

**Partial translation of "Formation and Environmental Factors of
A Flavor Component (HEMF) by Soy Sauce Yeast"**

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9.Difference in Growth Periods of Yeast

In brewing the soy sauce, action of a soy sauce yeast is inevitable for the addition of soy sauce taste or, in other words, for the production of HEMF. Under such circumstances, does any difference happen in the production of HEMF due to the difference in the growth period of yeast or, in other words, in the phase thereof? Results of the investigation on the difference in the yeast growth steps and on the production passage of HEMF are shown in Fig. 7. Thus, the yeast was added to a medium of koji digesting solution in an amount of 1×10^6 c.f.u./ml and an anaerobic incubation was conducted together with stirring so that the yeast during the incubation did not sink. At that time, yeast numbers, ethanol and HEF with the elapse of time were measured.

As will be noted from the figures, ethanol begins to be produced when the yeast numbers become 10^7 c.f.u./ml in a logarithmic growth phase. This is very similar to the state of the yeast fermentation in moromi. After that, the yeast became extinct slowly by the produced ethanol.

As to the production amount of HEMF, it rapidly grew in a logarithmic growth phase where the yeast numbers were small as compared with the stationary phase and it slowly grew in a stationary phase where the yeast numbers were largest. The

result as such also coincides with the findings ¹³⁾ that, in moromi, HEMF increases as the yeast fermentation proceeds. Up to now, the relation between the HEMF production and the pentose-phosphate shunt has been reported ²⁾ and the result at this time also suggests strongly the participation of the metabolism at the time of yeast growth in the production of HEMF.

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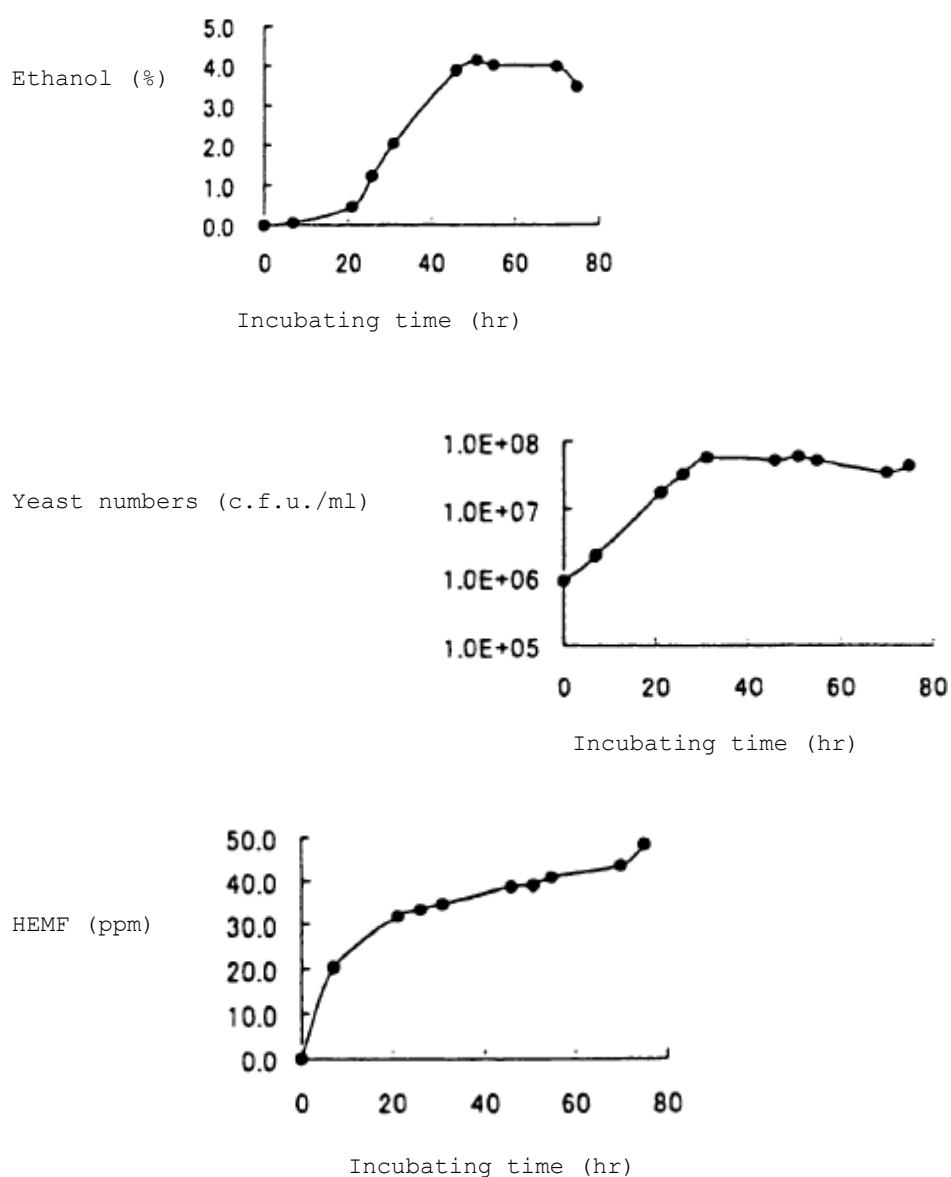


Fig. 7 Yeast Growth Periods and HEMF Production