	Bentazone-sodium	Sulfosulfuron	Bromacil
1944	Bentazone-sodium	Bensulfuron	Flucarbazone	1974	Bentazone-sodium	Sulfosulfuron	Saflufenacil
1945	Bentazone-sodium	Bensulfuron	Sulfentrazone	1975	Bentazone-sodium	Sulfosulfuron	Flumioxazin
1946	Bentazone-sodium	Bensulfuron	Bromacil	1976	Bentazone-sodium	Sulfosulfuron	Metazachlor
1947	Bentazone-sodium	Bensulfuron	Saflufenacil	1977	Bentazone-sodium	Sulfosulfuron	Pinoxaden
1948	Bentazone-sodium	Bensulfuron	Flumioxazin	1978	Bentazone-sodium	Sulfosulfuron	Pyraflufen
1949	Bentazone-sodium	Bensulfuron	Metazachlor	1979	Bentazone-sodium	Trifloxysulfuron	Carfentrazone
1950	Bentazone-sodium	Bensulfuron	Pinoxaden	1980	Bentazone-sodium	Trifloxysulfuron	Flucarbazone
1981	Bentazone-sodium	Trifloxysulfuron	Sulfentrazone	2011	Bentazone-sodium	Pinoxaden	Flumioxazin
1982	Bentazone-sodium	Trifloxysulfuron	Bromacil	2012	Bentazone-sodium	Pinoxaden	Metazachlor
1983	Bentazone-sodium	Trifloxysulfuron	Saflufenacil	2013	Bentazone-sodium	Pinoxaden	Pinoxaden
1984	Bentazone-sodium	Trifloxysulfuron	Flumioxazin	2014	Bentazone-sodium	Pinoxaden	Pyraflufen
1985	Bentazone-sodium	Trifloxysulfuron	Metazachlor	2015	Bentazone-sodium	Pyraflufen	Carfentrazone
1986	Bentazone-sodium	Trifloxysulfuron	Pinoxaden	2016	Bentazone-sodium	Pyraflufen	Flucarbazone
1987	Bentazone-sodium	Trifloxysulfuron	Pyraflufen	2017	Bentazone-sodium	Pyraflufen	Sulfentrazone
1988	Bentazone-sodium	Metsulfuron	Carfentrazone	2018	Bentazone-sodium	Pyraflufen	Bromacil
1989	Bentazone-sodium	Metsulfuron	Flucarbazone	2019	Bentazone-sodium	Pyraflufen	Saflufenacil
1990	Bentazone-sodium	Metsulfuron	Sulfentrazone	2020	Bentazone-sodium	Pyraflufen	Flumioxazin
1991	Bentazone-sodium	Metsulfuron	Bromacil	2021	Bentazone-sodium	Pyraflufen	Metazachlor
1992	Bentazone-sodium	Metsulfuron	Saflufenacil	2022	Bentazone-sodium	Pyraflufen	Pinoxaden
1993	Bentazone-sodium	Metsulfuron	Flumioxazin	2023	Bentazone-sodium	Diclosulam	Carfentrazone
1994	Bentazone-sodium	Metsulfuron	Metazachlor	2024	Bentazone-sodium	Diclosulam	Flucarbazone
1995	Bentazone-sodium	Metsulfuron	Pinoxaden	2025	Bentazone-sodium	Diclosulam	Sulfentrazone
1996	Bentazone-sodium	Metsulfuron	Pyraflufen	2026	Bentazone-sodium	Diclosulam	Bromacil
1997	Bentazone-sodium	Metazachlor	Carfentrazone	2027	Bentazone-sodium	Diclosulam	Saflufenacil
1998	Bentazone-sodium	Metazachlor	Flucarbazone	2028	Bentazone-sodium	Diclosulam	Flumioxazin
1999	Bentazone-sodium	Metazachlor	Sulfentrazone	2029	Bentazone-sodium	Diclosulam	Metazachlor
2000	Bentazone-sodium	Metazachlor	Bromacil	2030	Bentazone-sodium	Diclosulam	Pinoxaden
2001	Bentazone-sodium	Metazachlor	Saflufenacil	2031	Bentazone-sodium	Diclosulam	Pyraflufen
2002	Bentazone-sodium	Metazachlor	Flumioxazin	2032	Bentazone-sodium	Penoxsulam	Carfentrazone
2003	Bentazone-sodium	Metazachlor	Metazachlor	2033	Bentazone-sodium	Penoxsulam	Flucarbazone
2004	Bentazone-sodium	Metazachlor	Pinoxaden	2034	Bentazone-sodium	Penoxsulam	Sulfentrazone
2005	Bentazone-sodium	Metazachlor	Pyraflufen	2035	Bentazone-sodium	Penoxsulam	Bromacil
2006	Bentazone-sodium	Pinoxaden	Carfentrazone	2036	Bentazone-sodium	Penoxsulam	Saflufenacil
2007	Bentazone-sodium	Pinoxaden	Flucarbazone	2037	Bentazone-sodium	Penoxsulam	Flumioxazin
2008	Bentazone-sodium	Pinoxaden	Sulfentrazone	2038	Bentazone-sodium	Penoxsulam	Metazachlor
2009	Bentazone-sodium	Pinoxaden	Bromacil	2039	Bentazone-sodium	Penoxsulam	Pinoxaden

