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THE EFFECTS OF TWO DIETARY LEVELS OF PROTEIN
AND TWO SYSTEMS OF HOUSING MANAGEMENT
ON THE GROWTH AND PERFORMANCE
OF DAIRY CALVES

HERMAN REYES VALERO

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ABSTRACT

Herman R. Valero, University of the Philippines at Los Baños,
May 1980. The Effects of Two Dietary Levels of Protein and Two
Systems of Housing Management on the Growth and Performance of
Dairy Calves.


Major Professor: Dr. Alberto Y. Robles

Twenty-four crossbred (Holstein x Red Sindhi) yearling calves were used in a 2 x 2 factorial in a randomized complete block design (RCBD), to determine the effects of two protein levels (14 percent and 16 percent crude protein (CP)) and two systems of housing management (indoor and outdoor) on the growth and performance of dairy calves.

The results showed that calves fed the ration with 16 percent CP consumed significantly more protein ($P \leq .01$) and dry matter ($P \leq .05$) than those fed with 14 percent CP. Likewise, the same group of calves consumed more calf ration. However, the protein levels and systems of housing management did not show significant ($P > .05$) effects on calves' roughage intake, daily liveweight gain, height at wither, heart girth, body length and physiological responses. No significant ($P > .05$) differences were observed on total cost and daily cost of feeding. Similarly, the cost of feeding to produce

a liveweight gain as affected by two protein levels and two systems of housing management is not significant. Furthermore, adoption of feeding calves ration with 16 percent CP coupled with outdoor system of housing management is profitable as compared to the rest of the treatment combination studied, because it involved the least cost to produce a kilo of liveweight gain and higher weight gain.

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INTRODUCTION

The most important aspect of dairy herd management is the raising of calves. This involves rearing and feeding of calves enough to attain a steady growth but not to fatten them (Campbell and Marshall, 1975). It is an important means of replacing animals that leave the herd each year through involuntary culling, reproductive difficulties, udder diseases, death and old age. The calves used for replacement will determine the profitability or failure of the herd and provide an answer to the great needs of the Filipino people for milk.

At present, the National Dairy Development Program of the government plans to increase dairy production by 23,236 metric tons during a five-year period or its equivalent in ten years (NEDA, 1977). The increase in domestic production is expected to eventually decrease dairy imports by 30 percent in fifteen years. If this project will materialize, the government might have savings and solve the problem of malnutrition.

However, in order to attain this goal, efforts should be exerted to improve replacement stocks. Breeding, nutrition and management are among the few important factors that must be considered to alleviate livestock production. As growth and development of newly-born calves depend entirely on proper nutrition and management