V. SUMMARY AND CONCLUSIONS

STUDIES OF NAPIER GRASS AS A GREEN FODDER FOR CALF FATTENING

The study was carried out to compare fattening of calves on Napier (elephant) grass as a sole green fodder and Napier gras with moderate allowance of concentrate mixture with the conventional fattening ration (Concentrate + rice straw).

Thirty male calves were assigned at random and grouped three homogenous groups of ten calves each. During the first fattening period (18 weeks), the three groups of calves received their experimental rations(A) Napier grass alone, (B) Napier grass plus concentrate mixture, and (C) rice straw plus concentrate mixture. In the subsequent to 10 weeks (the second period), calves in all groups received a finishing ration consisting of rice straw and concentrate mixture. Live body weight changes were recorded biweekly throughout the 196 day whole experimental period. A digestibility trial was conducted to determine the digestibility of the three ration (A) , (B) and (C) outlined above .

Average live body weights of calves at the beginning of the experiment were 177.5, 177.4 and 176.9 kg for the three groups, respectively. At the first experimental period, average daily DM consumption was 4.97, 4.04 and 5.62 kg for the three experimental rations, respectively. Feed conversion valuse experessed as kilograms SE/kg weight gain were 5.828, 3.582 and 5.508 kg. production

efficiency values were 0.172,0.279 and 0.181 kg weight gain/kg S.E. Average daily weight gains were 0.517, 0.666 and 0.525 kg for calves fed rations A, B and C, respectively. The differences in daily weight gains were statistically sighificant ($P<0.05$).

At the second experimental period (finishing period) average daily DM consumption was 8.12, 8.44 and 8.13 kg for rations A, B and C,respectively. Feed conversion values expressed as kilograms SE/kg weight gain were 4.919, 5.802, and 4.674 kg. Production efficiency values were 0.203, 0.172 and 0.214 kg weight gain/kg SE and average daily weight gains were 0.850 0.748 and 0.896 kg for calves fed rations A ,B and C, respectively.

Average daily DM consumption for the total experimental period were 6.09, 5.16 and 6.51 kg/calf for rations A, B and C,respectively . Feed conversion values expressed as kilograms SE/kg weight gain were 5.393, 4.435 and 5.102 kg. production efficiency values were 0.185 0.225 and 0.196 kg weight gain/ kg SE, Average daily weight gains were 0.636, 0.697 and 0.659 kg for calves fed rations A, B and C, respectively.

Economical efficiency values expressed as the ratio between price of weight gain and cost of feed consumed . The values were 4.46 , 4.67

and 3.86 for calves fed rations A,B and C, respectively. Cost of feed consumed to produce one kg weight gain were 24.64, 23.55 and 28.50 P.T for rations A,B and C, respectively.

Digestion coefficients of DM, CP, EE, CF and NFE for Napier grass (ration A) were 71.59, 73.66,75.53, 77.15 and 74.13% respectively. The corresponding values for Napier grass plus concentrate mixture (59:41% on DM basis) were 63.80, 72.73,68.06,62.78 and 71.56%, respectively, and those for concentrate mixture plus rice straw (59:41% on DM basis) were 68.63, 75.31 56.74, 59.12 and 72.90%, respectively.

The feeding values of the fresh Napier grass expressed as SE, TDN and DCP were 10.78, 12.44, and 1.69% respectively. When expressed on DM basis, these values were 60.50% SE, 69.80%, TDN and 9.47% DCP. The corresponding values for Napier grass plus concentrate mixture (ration B) on DM basis were 59.17% SE, 66.49% TDN and 10.76% DCP. The feeding values as a SE, TDN and DCP for concentrate mixture plus rice straw (ration C) on DM basis were 51.96,63.60& 8.76%,respectively.

Conclusions:

Based on the findings of this investigation, it could be concluded that Napier grass is a palatable forage, well digested and has high feeding values when fed to calves either alone or with limited amounts of concentrate mixture. Addition of a moderate allowance of concentrate to Napier grass improve the production efficiency and consequently improve weight gain. Using Napier grass in summer for fattening calves has improved economical efficiency and effectively decreased the cost of meat production. It could be recommended that summer forage crops be utilized in feeding cattle in Egypt to solve the problem of summer feeds shortage, and in the meantime to save considerable amounts of concentrates.