Kanokporn Saengkudrua 2015: Utilization of Cassava Mash as a Molt Diet for Induced Molting in Laying Hens. Master of Science (Animal Science), Major Field: Animal Science, Department of Animal Science. Thesis Advisor: Associate Professor Nirat Gongruttananun, Ph.D. 68 pages.

Study of utilization of cassava mash as a molt diet for molting in laying hens. An experiment was conducted using 260 H&N commercial hybrid hens (aged 95 wk) that were randomly assigned to one of five treatment groups: group 1 (control group) was provided with a layer ration and exposured to light 16 hours a day throughout the experimental period, whereas groups 2, 3, 4 and 5 were induced to molt in a windowless house by providing with cassava meal for 2 wk and exposed to an 8L:16D photoperiod. Thereafter, group 2 was returned to receive the layer diet and the lighting program of 16 hours per day. While groups 3, 4 and 5 had a recovery period in the windowless house for 1, 2 and 3 wk, respectively, and received a pullet developer diet before returning to the layer diet and exposure to light 16 hours a day. At the end of the molting program, the hematocrit value of group 3 was significantly less than those of groups 2, 4 and 5 ($P < 0.05$). Not significant differences in the ratio of heterophil to lymphocyte numbers and thyroxine or cortisol concentrations were found among the molted bird groups ($P > 0.05$). The molting program did not affect the weight of the thymus gland, adrenal gland, Bursa gland, thyroid gland, liver and spleen ($P > 0.05$). There were no significant differences among the treatment groups for the ovary weight, oviduct weight and length and number ovarian follicles. Femur and tibia weights of groups 3, 4 and 5 were less than those of group 2 ($P < 0.05$). The length of those bones of group 4 were significantly less than those of group 5 ($P < 0.05$). No significant difference was observed among the 4 molted treatment groups for breaking strength of the tibia bone. During wk 4-16 of the postmolt period, feed intake, egg production, egg weight and feed conversion ratio were similar among the experimental bird groups ($P > 0.05$). Neither the yolk color nor shell quality of hens in all groups were influenced by the molting program. However, at the end of the experiment, the albumen weight of group 5 was significantly greater than that of the other groups ($P < 0.05$). Throughout the experimental period, the mortality rate of the 4 molted groups was significantly less than that of the control group ($P < 0.05$). It was concluded that the molting program was an effective method for molting laying hens, except for improving shell quality. The results suggested that providing with a high-protein diet during the 3-week recovery period could improve albumen quality and livability.

_____ _____ ___/ ___/ __

Student's signature Thesis Advisor's signature