

Title : THE STUDY OF LEAD QUANTITY IN ONE - PLATE DISHES  
ON CERAMIC WARES AT MUNICIPAL AREA , PHITSANULOKE

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This study was to determine the amount of lead extracted from ceramic wares. One - plate dish were used as the medium. The treatment combinations were 6 pH range x 2 temperature levels x 3 interval of time. Ceramic wares included 36 round shape bowls , 36 elliptical bowls , and 24 round shape plates with pink flower painting at the edge. One - plate dishes were Kluey Teaw (rice noodles with pork) and Rad - na (wide rice noodles with pork , and gravy place on top). The atomic absorption spectroscopy technique (AAS) was applied for lead measurement.

The results revealed that the lead content at low temperature , low pH (3.5 - 4.0) , and 20 minutes long , in Kluey Teaw on round shape bowls were higher than the content of lead of the standard level , 1 mg/kg of food , regulated by the Minstry of Public Health. Similarly , the lead content was also high at the conditions of high temperature , pH 3.5 - 4.0 and all interval of time.

For the elliptical bowl , the lead content which the conditions were low and high temperature , pH 3.5 - 5.0 and all interval of time was higher than the content of lead of the standard level. The lead content measured at the other conditions was lower than the content of lead of the standard level.

For the Rad - na in round shape plate , the lead content at the conditions of high and low temperature , pH 4.5 - 6.0 , and all the interval of time was below the content of lead of the standard level excepting at the other conditions.

The statistics were used to test the hypothesis. pH showed an effect on the lead contents dissolved from all types of ceramic ware. Temperature also influeneed to the lead contents dissolved from two types of ceramic ware ,round shape bowl and plate , but not for the elliptical bowl. In addition time showed an effect on the lead contents dissolved from both the elliptical bowl and round shape plate , but not for the round shape bowl.

The regression models also constructed to predict the lead contents dissolved from ceramic wares. The results indicated that pH , temperature , and time could be included in the models for prediction of the lead content dissolved from the elliptical bowl and round shape bowl. Moreover , the model for prediction of the lead content dissolved from round shape plate could be included pH and temperature , respectively.