The Research and Application of Flavor Components of Tea-Goose Powder

李國彬、游銅錫

E-mail: 9300177@mail.dyu.edu.tw

ABSTRACT

Our research purposes were to uncover the producing secrete for the reference of poultry factory, increasing the sales volume of tea-goose and to take the control of tea-goose's price and quantity sold in domestic market. This experiment was separated into 4 parts. The first part of this thesis was to analyze volatile and non-volatile flavor components of several commercial tea-goose seasoning. Non-volatile components found in commercial tea-goose powders included glucose, lactose, MSG, I+G, table salt, Vit. B1, and cysteine-HCl; however, Vit. B1 and cysteine-HCl were considered to come from meat-extract powder, one of the important ingredients of tea-goose seasoning powder. Non-volatile components found in commercial tea-goose powders included ethyl maltol, cinnamic aldehyde, eugenol, and coumarin. These four volatile ingredients took over than 85% of total flavor components (among them ethyl maltol showed the highest.). Ethyl maltol and coumarin were proposed to be the directly added components, however anisaldehyde and cinnamic aldehyde were proposed to come from the spice star anise; eugenol and cinnamic aldehyde are believed to come from clove and cassia, individually. In the second part of this experiment, efforts were made to re-formulate a new tea-goose seasoning powder. The market sold tea-goose powder sample B is accepted by the most of people. According to the analysis results of sample B, we reformulate a better formulation of tea-goose seasoning powder called formula 3. Through another survey, it was found that the distinction between sample B and the formula 3 was very small. In the third part of this experiment different producing processes for the preparation of tea-goose were conducted and compared. Referencing to the listed information, there are two methods of how to make a Tea-goose were used. The first one is referred from Shiehs' (1997) dissertation and another one was provided by the tea-goose producer. We combined the above two methods as the third one. We prepared tea-goose according to the above three methods. The results showed that the method provided by the tea-goose producer was the most popular accepted one. In the fourth part of this experiment, volatile compounds in tea-goose were analyzed. Analyzed data showed that sample B tea-goose seasoning powder contained four main chemicals, including ethyl maltol, cinnamic aldehyde, eugenol, and coumarin. Volatile compounds in formula 3 tea-goose seasoning powder contained 2-methyl phenol, 4-dimethoxybenzene, 4-ethylguaiacol, ethyl maltol, anisaldehyde, trans-anethole, cinnamic aldehyde, eugenol, methyl eugenol, coumarin, and elemicin as the major volatile compounds. The key flavors of tea-goose were found to be furfural, ethyl maltol, and 5-methyl furfural (furfural and 5-methyl furfural were proposed to generate in smoking process), ethyl lactate was considered to generate in soaking process, diacetyl, 2-acetylfuran, and 2-acetyl-5-methylfuran were considered to produce from the decomposition of carbohydrate during smoking, hexanal was considered to come from the lipid oxidation of tea-goose itself, linalool, trans-linalool oxide, and cis-linalool oxide were considered to come tea leafs, honey, and other spices used.

Keywords : x

Table of Contents

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