TABLE 1-continued

Photosystem II			Chlorophyll and Heme biosynthesis inhibitor		
S No.	inhibitor	ALS inhibitor	S No.	inhibitor	ALS inhibitor
2010	Bentazone-sodium	Pinoxaden	2040	Bentazone-sodium	Penoxsulam
2041	Bromoxynil	Imazamox	2071	Bromoxynil	Imazethapyr
2042	Bromoxynil	Imazamox	2072	Bromoxynil	Imazethapyr
2043	Bromoxynil	Imazamox	2073	Bromoxynil	Imazethapyr
2044	Bromoxynil	Imazamox	2074	Bromoxynil	Imazethapyr
2045	Bromoxynil	Imazamox	2075	Bromoxynil	Imazethapyr
2046	Bromoxynil	Imazamox	2076	Bromoxynil	Imazethapyr
2047	Bromoxynil	Imazamox	2077	Bromoxynil	Carfentrazone
2048	Bromoxynil	Imazamox	2078	Bromoxynil	Carfentrazone
2049	Bromoxynil	Imazamox	2079	Bromoxynil	Carfentrazone
2050	Bromoxynil	Imazapic	2080	Bromoxynil	Carfentrazone
2051	Bromoxynil	Imazapic	2081	Bromoxynil	Carfentrazone
2052	Bromoxynil	Imazapic	2082	Bromoxynil	Carfentrazone
2053	Bromoxynil	Imazapic	2083	Bromoxynil	Carfentrazone
2054	Bromoxynil	Imazapic	2084	Bromoxynil	Carfentrazone
2055	Bromoxynil	Imazapic	2085	Bromoxynil	Carfentrazone
2056	Bromoxynil	Imazapic	2086	Bromoxynil	Flucarbazone
2057	Bromoxynil	Imazapic	2087	Bromoxynil	Flucarbazone
2058	Bromoxynil	Imazapic	2088	Bromoxynil	Flucarbazone
2059	Bromoxynil	Imazapyr	2089	Bromoxynil	Flucarbazone
2060	Bromoxynil	Imazapyr	2090	Bromoxynil	Flucarbazone
2061	Bromoxynil	Imazapyr	2091	Bromoxynil	Flucarbazone
2062	Bromoxynil	Imazapyr	2092	Bromoxynil	Flucarbazone
2063	Bromoxynil	Imazapyr	2093	Bromoxynil	Flucarbazone
2064	Bromoxynil	Imazapyr	2094	Bromoxynil	Flucarbazone
2065	Bromoxynil	Imazapyr	2095	Bromoxynil	Sulfentrazone
2066	Bromoxynil	Imazapyr	2096	Bromoxynil	Sulfentrazone
2067	Bromoxynil	Imazapyr	2097	Bromoxynil	Sulfentrazone
2068	Bromoxynil	Imazethapyr	2098	Bromoxynil	Sulfentrazone
2069	Bromoxynil	Imazethapyr	2099	Bromoxynil	Sulfentrazone
2070	Bromoxynil	Imazethapyr	2100	Bromoxynil	Sulfentrazone
2101	Bromoxynil	Sulfentrazone	2131	Bromoxynil	Pyrazosulfuron
2102	Bromoxynil	Sulfentrazone	2132	Bromoxynil	Pyrazosulfuron
2103	Bromoxynil	Sulfentrazone	2133	Bromoxynil	Pyrazosulfuron
2104	Bromoxynil	Flucarbazone-sodium	2134	Bromoxynil	Pyrazosulfuron
2105	Bromoxynil	Flucarbazone-sodium	2135	Bromoxynil	Pyrazosulfuron
2106	Bromoxynil	Flucarbazone-sodium	2136	Bromoxynil	Pyrazosulfuron
2107	Bromoxynil	Flucarbazone-sodium	2137	Bromoxynil	Pyrazosulfuron
2108	Bromoxynil	Flucarbazone-sodium	2138	Bromoxynil	Pyrazosulfuron
2109	Bromoxynil	Flucarbazone-sodium	2139	Bromoxynil	Pyrazosulfuron
2110	Bromoxynil	Flucarbazone-sodium	2140	Bromoxynil	Sulfosulfuron
2111	Bromoxynil	Flucarbazone-sodium	2141	Bromoxynil	Sulfosulfuron
2112	Bromoxynil	Flucarbazone-sodium	2142	Bromoxynil	Sulfosulfuron
2113	Bromoxynil	Bensulfuron	2143	Bromoxynil	Sulfosulfuron
2114	Bromoxynil	Bensulfuron	2144	Bromoxynil	Sulfosulfuron
2115	Bromoxynil	Bensulfuron	2145	Bromoxynil	Sulfosulfuron
2116	Bromoxynil	Bensulfuron	2146	Bromoxynil	Sulfosulfuron
2117	Bromoxynil	Bensulfuron	2147	Bromoxynil	Sulfosulfuron
2118	Bromoxynil	Bensulfuron	2148	Bromoxynil	Sulfosulfuron
2119	Bromoxynil	Bensulfuron	2149	Bromoxynil	Trifloxysulfuron
2120	Bromoxynil	Bensulfuron	2150	Bromoxynil	Trifloxysulfuron
2121	Bromoxynil	Bensulfuron	2151	Bromoxynil	Trifloxysulfuron
2122	Bromoxynil	Halosulfuron	2152	Bromoxynil	Trifloxysulfuron
2123	Bromoxynil	Halosulfuron	2153	Bromoxynil	Trifloxysulfuron
2124	Bromoxynil	Halosulfuron	2154	Bromoxynil	Trifloxysulfuron
2125	Bromoxynil	Halosulfuron	2155	Bromoxynil	Trifloxysulfuron
2126	Bromoxynil	Halosulfuron	2156	Bromoxynil	Trifloxysulfuron
2127	Bromoxynil	Halosulfuron	2157	Bromoxynil	Trifloxysulfuron
2128	Bromoxynil	Halosulfuron	2158	Bromoxynil	Metsulfuron
2129	Bromoxynil	Halosulfuron	2159	Bromoxynil	Metsulfuron
2130	Bromoxynil	Halosulfuron	2160	Bromoxynil	Metsulfuron
2161	Bromoxynil	Metsulfuron	2191	Bromoxynil	Pyraflufen
2162	Bromoxynil	Metsulfuron	2192	Bromoxynil	Pyraflufen
2163	Bromoxynil	Metsulfuron	2193	Bromoxynil	Diclosulam
2164	Bromoxynil	Metsulfuron	2194	Bromoxynil	Diclosulam

