Pantawat Nuantan 2009: Optimum Dietary Lysine and Energy Levels for Meat-type Duck (Cherry Valley-M3) Under The Evaporative-cooling House. Master of Science (Animal Nutrition and Feed Technology), Major Field: Animal Nutrition and Feed Technology, Department of Animal Science. Thesis Advisor: Associate Professor Nuanchan Paraksa, Dr.Agr. 66 pages.

Two experiments were conducted to determine the optimum dietary lysine and energy levels for meat-type duck (Cherry Valley - M3) under the evaporative – cooling house by using completely randomized design (CRD).In experiment 1, one thousand-nine hundred and twenty, one-day old Cherry Valley ducks were divided into 4 groups with 4 replications. Each replicate consisted of 120 ducks with an equal number of male and female and was randomized to feed one of the experimental diets containing 4 dietary lysine levels as 0.90, 1.05, 1.20, 1.35% and 0.65, 0.76, 0.87, 0.98% for the period of 1-14 and 15-45 days of age, respectively. It was found that during 1-14 days period, increasing of dietary lysine level above the recommendation of NRC (1.05-1.35%) improved ($P<0.05$) the growth performance such as weight gain, average daily gain and feed conversion ratio similarly to weight gain of male duck during 1-45 days of age. Whereas, during 15-45 and 1-45 days of age, no significantly different in weight of female duck and feed conversion among group were found. The carcass characteristic of both male and female ducks in term of breast meat ($P<0.0001$) and breast fillet ($P=0.007$) and wing ($P=0.13$) of male duck were significantly improved by increasing dietary lysine level whereas dressed weight and eviscerated weight were not significantly different ($P>0.05$). In experiment 2, were randomized to feed one of the experimental diets containing 1.05% and 0.76% lysine with the different ME level as 2,750, 2,825, 2,900, 2,975 kcal/kg and 2,850, 2,925, 3,000, 3,075 kcal/kg for the period of 1-14 and 15-45 days of age, respectively. It was found that increasing of ME in the diet did not effect ($P>0.05$) on the weight gain, average daily gain, feed intake and feed conversion ratio during 1-14 and 15-45 days of age. But the feed intake and feed conversion ratio decreased gradually, when the dietary ME increased. During the whole experimental period (1-45 days), no significantly different in growth performance and feed intake were found, whereas the feed conversion ratio was improved ($p<0.05$) by increasing of dietary ME. The dietary ME level did not have the significantly effect on the carcass yield of male duck but the breast meat and breast fillet yield of female duck decreased when the dietary ME was increased. In conclusion, the optimum dietary lysine and ME for Cherry valley duck under the evaporative cooling house were 1.05% and 2,825 kcal/kg diet for growing period (1-14 day of age) and 0.76% and 2,925 kcal/kg diet for finishing period (15-45 day of age) , respectively.

_____ _____ ___ / ___ / ___

Student's signature Thesis Advisor's signature