3836090 RANU/M: MAJOR: NUTRITION; M.Sc. (NUTRITION)
KEY WORDS : NITRATE / NITRITE / VEGETABLES / COOKERY
PRAPAPORN SAVARAJ : EFFECT OF COOKING PROCESSES ON THE LEVEL OF NITRATE AND NITRITE IN VEGETABLES. THESIS ADVISORS : SONGSAK SRIANUJATA,Ph.D., WANNEE KUSAMRAN,Ph.D., RODJANA CHUNHABUNDIT,M.Sc. 75 p. ISBN 974-661-721-4

Food, especially vegetables, is the principal source of human exposure to nitrate. The toxic effect of nitrate is due to the reduction to nitrite. The major toxic effect of nitrite is methaemoglobinemia which causes cyanosis especially in infants younger than 3 months old. In addition, the other important toxic effect of nitrite is to react with nitrosatable compounds to form *N*-nitroso compounds which are potent carcinogens. However, several studies reported the reduction of nitrate contents in vegetables after the cooking process. Therefore, the purpose of this study was to examine the alteration of nitrate and nitrite contents in vegetables after various methods of cooking for different amounts of time. Chinese cabbage, Chinese kale and Chinese convulvulus were cooked by boiling, frying and steaming in the same manner as in a household kitchen. After cooking, the vegetables and liquid obtained from cooking were collected and analysed for nitrate and nitrite contents by the colorimetric method.

The results showed that boiling can result in the greatest reduction of nitrate content and the reduction was statistically significant different from the other methods of cooking for all kinds of vegetables in the study. Loss of nitrate content in boiling was found to depend on the length of cooking time. Most of the nitrate lost was leached into cooking water. Chinese kale lost the most nitrate with mean reduction of 47.9% after boiling. There was no indication that nitrate would be converted to nitrite by the various cooking methods. It is recommended that boiling of vegetables is the best way to reduce nitrate content and decrease consumers'exposure to nitrate and nitrite.