

Maillard Browning Reaction Properties of Red Ginseng

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The brown color intensity of red ginseng has been considered as one of major factors to evaluate red ginseng qualities and is evidently concerned with the decrease of total free amino acids (red ginseng : 8.1mg/g, dried raw ginseng : 29.9mg/g) and total free sugars (red ginseng : 105mg/g, dried raw ginseng : 156mg/g). Polyssacharides of the fresh raw ginseng were prominently hydrolyzed into maltose by enzyme reaction on the steaming process of the red ginseng manufacturing process, and maltose was reacted with arginine of the most major free amino acid of ginseng to give arginine-fructose-glucose and arginine-fructose. The brown color intensity was continuously accelerated in the model system of arginine-fructose-glucose or arginine-fructose with free amino acids and free sugars. Accordingly, the brown color intensities of red ginseng could be continuously accelerated by the Maillard type reaction among those components. Therefore, the browning reaction properties of red ginseng process are confirmed as the Maillard type browning reactions concerned with enzymatic and non-enzymatic reactions on the red ginseng manufacturing process.

Key words : red ginseng, Maillard browning reaction, free amino acids, free sugars, arginine-fructose-glucose, arginine-fructose

Reference

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