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JEERAPA LUKCOMPUN : NITRITE SCAVENGING ACTIVITY OF FOUR PLANT FIBERS INCORPORATED INTO FOUR DIFFERENT HEAT-PROCESSED FLOUR BASED FOODS. THESIS ADVISORS : KAEW KANGSADALAMPHI,Ph.D.,ANADI NITTITHAMYONG,Ph.D.,ORANONG KANGSADALAMPAI,Ph.D., 123 p. ISBN 974-661-788-5

The nitrite scavenging activity of fiber from ivygourd, pineapple core, rice bran and guava pomace was evaluated. Fiber was incorporated into flour, which was made into different heat-processed flour-based foods. Types of heat processing such as, baking, pan-frying, moist heating, and deep-frying were selected to evaluate the fibers' nitrite scavenging capability. The results of this study indicated that all fibers can be used as nitrite scavengers in flour-based foods, though adjustment of processing methods is necessary. Nitrite scavenging capability (NSC) under gastric like condition ranged from 2.09 to 5.89 μg nitrite per mg fiber. Nevertheless, the NSC of fibers was affected by heat processing. Baking seemed to have the least effect on the NSC of fiber whereas deep-frying decreased the NSC of the subject fibers. After processing, NSC of ivygourd fiber was highest. Surprisingly, the original NSC of guava pomace fiber was the highest, but after baking and pan-frying the NSC was reduced to be the lowest. The NSC of rice bran was reduced after all four-kinds of heat processing. It was found that before processing NSC of pineapple core was the lowest, but However, it showed an increase in inhibitory activity after the baking process. It is thus suggested that the consumption of raw and cooked vegetables as well as fiber-rich products will provide a good source of nitrite scavengers and can reduce the risk of obtaining toxicants derived from nitrite treated compounds which form during digestion in the stomach.