TABLE 1-continued

Photosystem II			Chlorophyll and Heme biosynthesis inhibitor	Photosystem II			Chlorophyll and Heme biosynthesis inhibitor
S No.	inhibitor	ALS inhibitor		S No.	inhibitor	ALS inhibitor	
2165	Bromoxynil	Metsulfuron	Pinoxaden	2195	Bromoxynil	Diclosulam	Sulfentrazone
2166	Bromoxynil	Metsulfuron	Pyraflufen	2196	Bromoxynil	Diclosulam	Bromacil
2167	Bromoxynil	Metazachlor	Carfentrazone	2197	Bromoxynil	Diclosulam	Saflufenacil
2168	Bromoxynil	Metazachlor	Flucarbazone	2198	Bromoxynil	Diclosulam	Flumioxazin
2169	Bromoxynil	Metazachlor	Sulfentrazone	2199	Bromoxynil	Diclosulam	Metazachlor
2170	Bromoxynil	Metazachlor	Bromacil	2200	Bromoxynil	Diclosulam	Pinoxaden
2171	Bromoxynil	Metazachlor	Saflufenacil	2201	Bromoxynil	Diclosulam	Pyraflufen
2172	Bromoxynil	Metazachlor	Flumioxazin	2202	Bromoxynil	Penoxsulam	Carfentrazone
2173	Bromoxynil	Metazachlor	Metazachlor	2203	Bromoxynil	Penoxsulam	Flucarbazone
2174	Bromoxynil	Metazachlor	Pinoxaden	2204	Bromoxynil	Penoxsulam	Sulfentrazone
2175	Bromoxynil	Metazachlor	Pyraflufen	2205	Bromoxynil	Penoxsulam	Bromacil
2176	Bromoxynil	Pinoxaden	Carfentrazone	2206	Bromoxynil	Penoxsulam	Saflufenacil
2177	Bromoxynil	Pinoxaden	Flucarbazone	2207	Bromoxynil	Penoxsulam	Flumioxazin
2178	Bromoxynil	Pinoxaden	Sulfentrazone	2208	Bromoxynil	Penoxsulam	Metazachlor
2179	Bromoxynil	Pinoxaden	Bromacil	2209	Bromoxynil	Penoxsulam	Pinoxaden
2180	Bromoxynil	Pinoxaden	Saflufenacil	2210	Bromoxynil	Penoxsulam	Pyraflufen
2181	Bromoxynil	Pinoxaden	Flumioxazin	2211	Diuron	Imazamox	Carfentrazone
2182	Bromoxynil	Pinoxaden	Metazachlor	2212	Diuron	Imazamox	Flucarbazone
2183	Bromoxynil	Pinoxaden	Pinoxaden	2213	Diuron	Imazamox	Sulfentrazone
2184	Bromoxynil	Pinoxaden	Pyraflufen	2214	Diuron	Imazamox	Bromacil
2185	Bromoxynil	Pyraflufen	Carfentrazone	2215	Diuron	Imazamox	Saflufenacil
2186	Bromoxynil	Pyraflufen	Flucarbazone	2216	Diuron	Imazamox	Flumioxazin
2187	Bromoxynil	Pyraflufen	Sulfentrazone	2217	Diuron	Imazamox	Metazachlor
2188	Bromoxynil	Pyraflufen	Bromacil	2218	Diuron	Imazamox	Pinoxaden
2189	Bromoxynil	Pyraflufen	Saflufenacil	2219	Diuron	Imazamox	Pyraflufen
2190	Bromoxynil	Pyraflufen	Flumioxazin	2220	Diuron	Imazapic	Carfentrazone
2221	Diuron	Imazapic	Flucarbazone	2251	Diuron	Carfentrazone	Saflufenacil
2222	Diuron	Imazapic	Sulfentrazone	2252	Diuron	Carfentrazone	Flumioxazin
2223	Diuron	Imazapic	Bromacil	2253	Diuron	Carfentrazone	Metazachlor
2224	Diuron	Imazapic	Saflufenacil	2254	Diuron	Carfentrazone	Pinoxaden
2225	Diuron	Imazapic	Flumioxazin	2255	Diuron	Carfentrazone	Pyraflufen
2226	Diuron	Imazapic	Metazachlor	2256	Diuron	Flucarbazone	Carfentrazone
2227	Diuron	Imazapic	Pinoxaden	2257	Diuron	Flucarbazone	Flucarbazone
2228	Diuron	Imazapic	Pyraflufen	2258	Diuron	Flucarbazone	Sulfentrazone
2229	Diuron	Imazapyr	Carfentrazone	2259	Diuron	Flucarbazone	Bromacil
2230	Diuron	Imazapyr	Flucarbazone	2260	Diuron	Flucarbazone	Saflufenacil
2231	Diuron	Imazapyr	Sulfentrazone	2261	Diuron	Flucarbazone	Flumioxazin
2232	Diuron	Imazapyr	Bromacil	2262	Diuron	Flucarbazone	Metazachlor
2233	Diuron	Imazapyr	Saflufenacil	2263	Diuron	Flucarbazone	Pinoxaden
2234	Diuron	Imazapyr	Flumioxazin	2264	Diuron	Flucarbazone	Pyraflufen
2235	Diuron	Imazapyr	Metazachlor	2265	Diuron	Sulfentrazone	Carfentrazone
2236	Diuron	Imazapyr	Pinoxaden	2266	Diuron	Sulfentrazone	Flucarbazone
2237	Diuron	Imazapyr	Pyraflufen	2267	Diuron	Sulfentrazone	Amicarbazone
2238	Diuron	Imazethapyr	Carfentrazone	2268	Diuron	Sulfentrazone	Bromacil
2239	Diuron	Imazethapyr	Flucarbazone	2269	Diuron	Sulfentrazone	Saflufenacil
2240	Diuron	Imazethapyr	Sulfentrazone	2270	Diuron	Sulfentrazone	Flumioxazin
2241	Diuron	Imazethapyr	Bromacil	2271	Diuron	Sulfentrazone	Metazachlor
2242	Diuron	Imazethapyr	Saflufenacil	2272	Diuron	Sulfentrazone	Pinoxaden
2243	Diuron	Imazethapyr	Flumioxazin	2273	Diuron	Sulfentrazone	Pyraflufen
2244	Diuron	Imazethapyr	Metazachlor	2274	Diuron	Flucarbazone-sodium	Carfentrazone
2245	Diuron	Imazethapyr	Pinoxaden	2275	Diuron	Flucarbazone-sodium	Flucarbazone
2246	Diuron	Imazethapyr	Pyraflufen	2276	Diuron	Flucarbazone-sodium	Sulfentrazone
2247	Diuron	Carfentrazone	Carfentrazone	2277	Diuron	Flucarbazone-sodium	Bromacil
2248	Diuron	Carfentrazone	Flucarbazone	2278	Diuron	Flucarbazone-sodium	Saflufenacil
2249	Diuron	Carfentrazone	Sulfentrazone	2279	Diuron	Flucarbazone-sodium	Flumioxazin
2250	Diuron	Carfentrazone	Bromacil	2280	Diuron	Flucarbazone-sodium	Metazachlor
2281	Diuron	Flucarbazone-sodium	Pinoxaden	2311	Diuron	Sulfosulfuron	Flucarbazone
2282	Diuron	Flucarbazone-sodium	Pyraflufen	2312	Diuron	Sulfosulfuron	Sulfentrazone
2283	Diuron	Bensulfuron	Carfentrazone	2313	Diuron	Sulfosulfuron	Bromacil
2284	Diuron	Bensulfuron	Flucarbazone	2314	Diuron	Sulfosulfuron	Saflufenacil
2285	Diuron	Bensulfuron	Sulfentrazone	2315	Diuron	Sulfosulfuron	Flumioxazin
2286	Diuron	Bensulfuron	Bromacil	2316	Diuron	Sulfosulfuron	Metazachlor
2287	Diuron	Bensulfuron	Saflufenacil	2317	Diuron	Sulfosulfuron	Pinoxaden
2288	Diuron	Bensulfuron	Flumioxazin	2318	Diuron	Sulfosulfuron	Pyraflufen
2289	Diuron	Bensulfuron	Metazachlor	2319	Diuron	Trifloxysulfuron	Carfentrazone
2290	Diuron	Bensulfuron	Pinoxaden	2320	Diuron	Trifloxysulfuron	Flucarbazone

