

FI-14

EVALUATION OF γ -RADIATION ON OOLONG TEA ODOR VOLATILES

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Tea is the most widely consumed beverage after water and is processed from tender shoots of *Camellia sinensis* (L.) and its mainly classified into green tea (unfermented), oolong tea (partially fermented), and black tea (fully fermented) according to the degree of fermentation. Oolong tea, possessing a taste and color somewhere between green and black teas, is manufactured predominantly in China and Taiwan. Among the benefits associated to oolong tea consumption are the increasing of energy expenditure (acting on weight loss), the prevention of cardiovascular disease, reduce the LDL oxidation, total cholesterol and triglyceride and may be beneficial in the prevention of coronary heart disease, anti-cancer, anti-oxidant, anti-inflammatory and anti-bacterial activity. Consumer acceptability of the beverage is mainly dependent on the flavor of the finished product. Flavor comprises principally taste and aroma. Non-volatile components are generally responsible for the taste, while volatile components give the aroma. A further industrialization and commercialization of these plants become a problem of public health. The presence of potentially toxigenic fungi can be found in these products, indicating a great potential for the presence of mycotoxins that can cause acute and chronic effects in different organs and systems of the human body. Ionizing radiation is one of the most effective means disinfecting dry food ingredients. This treatment can inhibit cellular division, like microorganisms, promoting a molecular structural modification. The aim of this study was to evaluate the gamma radiation effects on odor volatiles in oolong tea at doses of 0, 5, 10, 15 and 20kGy.

FI-13

SYNERGISTIC EFFECT OF γ -IRRADIATION AND BACTERIAL-FERMENTED DEXTROSE ON MICROBIOLOGICAL QUALITY OF REFRIGERATED PORK SAUSAGES

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The objective of this study was to evaluate the effect of the addition of the concentrated fermented dextrose PRO-LONG (FD; BSA Food Ingredients, Montreal, Canada), a natural antimicrobial product, combined with low dose γ -irradiation (1.5 kGy) on the microbiological quality of fresh pork sausages. The content in mesophilic, psychrophilic bacteria and *Lactobacillus* sp. were evaluated when fresh pork sausages were stored under refrigerated conditions. Mildly seasoned fresh pork sausages containing FD at different concentrations (0.25%, 0.5% and 0.75%) were prepared in a meat pilot plant and were irradiated using a UC-15A irradiator (MDS Nordion international Inc., Kanata, Ontario, Canada) equipped with a 60Co beta source. Microbial analysis showed that FD alone could reduce the growth rate of the psychrophilic and mesophilic bacteria during storage time without affecting the *Lactobacillus* content. The γ -irradiation treatment alone was able to reduce the initial psychrophilic and mesophilic bacteria by more than 2 log₁₀/g and kept the *Lactobacillus* population under the detection limit (100/g) throughout the experiment. Results also showed that FD was able to extend the shelf life of the sausages from 5 days up to 13 days. At day 13, FD or irradiation alone showed 2 log₁₀/g less mesophilic bacteria than the control. After combining FD and irradiation another reduction of the microbial count of 1 log₁₀/g was observed. When combining the irradiation treatment with FD results showed a reduced growth rate of the psychrophilic and mesophilic bacteria comparing to both treatments alone. This study demonstrated that FD addition could be beneficial for shelf life extension of sausages. However combination of FD with low dose gamma irradiation (1.5 kGy) would further more increase it by more than 3 days.