



- (51) International Patent Classification:
A23L 1/308 (2006.01) A23L 1/164 (2006.01)
- (21) International Application Number:
PCT/US2017/042368
- (22) International Filing Date:
17 July 2017 (17.07.2017)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
62/362,987 15 July 2016 (15.07.2016) US
- (71) Applicant: ZEA10, LLC [US/US]; 17859 George Moran Drive, Eden Prairie, MN 55347 (US).
- (72) Inventors: MACKAY, Ian; c/o ZEA10, LLC, 17859 George Moran Drive, Eden Prairie, MN 55347 (US). GRE-DEN, Karl; c/o ZEA10, LLC, 17859 George Moran Drive, Eden Prairie, MN 55347 (US). TOBOJA, Kevin; c/o ZEA10, LLC, 17859 George Moran Drive, Eden Prairie, MN 55347 (US). MINGUS, J., David; c/o ZEA10, LLC, 17859 George Moran Drive, Eden Prairie, MN 55347 (US).
- (74) Agent: HAUN, J., Paul et al.; Patterson Thuent Pedersen, P.A., 4800 IDS Center, 80 South Eighth Street, Minneapolis, MN 55402-2100 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ,

(54) Title: BREWER'S SPENT-GRAIN BASED PROTEIN POWDER

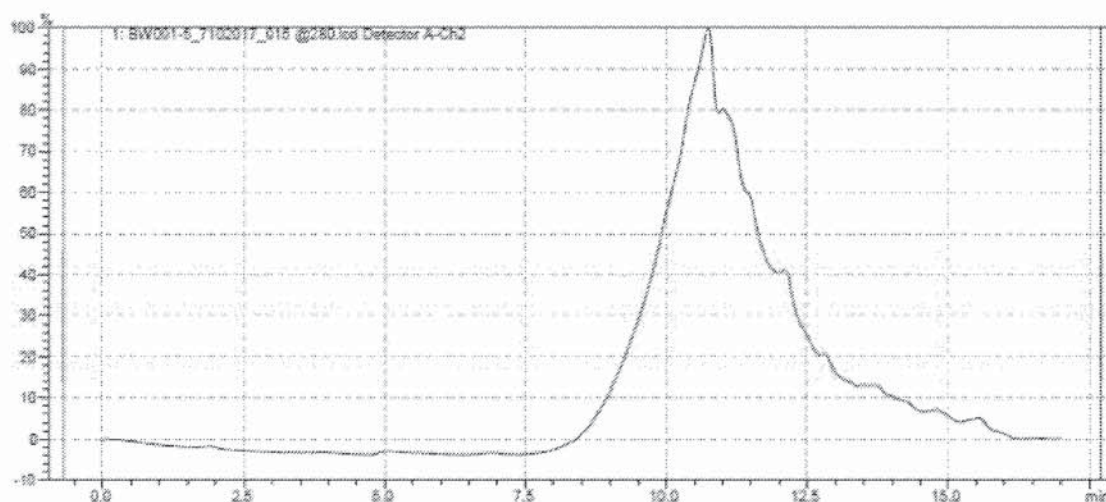


FIGURE 1

(57) Abstract: Brewer's spent-grain based protein powder and related methods for using producing protein-enhanced foodstuff. The brewer's spent-grain based protein powders have beneficial properties including low phytic acid content, high PDCAAS value and retention of significant antioxidant properties. The brewer's spent-grain based protein powders are highly soluble and thus are easily wettable, readily dispersible and blendable in concentrations of up to 50% by weight. The brewer's spent-grain based protein powder possesses beneficial sensory characteristics including light color and mild flavor that allow the brewer's spent-grain based protein powder to be used alone or as a protein value enhancer within foods intended for human consumption, companion pet foods and in commercial livestock feeds.

UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))