TABLE 1-continued

Photosystem II			Photosystem II		
S No.	inhibitor	Chlorophyll and Heme biosynthesis inhibitor	S No.	inhibitor	Chlorophyll and Heme biosynthesis inhibitor
2291	Diuron	Bensulfuron	2321	Diuron	Trifloxysulfuron
2292	Diuron	Halosulfuron	2322	Diuron	Trifloxysulfuron
2293	Diuron	Halosulfuron	2323	Diuron	Trifloxysulfuron
2294	Diuron	Halosulfuron	2324	Diuron	Trifloxysulfuron
2295	Diuron	Halosulfuron	2325	Diuron	Trifloxysulfuron
2296	Diuron	Halosulfuron	2326	Diuron	Trifloxysulfuron
2297	Diuron	Halosulfuron	2327	Diuron	Trifloxysulfuron
2298	Diuron	Halosulfuron	2328	Diuron	Metsulfuron
2299	Diuron	Halosulfuron	2329	Diuron	Metsulfuron
2300	Diuron	Halosulfuron	2330	Diuron	Metsulfuron
2301	Diuron	Pyrazosulfuron	2331	Diuron	Metsulfuron
2302	Diuron	Pyrazosulfuron	2332	Diuron	Metsulfuron
2303	Diuron	Pyrazosulfuron	2333	Diuron	Metsulfuron
2304	Diuron	Pyrazosulfuron	2334	Diuron	Metsulfuron
2305	Diuron	Pyrazosulfuron	2335	Diuron	Metsulfuron
2306	Diuron	Pyrazosulfuron	2336	Diuron	Metsulfuron
2307	Diuron	Pyrazosulfuron	2337	Diuron	Metazachlor
2308	Diuron	Pyrazosulfuron	2338	Diuron	Metazachlor
2309	Diuron	Pyrazosulfuron	2339	Diuron	Metazachlor
2310	Diuron	Sulfosulfuron	2340	Diuron	Metazachlor
2341	Diuron	Metazachlor	2371	Diuron	Diclosulam
2342	Diuron	Metazachlor	2372	Diuron	Penoxsulam
2343	Diuron	Metazachlor	2373	Diuron	Penoxsulam
2344	Diuron	Metazachlor	2374	Diuron	Penoxsulam
2345	Diuron	Metazachlor	2375	Diuron	Penoxsulam
2346	Diuron	Pinoxaden	2376	Diuron	Penoxsulam
2347	Diuron	Pinoxaden	2377	Diuron	Penoxsulam
2348	Diuron	Pinoxaden	2378	Diuron	Penoxsulam
2349	Diuron	Pinoxaden	2379	Diuron	Penoxsulam
2350	Diuron	Pinoxaden	2380	Diuron	Penoxsulam
2351	Diuron	Pinoxaden	2381	Linuron	Imazamox
2352	Diuron	Pinoxaden	2382	Linuron	Imazamox
2353	Diuron	Pinoxaden	2383	Linuron	Imazamox
2354	Diuron	Pinoxaden	2384	Linuron	Imazamox
2355	Diuron	Pyraflufen	2385	Linuron	Imazamox
2356	Diuron	Pyraflufen	2386	Linuron	Imazamox
2357	Diuron	Pyraflufen	2387	Linuron	Imazamox
2358	Diuron	Pyraflufen	2388	Linuron	Imazamox
2359	Diuron	Pyraflufen	2389	Linuron	Imazamox
2360	Diuron	Pyraflufen	2390	Linuron	Imazapic
2361	Diuron	Pyraflufen	2391	Linuron	Imazapic
2362	Diuron	Pyraflufen	2392	Linuron	Imazapic
2363	Diuron	Diclosulam	2393	Linuron	Imazapic
2364	Diuron	Diclosulam	2394	Linuron	Imazapic
2365	Diuron	Diclosulam	2395	Linuron	Imazapic
2366	Diuron	Diclosulam	2396	Linuron	Imazapic
2367	Diuron	Diclosulam	2397	Linuron	Imazapic
2368	Diuron	Diclosulam	2398	Linuron	Imazapic
2369	Diuron	Diclosulam	2399	Linuron	Imazapyr
2370	Diuron	Diclosulam	2400	Linuron	Imazapyr
2401	Linuron	Imazapyr	2431	Linuron	Flucarbazone
2402	Linuron	Imazapyr	2432	Linuron	Flucarbazone
2403	Linuron	Imazapyr	2433	Linuron	Flucarbazone
2404	Linuron	Imazapyr	2434	Linuron	Flucarbazone
2405	Linuron	Imazapyr	2435	Linuron	Sulfentrazone
2406	Linuron	Imazapyr	2436	Linuron	Sulfentrazone
2407	Linuron	Imazapyr	2437	Linuron	Sulfentrazone
2408	Linuron	Imazethapyr	2438	Linuron	Sulfentrazone
2409	Linuron	Imazethapyr	2439	Linuron	Sulfentrazone
2410	Linuron	Imazethapyr	2440	Linuron	Sulfentrazone
2411	Linuron	Imazethapyr	2441	Linuron	Sulfentrazone
2412	Linuron	Imazethapyr	2442	Linuron	Sulfentrazone
2413	Linuron	Imazethapyr	2443	Linuron	Sulfentrazone
2414	Linuron	Imazethapyr	2444	Linuron	Flucarbazone-sodium
2415	Linuron	Imazethapyr	2445	Linuron	Flucarbazone-sodium
2416	Linuron	Imazethapyr	2446	Linuron	Flucarbazone-sodium
2417	Linuron	Carfentrazone	2447	Linuron	Flucarbazone-sodium
2418	Linuron	Carfentrazone	2448	Linuron	Flucarbazone-sodium
2419	Linuron	Carfentrazone	2449	Linuron	Flucarbazone-sodium

TABLE 1-continued

Photosystem II S No. inhibitor	ALS inhibitor	Chlorophyll and Heme biosynthesis inhibitor	Photosystem II S No. inhibitor	ALS inhibitor	Chlorophyll and Heme biosynthesis inhibitor
2420 Linuron	Carfentrazone	Bromacil	2450 Linuron	Flucarbazone- sodium	Metazachlor
2421 Linuron	Carfentrazone	Saflufenacil	2451 Linuron	Flucarbazone- sodium	Pinoxaden
2422 Linuron	Carfentrazone	Flumioxazin	2452 Linuron	Flucarbazone- sodium	Pyraflufen
2423 Linuron	Carfentrazone	Metazachlor	2453 Linuron	Bensulfuron	Carfentrazone
2424 Linuron	Carfentrazone	Pinoxaden	2454 Linuron	Bensulfuron	Flucarbazone
2425 Linuron	Carfentrazone	Pyraflufen	2455 Linuron	Bensulfuron	Sulfentrazone
2426 Linuron	Flucarbazone	Carfentrazone	2456 Linuron	Bensulfuron	Bromacil
2427 Linuron	Flucarbazone	Flucarbazone	2457 Linuron	Bensulfuron	Saflufenacil
2428 Linuron	Flucarbazone	Sulfentrazone	2458 Linuron	Bensulfuron	Flumioxazin
2429 Linuron	Flucarbazone	Bromacil	2459 Linuron	Bensulfuron	Metazachlor
2430 Linuron	Flucarbazone	Saflufenacil	2460 Linuron	Bensulfuron	Pinoxaden
2461 Linuron	Bensulfuron	Pyraflufen	2491 Linuron	Trifloxysulfuron	Sulfentrazone
2462 Linuron	Halosulfuron	Carfentrazone	2492 Linuron	Trifloxysulfuron	Bromacil
2463 Linuron	Halosulfuron	Flucarbazone	2493 Linuron	Trifloxysulfuron	Saflufenacil
2464 Linuron	Halosulfuron	Sulfentrazone	2494 Linuron	Trifloxysulfuron	Flumioxazin
2465 Linuron	Halosulfuron	Bromacil	2495 Linuron	Trifloxysulfuron	Metazachlor
2466 Linuron	Halosulfuron	Saflufenacil	2496 Linuron	Trifloxysulfuron	Pinoxaden
2467 Linuron	Halosulfuron	Flumioxazin	2497 Linuron	Trifloxysulfuron	Pyraflufen
2468 Linuron	Halosulfuron	Metazachlor	2498 Linuron	Metsulfuron	Carfentrazone
2469 Linuron	Halosulfuron	Pinoxaden	2499 Linuron	Metsulfuron	Flucarbazone
2470 Linuron	Halosulfuron	Pyraflufen	2500 Linuron	Metsulfuron	Sulfentrazone
2471 Linuron	Pyrazosulfuron	Carfentrazone	2501 Linuron	Metsulfuron	Bromacil
2472 Linuron	Pyrazosulfuron	Flucarbazone	2502 Linuron	Metsulfuron	Saflufenacil
2473 Linuron	Pyrazosulfuron	Sulfentrazone	2503 Linuron	Metsulfuron	Flumioxazin
2474 Linuron	Pyrazosulfuron	Bromacil	2504 Linuron	Metsulfuron	Metazachlor
2475 Linuron	Pyrazosulfuron	Saflufenacil	2505 Linuron	Metsulfuron	Pinoxaden
2476 Linuron	Pyrazosulfuron	Flumioxazin	2506 Linuron	Metsulfuron	Pyraflufen
2477 Linuron	Pyrazosulfuron	Metazachlor	2507 Linuron	Metazachlor	Carfentrazone
2478 Linuron	Pyrazosulfuron	Pinoxaden	2508 Linuron	Metazachlor	Flucarbazone
2479 Linuron	Pyrazosulfuron	Pyraflufen	2509 Linuron	Metazachlor	Sulfentrazone
2480 Linuron	Sulfosulfuron	Carfentrazone	2510 Linuron	Metazachlor	Bromacil
2481 Linuron	Sulfosulfuron	Flucarbazone	2511 Linuron	Metazachlor	Saflufenacil
2482 Linuron	Sulfosulfuron	Sulfentrazone	2512 Linuron	Metazachlor	Flumioxazin
2483 Linuron	Sulfosulfuron	Bromacil	2513 Linuron	Metazachlor	Metazachlor
2484 Linuron	Sulfosulfuron	Saflufenacil	2514 Linuron	Metazachlor	Pinoxaden
2485 Linuron	Sulfosulfuron	Flumioxazin	2515 Linuron	Metazachlor	Pyraflufen
2486 Linuron	Sulfosulfuron	Metazachlor	2516 Linuron	Pinoxaden	Carfentrazone
2487 Linuron	Sulfosulfuron	Pinoxaden	2517 Linuron	Pinoxaden	Flucarbazone
2488 Linuron	Sulfosulfuron	Pyraflufen	2518 Linuron	Pinoxaden	Sulfentrazone
2489 Linuron	Trifloxysulfuron	Carfentrazone	2519 Linuron	Pinoxaden	Bromacil
2490 Linuron	Trifloxysulfuron	Flucarbazone	2520 Linuron	Pinoxaden	Saflufenacil
2521 Linuron	Pinoxaden	Flumioxazin	2536 Linuron	Diclosulam	Bromacil
2522 Linuron	Pinoxaden	Metazachlor	2537 Linuron	Diclosulam	Saflufenacil
2523 Linuron	Pinoxaden	Pinoxaden	2538 Linuron	Diclosulam	Flumioxazin
2524 Linuron	Pinoxaden	Pyraflufen	2539 Linuron	Diclosulam	Metazachlor
2525 Linuron	Pyraflufen	Carfentrazone	2540 Linuron	Diclosulam	Pinoxaden
2526 Linuron	Pyraflufen	Flucarbazone	2541 Linuron	Diclosulam	Pyraflufen
2527 Linuron	Pyraflufen	Sulfentrazone	2542 Linuron	Penoxsulam	Carfentrazone
2528 Linuron	Pyraflufen	Bromacil	2543 Linuron	Penoxsulam	Flucarbazone
2529 Linuron	Pyraflufen	Saflufenacil	2544 Linuron	Penoxsulam	Sulfentrazone
2530 Linuron	Pyraflufen	Flumioxazin	2545 Linuron	Penoxsulam	Bromacil
2531 Linuron	Pyraflufen	Metazachlor	2546 Linuron	Penoxsulam	Saflufenacil
2532 Linuron	Pyraflufen	Pinoxaden	2547 Linuron	Penoxsulam	Flumioxazin
2533 Linuron	Diclosulam	Carfentrazone	2548 Linuron	Penoxsulam	Metazachlor
2534 Linuron	Diclosulam	Flucarbazone	2549 Linuron	Penoxsulam	Pinoxaden
2535 Linuron	Diclosulam	Sulfentrazone	2550 Linuron	Penoxsulam	Pyraflufen

