

G11. Studies on Flavor Improvement of Maesilju

Bo Hyeon SONG, Kap Seong CHOI, Yong Doo KIM, and Jae Keun LEE

Dept. of Food Sci. & Tech., Sunchon National University

This study aims to design proper methods of processing Maesil and to determine the optimum processing condition. Chemical components of Maesil were analyzed in 6 varieties during ripening and the changes of main components and factors which affect on the quality of Maesilju during processing were also studied. Average weight of the fruits increased to the range of 151 - 202 % from 70 days to 90 days after blooming. The hardness of fruit was decreased during ripening and *Koume* variety was not suitable for processing if it was harvested late. Moisture and crusibles were reached to 89 - 91%, 0.57 - 0.69%, respectively, and ash content increased during ripening. Among the Maesil varieties, relatively high content of total acid was observed in *Oshuku* and *Koume*, and that of free sugar in *Koume*, *Gojirou*, and *Oshuku*. The organic acid were malic, citric, succinic, and tartaric acid. Among these, malic and citric acids were the major organic acids. The content of malic acid decreased significantly, whereas citric acid increased during ripening. A total of 35 flavor components were identified in Maesil fruits and major components were ethyl acetate, butyl acetate, and organic acid derivatives. The flavor characteristics of Maesil pulp showed low scores in amounts of components. *Koume* contained larger amount of flavor components than other varieties and the content of flavor components increased during ripening.

Fermentation was proceeded from 20 days to 40 days with 30% of sugar and it was delayed with additional sugar level up to 50%. The intensity of flavor in fermented Maesilju were higher than nonfermented liquors. The amount of volatile flavor increased by Maesil processing and large amounts of aroma components were originated from organic acids in fruit pulp.

Pyridines, pyrazines and other compounds were formed during fermentation and they were found to be core-derived compounds. During the aging of Maesilju, pH increased gradually, acidity decreased, but the amount of alcohol was not changed. The contents of volatile acids increased and those of reducing sugar decreased by aging. The content of malic acid decreased from the 90 days to 180 days. Aldehydes and esters were the major volatile components in the aged Maesilju, and only a little amount of fusel oils was present. The average compositions of Maesilju were ethanol,

14.8%: volatile acid, 72mg%: aldehydes, 5.25mg%: esters, 3.4mg%: extract, 1.75%, respectively. From the analysis of flavor in Maesilju with aging, 76 different compounds were identified and ethyl acetate, ethyl propanoate, pentanoic acid, 2-hexanol were shown to be the main components. The result of sensory test of Maesilju for color, sweetness, sourness, astringency and odor indicated that Maesilju with strong color and *Kourme* was the most favorite for Maesilju and optimal harvest time for processing was 90 days after blooming, and optimal sugar content for alcoholic fermentation was 30%.