

Narawich Onjai-uea 2013: Meal Concentrate Substitution with Whole Cottonseed and Partial Mixed Ration (PMR) Roughage in Goat Feeding. Master of Science (Animal Science), Major Field: Animal Science, Department of Animal Science. Thesis Advisor: Mrs. Wiriya Loongyai, Ph.D. 88 pages.

The experiment was conducted to study the effect of meal concentrate substitution with whole cottonseed on growth performance and blood biochemical changes in fattening goat production. Twenty crossbred Anglo-Nubian-Native male goats, aged 6-18 months old and averaged initial weight at  $25.63 \pm 4.35$  kg, were randomly assigned into a Completely Randomized Design consisting 4 treatments with 5 replicates in each. All animals were received Partial Mixed Ration (PMR) as roughage *ad libitum* and supplemented with meal concentrate and 3 levels of meal concentrate substitution with whole cottonseed, viz. 0, 15, 20, 25%, respectively, for 60 days. The results showed that PMR can be used as quality roughage with meal concentrate and meal concentrate substituted with whole cottonseed on growth rate and total dry matter intake. Blood glucose, blood urea nitrogen, triiodothyronine, hemoglobin and hematocrit were found under normal between  $62.96 \pm 3.77$ - $72.45 \pm 5.22$  mg%,  $9.97 \pm 0.90$ - $17.56 \pm 0.90$  mg%,  $152.01 \pm 14.88$ - $179.68 \pm 12.84$  mg%,  $9.18 \pm 0.51$ - $10.12 \pm 0.51$  g/dl and  $28.75 \pm 1.08$ - $30.66 \pm 1.08$ %, respectively. The concentrations of  $C_2$ ,  $C_2:C_3$  and the digestibility of nutrients by AIA were significantly ( $P < 0.05$ ) different among treatments where the substituted whole cottonseed of 15% had the highest values. Feed cost per gain was significantly different among treatments ( $P < 0.05$ ), indicating that the substituted whole cottonseed of 25% had the lowest feed cost per 1 kg of body weight gain (52.76 baht/head).

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Thesis Advisor's signature

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