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In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) bentazone or bentazone-sodium;
- (b) pyraflufen; and
- (c) a chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone, amicarbazone, flucarbazone, sulfentrazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) bentazone or bentazone-sodium;

- (b) diclosulam; and

- (c) a chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone, amicarbazone, flucarbazone, sulfentrazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) bentazone or bentazone-sodium;
- (b) penoxsulam; and
- (c) a chlorophyll and heme biosynthesis inhibitor is selected from the group consisting of carfentrazone,

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amicarbazone, flucarbazone, sulfentrazone, bromacil, saflufenacil, flumioxazin, metazachlor, pinoxaden, and pyraflufen.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) ametryn;
- (b) sulfentrazone; and
- (c) amicarbazone.

In an embodiment, the present invention provides an herbicidal composition comprising:

- (a) ametryn;
- (b) sulfentrazone;
- (c) amicarbazone; and
- (d) at least one agrochemically acceptable excipient.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) diuron;
- (b) sulfentrazone; and
- (c) amicarbazone.

In an embodiment, the present invention provides an herbicidal composition comprising:

- (a) diuron;
- (b) sulfentrazone;
- (c) amicarbazone; and
- (d) at least one agrochemically acceptable excipient.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) ametryn;
- (b) halosulfuron-methyl; and
- (c) amicarbazone.

In an embodiment, the present invention provides an herbicidal composition comprising:

- (a) ametryn;
- (b) halosulfuron-methyl;
- (c) amicarbazone; and
- (d) at least one agrochemically acceptable excipient.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) diuron;
- (b) halosulfuron-methyl; and
- (c) amicarbazone.

In an embodiment, the present invention provides an herbicidal composition comprising:

- (a) diuron;
- (b) halosulfuron-methyl;
- (c) amicarbazone; and
- (d) at least one agrochemically acceptable excipient.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) ametryn;
- (b) imazapic; and
- (c) amicarbazone.

In an embodiment, the present invention provides an herbicidal composition comprising:

- (a) ametryn;
- (b) imazapic;
- (c) amicarbazone; and
- (d) at least one agrochemically acceptable excipient.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) diuron;
- (b) imazapic; and
- (c) amicarbazone.

In an embodiment, the present invention provides an herbicidal composition comprising:

- (a) diuron;
- (b) imazapic;

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(c) amicarbazone; and

(d) at least one agrochemically acceptable excipient.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) ametryn;
- (b) trifloxysulfuron-sodium; and
- (c) amicarbazone.

In an embodiment, the present invention provides an herbicidal composition comprising:

- (a) ametryn;
- (b) trifloxysulfuron-sodium;
- (c) amicarbazone; and
- (d) at least one agrochemically acceptable excipient.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) ametryn;
- (b) indaziflam; and
- (c) amicarbazone.

In an embodiment, the present invention provides an herbicidal composition comprising:

- (a) ametryn;
- (b) indaziflam;
- (c) amicarbazone; and
- (d) at least one agrochemically acceptable excipient.

In an embodiment, the present invention provides an herbicidal combination comprising:

- (a) diuron;
- (b) indaziflam; and
- (c) amicarbazone.

In an embodiment, the present invention provides an herbicidal composition comprising:

- (a) diuron;
- (b) indaziflam;
- (c) amicarbazone; and
- (d) at least one agrochemically acceptable excipient.

In an embodiment, each individual row appearing in Table 1 below represents the combinations in an embodiment of the present invention.

In an embodiment, the present invention may provide a combination comprising the three herbicides as listed in each individual row from row 1 to row 2550 in Table 1.

In an embodiment, the present invention may provide a composition comprising the three herbicides as listed in each individual row from row 1 to row 2550 in the Table 1, and at least one agrochemically acceptable excipient.

These combinations may be applied to the locus of the weeds, in an herbicidally effective amount.

In an embodiment, the combination of the present invention may be combined with at least another active ingredient such as those selected from but not limited to herbicide, insecticide, fungicide, biological agent, plant growth activator, fertilizers, or combinations thereof.

