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Improving the Profitability of the Rabbit Meat Industry in Barbados

Introduction

The livestock sector is extremely important here in Barbados. The sector is focused on the rearing of dairy cattle, poultry (both meat and eggs), pigs, sheep, beef, goats, veal and rabbits. In recent years the rabbit meat industry here in Barbados has started to show signs of decline, and is essentially made up of small scale breeders in their backyards. The industry's dormant status is a result of prolonged inbreeding of the rabbits on the island. In 2014, in collaboration with the BITS program at McGill University and the University of the West Indies, the Greenland Livestock Research Station, working under the Ministry of Agriculture here in Barbados, has imported a line of New Zealand Red rabbits with the hope of diversifying the present rabbit gene pool on the island and hoping to help push the industry to its potential tremendous expansion and development.

The Project

The overall goal of this project was to achieve ways to aid improving and expanding the Barbados rabbit meat industry through preliminary crossbreeding experiments and feed trials. The project was mainly held at the Greenland Livestock Research Station located in the parish of St Andrew, Barbados. Our hopes with this project were to study whether any of the hybrids are particularly advantageous when the New Zealand Red is crossbred with different rabbit breeds under the current agro-environmental conditions of Barbados. We also wanted to conduct an introductory comparative analysis of the growth rates of rabbits consuming different feeds and to provide local farmers with preliminary data that could indicate whether a cheaper feed is possible (and some of the trade-offs related to growth) which could potentially encourage the growth of the rabbit meat industry in Barbados.

Methods

Crossbreeding experiment:

The experiments were done in collaboration with Mr. Dane Toppin, a local rabbit farmer. We conducted a crossbreeding experiment where a New Zealand Red male was crossed with females of five different rabbit breeds, including the New Zealand Red, New Zealand White, New Zealand Black, English Spot and Dutch. In order to conclude which rabbit breed cross produced the "best" hybrid rabbit for production in the rabbit meat industry, different productivity traits that rabbit breeders try to optimize in this industry were measured. We began gathering data at the time of weaning; when the kits were about 5 weeks old. We had hoped to measure litter size, kit survival rate, growth rate, daily feed intake, feed conversion ratios, live weight at both 105 and 120 days, slaughter weight and finally chilling temperature and time. Unfortunately, due to our restricted time frame not all measurements were possible.

Preliminary feed trials:

This experiment involved investigation of two alternate feeds: sweet potato slips and mulberry leaves in addition to rabbit pelleted commercial feed. We worked with two groups of rabbits, Group A was made up of fifteen recently weaned kits from three different mothers (about 5 weeks old) and Group B consisted of eight older rabbits from two different mothers (about 12 weeks old). Both groups consisted of kits that were both New Zealand Red pure breeds and crossbreeds and these were divided up randomly. The feed trials each ran for 6 weeks. The rabbits were weighed at the start of every week to study whether using alternate feeds affected the growth rates of the rabbits.

Results, Conclusions and Recommendations

Crossbreeding experiment:

The total number of crosses were few. However, the NZB/NZR cross gave the highest kit survival ratio of 100 %, while both the Dutch/NZR and English Spot/NZR crosses produced a larger litter size at birth and at weaning. The Group A feeding trial ran for 8 weeks in total. The control group (fed 100 % conventional feed) had the highest average growth rates and highest average slaughter weight. However, the sweet potato group (fed 50 % sweet potato slips and 50 % conventional feed) managed to keep up with our control group for several weeks of the feed trial before the difference in average weight became more apparent. Sweet potato appears to be a promising feed component for rabbits. In the Group B trial, the rabbits fed mulberry (fed 80 % mulberry leaves and 20 % conventional feed) showed the slowest growth rates. This is most likely due to several reasons: the most significant of which being the high forage to conventional feed ratio. We noticed that the rabbits were pickier with the mulberry leaves than they were with the sweet potato slips and only enjoyed the leaves when they were 1 or 2 days old, if we fed the group leaves that were older they would simply not eat them, and so the rabbits were not fed the daily amount they needed. We only collected data with group B for four weeks; this was because the rabbits reached slaughter weight.

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