

<Abstract>

Development of HHS Technology

I : New Method for Malt Treatment by High temperature and High pressure Steam

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High temperature and high pressure water (HHW) is one of the green reaction media and various organic reactions in HHW have been studied. However, high temperature and high pressure steam (HHS) that is the gas phase of subcritical domain has never been induced to industry, because the low water density. As a result, we have been developing industrial applications of HHS for malt treatment as the no extraction method. The malt tissue was hydrolyzed and reacted by water molecule and hydrogen ion under HHS condition. By this method, several kinds of flavor and aromatic compounds were generated in a few minutes. In this presentation, we conducted malting trials and brewing trials using HHS treated-malt we developed.

The hydrothermal method resulted in an advantageous treatment to obtain the enhanced cooked flavors from the malt. This treatment gives a great advantage of development for new type beer.