Thus, in an embodiment, the combination of the present invention may be combined with another herbicide. Exemplary herbicides that may be combined with the combination of the present invention may be selected from but not limited to herbicides belonging to classes such as EPSP synthase inhibitors, synthetic auxins, auxin transport inhibitors, glutamate synthase inhibitors, HPPD inhibitors, lipid synthesis inhibitors, long chain fatty acid inhibitors, as well as herbicides with unknown modes of action.

In an embodiment, the total amount of photosystem II inhibitor in the composition may be in the range of 0.1 to 99% by weight, preferably 0.2 to 90% by weight.

In an embodiment, the total amount of ALS inhibitor in the composition may be in the range of 0.1 to 99% by weight.

In an embodiment, the total amount of chlorophyll and heme biosynthesis inhibitor in the composition may be in the range of 0.1 to 99% by weight.

In an embodiment, the constituent herbicides of the combination of the present invention may be admixed in ratio of (1-80):(1-80):(1-80) of the three herbicides respectively.

The herbicidal combination of the present invention may be used to target weeds among the crops such as corn, rice, wheat, barley, rye, oat, sorghum, cotton, soybean, peanut, buckwheat, beet, rapeseed, sunflower, sugar cane, tobacco, etc.; vegetables: solanaceous vegetables such as eggplant, tomato, pimento, pepper, potato, etc., cucurbit vegetables such as cucumber, pumpkin, zucchini, water melon, melon, squash, etc., cruciferous vegetables such as radish, white turnip, horseradish, kohlrabi, Chinese cabbage, cabbage, leaf mustard, broccoli, cauliflower, etc., asteraceous vegetables such as burdock, crown daisy, artichoke, lettuce, etc., liliaceous vegetables such as green onion, onion, garlic, and asparagus, ammiaceous vegetables such as carrot, parsley, celery, parsnip, etc., chenopodiaceous vegetables such as spinach, Swiss chard, etc., lamiaceous vegetables such as *Perilla frutescens*, mint, basil, etc., strawberry, sweet potato, *Dioscorea japonica*, *colocasia*, etc., flowers, foliage plants, turf grasses, fruits: pome fruits such as apple, pear, quince, etc., stone fleshy fruits such as peach, plum, nectarine, *Prunus mume*, cherry fruit, apricot, prune, etc., citrus fruits such as orange, lemon, lime, grapefruit, etc., nuts such as chestnuts, walnuts, hazelnuts, almond, pistachio, cashew nuts, macadamia nuts, etc. berries such as blueberry, cranberry, blackberry, raspberry, etc., grape, kaki fruit, olive, plum, banana, coffee, date palm, coconuts, etc., trees other than fruit trees; tea, mulberry, flowering plant, trees such as ash, birch, dogwood, *Eucalyptus*, *Ginkgo biloba*, lilac, maple, *Quercus*, poplar, Judas tree, *Liquidambar formosana*, plane tree, *zelkova*, Japanese arborvitae, fir wood, hemlock, juniper, *Pinus*, *Picea*, and *Taxus cuspidata*, and the like.

In an embodiment, the composition of the present invention may contain agriculturally acceptable adjuvants, carriers, diluents, emulsifiers, fillers, anti-foaming agents, thickening agents, anti-freezing agents, freezing agents and the like. The compositions may be either solid or liquids. They can be solids, such as, for example, dusts, granules, water-dispersible granules, microcapsules or wettable powders, or liquids, such as, for example, emulsifiable concentrates, solutions, emulsions or suspensions, ZC formulations. They can also be provided as a pre-mix or tank mixed.

Exemplary agricultural adjuvants and carriers may include, but are not limited to, crop oil concentrates; methylated seed oils, emulsified methylated seed oil, nonylphenol ethoxylate; benzylcocoalkyldimethyl quaternary ammonium salt; blend of petroleum hydrocarbon, alkyl esters, organic acid, and anionic surfactant; C9-C11 alkylpolyglycoside; phosphated alcohol ethoxylate; natural primary alcohol (C12-C16) ethoxylate; di-sec-butylphenol EO-PO block copolymer; polysiloxane-methyl cap; nonylphenol ethoxylate, urea ammonium nitrate; tridecyl alcohol (synthetic) ethoxylate (8E0); tallow amine ethoxylate; PEG(400) dioleate-99, alkyl sulfates, such as diethanolammonium lauryl sulfate; alkylarylsulfonate salts, such as calcium dodecylbenzenesulfonate; alkylphenol-alkylene oxide addition products, such as nonylphenol-C₁₈ ethoxylate; alcohol-alkylene oxide addition products, such as tridecyl alcohol-C₁₆ ethoxylate; soaps, such as sodium stearate; alkyl-naphthalene-sulfonate salts, such as sodium dibutyl-naphthalenesulfonate; dialkyl esters of sulfosuccinate salts, such as sodium di(2-ethylhexyl)sulfosuccinate; sorbitol esters, such as sorbitol oleate; quaternary amines,

such as lauryl trimethylammonium chloride; polyethylene glycol esters of fatty acids, such as polyethylene glycol stearate; block copolymers of ethylene oxide and propylene oxide; salts of mono and dialkyl phosphate esters; vegetable or seed oils such as soybean oil, rapeseed/canola oil, olive oil, castor oil, sunflower seed oil, coconut oil, corn oil, cottonseed oil, linseed oil, palm oil, peanut oil, safflower oil, sesame oil, tung oil and the like; and esters of the above vegetable oils, and in certain embodiments, methyl esters.

Exemplary liquid carriers that may be employed in a composition of the present invention may include water or organic solvents. The organic solvents include, but are not limited to, petroleum fractions or hydrocarbons such as mineral oil, aromatic solvents, paraffinic oils, and the like; vegetable oils such as soybean oil, rapeseed oil, olive oil, castor oil, sunflower seed oil, coconut oil, corn oil, cottonseed oil, linseed oil, palm oil, peanut oil, safflower oil, sesame oil, tung oil and the like; esters of the above vegetable oils; esters of monoalcohols or dihydric, trihydric, or other lower polyalcohols (4-6 hydroxy containing), such as 2-ethyl hexyl stearate, n-butyl oleate, isopropyl myristate, propylene glycol dioleate, di-octyl succinate, di-butyl adipate, di-octyl phthalate and the like; esters of mono, di and polycarboxylic acids and the like. Organic solvents include, but are not limited to toluene, xylene, petroleum naphtha, crop oil, acetone, methyl ethyl ketone, cyclohexanone, trichloroethylene, perchloroethylene, ethyl acetate, amyl acetate, butyl acetate, propylene glycol monomethyl ether and diethylene glycol monomethyl ether, methyl alcohol, ethyl alcohol, isopropyl alcohol, amyl alcohol, ethylene glycol, propylene glycol, glycerine, N-methyl-2-pyrrolidinone, N,N-dimethyl alkylamides, dimethyl sulfoxide.

Solid carriers that may be employed in the compositions of the present invention may include but are not limited to attapulgite, pyrophyllite clay, silica, kaolin clay, kieselguhr, chalk, diatomaceous earth, lime, calcium carbonate, bentonite clay, Fuller's earth, talc, cottonseed hulls, wheat flour, soybean flour, pumice, wood flour, walnut shell flour, lignin, cellulose etc.

The target weeds may be selected from *Alopecurus myosuroides* Huds. (blackgrass, ALOMY), *Amaranthus palmeri* (Palmer amaranth, AMAPA) *Amaranthus viridis* (slender amaranth, AMAVI), *Avena fatua* (wild oat, AVEFA), *Brachiaria decumbens* Staff. or *Urochloa decumbens* (Stapp), *Brachiaria brizantha* or *Urochloa brizantha*, *Brachiaria platyphylla* (Groseb.) Nash or *Urochloa platyphylla* (broadleaf signalgrass, BRAPP), *Brachiaria plantaginea* or *Urochloa plantaginea* (alexandergrass, BRAPL), *Cenchrus echinatus* (southern sandbur, CENEC), *Digitaria horizontalis* Willd. (Jamaican crabgrass, DIGHO), *Digitaria insularis* (sourgrass, TRCIN), *Digitaria sanguinalis* (large crabgrass, DIGSA), *Echinochloa crus-galli* (barnyardgrass, ECHCG), *Echinochloa colonum* (junglerice, ECHCO), *Eleusine indica* Gaertn. (goosegrass, ELEIN), *Lolium multiflorum* Lam. (Italian ryegrass, LOLMU), *Panicum dichotomiflorum* Michx. (fall panicum, PANDI), *Panicum miliaceum* L. (wild-proso millet, PANMI), *Sesbania exaltata* (hemp sesbania, SEBEX), *Setaria faberi* Herm. (giant foxtail, SETFA), *Setaria viridis* (green foxtail, SETVI), *Sorghum halepense* (Johnsongrass, SORHA), *Sorghum bicolor*, Moench ssp., *Arundinaceum* (shattercane, SORVU), *Cyperus esculentus* (yellow nutsedge, CYPES), *Cyperus rotundus* (purple nutsedge, CYPRO), *Abutilon theophrasti* (velvetleaf, ABUTH), *Amaranthus* species (pigweeds and amaranths, AMASS), *Ambrosia artemisiifolia* L. (common ragweed, AMBEL), *Ambrosia psilostachya* DC. (western ragweed, AMBPS), *Ambrosia trifida* (giant ragweed,

AMBTR), *Anoda cristata* (spurred anoda, ANVCR), *Asclepias syriaca* (common milkweed, ASCSY), *Bidens pilosa* (hairy beggarticks, BIDPI), *Borreria* species (BOISS), *Borreria alata* or *Spermacece alata* Aubl. or *Spermacece latifolia* (broadleaf buttonweed, BOILF), *Che-*
nopodium album L. (common lambsquarters, CHEAL), *Cir-*
sium arvense (Canada thistle, CIRAR), *Commelina bengha-*
lensis (tropical spiderwort, COMBE), *Datura stramonium*
 (jimsonweed, DATST), *Daucus carota* (wild carrot, DAUCA), *Euphorbia heterophylla* (wild poinsettia, EPHHL), *Euphorbia hirta* or *Chamaesyce hirta* (garden
 spurge, EPHHI), *Euphorbia dentata* Michx. (toothed spurge, EPHDE), *Erigeron bonariensis* or *Conyza bonariensis*
 (hairy fleabane, ERIBO), *Erigeron canadensis* or *Conyza*
canadensis (horseweed, ERICA), *Conyza sumatrensis* (tall
 fleabane, ERIFL), *Helianthus annuus* (common sunflower, HELAN), *Jacquemontia tamnifolia* (smallflower morning-
 glory, IAQTA), *Ipomoea hederacea* (ivyleaf morningglory, IPOHE), *Ipomoea lacunosa* (white morningglory, IPOLA),
Lactuca serriola (prickly lettuce, LACSE), *Portulaca oleracea* (common purslane, POROL), *Richardia* species (pusley,
 RCHSS), *Salsola tragus* (Russian thistle, SASKR), *Sida*
 species (*sida*, SIDSS), *Sida spinosa* (prickly sida, SIDSP),
Sinapis arvensis (wild mustard, SINAR), *Solanum ptychan-*
thum (eastern black nightshade, SOLPT), *Tridax procum-*
bens (coat buttons, TRQPR), *Rumex dentatus* (RUMDE) or
Xanthium strumarium (common cocklebur, XANST).

In an embodiment, the combinations of the present invention may be applied to the locus either simultaneously or sequentially, such that the three herbicides may be applied in a tank mix or as a pre-mixed composition.

Thus, in this aspect, the present invention provides a tank-mix combination comprising:

- (a) at least one photosystem II inhibitor selected from the group consisting of (i) a phenylcarbamate herbicide; (ii) a triazine herbicide; (iii) a triazinone herbicide; (iv) an uracil herbicide; (v) a benthiazole herbicide; (vi) a nitrile herbicide; and (vii) an urea herbicide;
- (b) at least one ALS inhibitor selected from the group consisting of (i) an imidazolinone herbicide; (ii) a sulfonylamino-carbonyl triazolinone herbicide; (iii) a sulfonylurea herbicide; (iv) a pyrazole herbicide; (v) a triazolpyrimidine herbicide; and (vi) a triazolone herbicide; and
- (c) at least one chlorophyll and heme biosynthesis inhibitor herbicide.

In an embodiment, the present invention may be applied either pre or post emergent weed applications. The advantage of the combination is surprisingly good residual effects, when applied in pre-emergent as well as quick knockdown when applied post emergent leading to quick control of weeds. In another embodiment, the present invention may be applied for quick burndown of weeds. Another advantage is quick knockdown in the case of burndown.

The method of control of the present invention may be carried out by spraying the suggested tank mixes, or the individual herbicides may be formulated as a kit-of-parts containing various components that may be mixed as instructed prior to spraying.

In an embodiment, the present invention provides a kit-of-parts comprising a plurality of components, wherein said plurality of components comprises:

- (a) a first component comprising at least one photosystem II inhibitor selected from the group consisting of (i) a phenylcarbamate herbicide; (ii) a triazine herbicide;

(iii) a triazinone herbicide; (iv) an uracil herbicide; (v) a benthiazole herbicide; (vi) a nitrile herbicide; and (vii) an urea herbicide;

- (b) a second component comprising at least one ALS inhibitor selected from the group consisting of (i) an imidazolinone herbicide; (ii) a sulfonylamino-carbonyl triazolinone herbicide; (iii) a sulfonylurea herbicide; (iv) a pyrazole herbicide; (v) a triazolpyrimidine herbicide; and (vi) a triazolone herbicide; and
- (c) a third component comprising at least one chlorophyll and heme biosynthesis inhibitor herbicide.

In an embodiment, the kit-of-parts comprises an instructions manual, said instructions manual comprising instructions directing a user to admix the components before being used.

In an embodiment, the components of the present invention may be packaged such that the photosystem II inhibitor, the ALS inhibitor and the chlorophyll and heme biosynthesis inhibitor may be packaged separately and then tank mixed before the spraying.

In another embodiment, the components of the present invention may be packaged such that the photosystem II inhibitor, the ALS inhibitor and the chlorophyll and heme biosynthesis inhibitor may be packaged separately, whereas other additives are packaged separately, such that the two maybe tank mixed at the time of spraying.

In another embodiment, the components of the present invention may be packaged as composition such that the photosystem II inhibitor, the ALS inhibitor and the chlorophyll and heme biosynthesis inhibitor are formulated into one composition and other additives are packaged separately, such that the two maybe tank mixed at the time of spraying.

Surprisingly, it has been found by the present inventors, that the photosystem II inhibitor, the ALS inhibitor and the chlorophyll and heme biosynthesis inhibitor of the present invention, when applied individually, was ineffective in the control of weeds, but demonstrated excellent synergistic control on when applied together. The combination controlled the weed both pre and post emergently. As will be demonstrated by the examples, the combination of clodinafop propargyl, the first herbicide and the second herbicide synergistically controlled broadleaf as well as grasses and sedges at a locus. The current invention therefore provides advantageous methods of controlling weeds both pre and post emergently. The present method also provides a broader spectrum of controlling weeds that helps in resistance management, thus preventing the weed from becoming resistant to either of the herbicides while providing a broader spectrum of control at lower use rates.

It was also found that bentazon alone did not provide sufficient weed control of yellow nutsedge. The addition of halosulfuron to sulfentrazone antagonized initial yellow nutsedge control compared to sulfentrazone alone; thereby, requiring a second application to achieve >90% control. In an aspect, the combinations described herein can provide >90% weed control after a single application.

It was surprisingly also found that the presence of an ALS inhibitor safened the herbicidal effect of the combination of a photosystem II inhibitor, and a chlorophyll and heme biosynthesis inhibitor. Therefore, the combination of the present invention was a non-phytotoxic combination providing a synergistic weed control.

The invention is illustrated by the following non-limiting examples.

EXAMPLES

An exemplary combination according to the invention was used for sedge and broadleaf weed control for agricul-

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tural crops, turf, ornamentals, and landscape. The exemplary combination was used for the post-emergence control of sedges, as well as the control/suppression of various broadleaf and grassy weeds.

A field trial was conducted to evaluate the effectiveness of the combinations of three active ingredients according to the invention when used post emergence, at different rates, compared to industry standards—stand alone and 2 way mixture of compounds for efficacy of yellow nutsedge. The active ingredient combination used in the trial was bentazon+halosulfuron+sulfentrazone. The trial was conducted in Blacksburg, Va. and was initiated on June 6 under Protocol #BRLM-62-US-VA-18-10-BTC. The plots were in fallow area primarily covered with yellow nutsedge and tall fescue, and were sprayed at 4 week intervals. (2 applications total). The application dosages of the herbicides, when used in isolation and when used in the combinations were as follows:

TABLE 2

S No.	Combination	Concentration used	Formulation type	Rate
1	Bentazon	4 lb/gal	L	0.375 oz ai/1000 sq ft
2	Sulfentrazone	4.16 lb/gal	L	0.048 oz ai/1000 sq ft
3	Halosulfuron-methyl	75%	SC	0.024 oz ai/1000 sq ft
4	Bentazon + Halosulfuron-methyl + Sulfentrazone	4 lb/gal + 75% SC + 4.16 lb/gal	L	0.125 + 0.008 + 0.016 oz ai/1000 sq ft

The following results were noted from these trials:

TABLE 3

S No.	Herbicide used	Dosage	Yellow nut sedge at 29 DAT (Percentage Control)		
			13/06	20/6	05/07
1	Untreated	—	0	0	0
2	Bentazon	1X	65	75	76
3	Sulfentrazone	1X	58	73	75
4	Halosulfuron	1X	36	60	81
5	Bentazon + Sulfentrazone	0.5X	61	65	49
6	Bentazon + Halosulfuron	0.5X	50	73	84
7	Sulfentrazone + Halosulfuron	0.5X	48	65	85
8	Bentazon + Sulfentrazone + Halosulfuron	0.33X	56	74	90

The percentage weed cover in these treatment trials were observed and tabulated as hereunder:

TABLE 4

S No.	Herbicide used	Dosage	Yellow nut sedge at 29 DAT (Percentage weed cover)		
			13/06	20/6	05/07
1	Untreated	—	50	49	59
2	Bentazon	1X	40	8	10
3	Sulfentrazone	1X	44	11	9
4	Halosulfuron	1X	50	16	8
5	Bentazon + Sulfentrazone	0.5X	43	16	21

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TABLE 4-continued

S No.	Herbicide used	Dosage	Yellow nut sedge at 29 DAT (Percentage weed cover)		
			13/06	20/6	05/07
6	Bentazon + Halosulfuron	0.5X	38	10	5
7	Sulfentrazone + Halosulfuron	0.5X	50	14	6
8	Bentazon + Sulfentrazone + Halosulfuron	0.33X	53	7	3

It was thus found that the combination of Halosulfuron, Bentazon and Sulfentrazone at each rate, provided superior control of yellow nutsedge compared to each individual product and 2 way mixes. In an aspect, the three-part combinations described herein provide improved weed control, measured for example as burn down and/or residual control, compared to any combination of 2 of the components. A clear rate response with the three-way combination was seen from low to high application rates. The three-way combination provided faster burn down and longer residual control. The use of this three way combination, with three different modes of action, helped provide resistance management and superior weed control.

Without wishing to be bound by theory, the present inventors believe that there were several ways to suppress, but not fully control, the primary varieties of plants from the sedge family. Bentazon and sulfentrazone provided fairly rapid burn down of some of the sedges, while halosulfuron had a delayed response of up to four weeks before plant necrosis began to take place. As a result, multiple sprays were required throughout the growing season to provide adequate control.

Surprisingly, the combinations of the present invention provided quick suppression/control of the sedges, broadleaves and grassy weeds and allowed for longer residual control. The use of the three herbicidal components of the present invention having three different modes of action prevented sedges, broadleaves and grassy weeds to mature into a reproductive state. In an aspect, a single application of the combinations described herein provides effective weed control for an entire growing season.

The use of the terms “a” and “an” and “the” and similar referents (especially in the context of the following claims) are to be construed to cover both the singular and the plural, unless otherwise indicated herein or clearly contradicted by context. The terms first, second etc. as used herein are not meant to denote any particular ordering, but simply for convenience to denote a plurality of, for example, layers. The terms “comprising”, “having”, “including”, and “containing” are to be construed as open-ended terms (i.e., meaning “including, but not limited to”) unless otherwise noted. Recitation of ranges of values are merely intended to serve as a shorthand method of referring individually to each separate value falling within the range, unless otherwise indicated herein, and each separate value is incorporated into the specification as if it were individually recited herein. The endpoints of all ranges are included within the range and independently combinable. All methods described herein can be performed in a suitable order unless otherwise indicated herein or otherwise clearly contradicted by context. The use of any and all examples, or exemplary language (e.g., “such as”), is intended merely to better illustrate the invention and does not pose a limitation on the scope of the invention unless otherwise claimed. No language in the

specification should be construed as indicating any non-claimed element as essential to the practice of the invention as used herein.

While the foregoing written description of the invention enables one of ordinary skill to make and use what is 5 considered presently to be the best mode thereof, those of ordinary skill will understand and appreciate the existence of variations, combinations, and equivalents of the specific embodiment, method, and examples herein. The invention should therefore not be limited by the above described 10 embodiment, method, and examples, but by all embodiments and methods within the scope and spirit of the invention.

We claim:

1. An herbicidal active ingredient combination consisting 15 of bentazon, sulfentrazone, and halosulfuron.

2. A kit-of-parts comprising a plurality of components, wherein said plurality of components comprises an active ingredient combination consisting of:

- (a) bentazon; 20
- (b) sulfentrazone; and
- (c) halosulfuron wherein the kit-of-parts is free of other herbicidal active ingredients.

3. A method of controlling yellow nutsedge weeds at a locus, said method comprising applying to the locus the 25 herbicidal active ingredient combination of claim **1**.

4. A composition comprising the herbicidal active ingredient combination of claim **1** and at least one agrochemically acceptable excipient.

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