Using real-time generated rate-of-gain to determine anthelmintic need in pastured Blue Faced Leicester Maryland lambs.

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## Project Description

The proportion of animals receiving anthelmintics is a principal factor determining the rate of resistance development. In this study we looked at three variables to assess how feasible it would be to use rate of gain to know which animals should be treated. First, we compared rate of gain to the lambs FAMACHA© score. Second, we looked at the timesavings by comparing rate-of-gain decision making with RFID tags versus FAMACHA© examination. Third, we sent fecal samples from a group of lambs needing the least number of treatments, and a group of lambs the most number of treatments to compare resistance rates using the DrenchRite Assay.

## Project Summary

35 Blue Faced Leicester born in the end of April through early May were tagged with electronic identification (EID) tags. Starting at weaning, the lambs were weighed on 7 day increments, with FAMACHA scores being assessed every other weighing (14 day increments). A digital scale head with Bluetooth capabilities, stock recorder (Shearwell data) and FarmWorks software calculated the rate of gain (ROG) in real-time as lambs moved through the weigh crate. Lambs with a ROG of less than 0.3 lbs. per day, or with a FAMACHA© score of 4 or 5 were drenched with both Cydectin and Prohibit according to the directions for each anthelmintic independently. At week 18 fecal samples from the 8 lambs requiring the least number of treatments and the 8 lambs requiring the most number of treatments were pooled and the two pooled samples submitted to University of Georgia for the DrenchRite test.

## Discussion

The time required to work the lambs decreased as they became familiar with the routine and corral system. Lambs were on grass and all together throughout the 18 weeks with access to self feeders with hay and automatic waterers. In 2017 we had an early Spring with grass with ewes prior to weaning. Potential factors contributing to low ROG’s was feeding once a day in the beginning of the study rather than free choice feed (notable increase in ROG), and instances of coccidiosis. ROG is sensitive to time of day/fullness of rumen and weather factor (i.e., wet fleeces).

2 lambs were lost due to parasites. The project outcomes are based 23 lambs that were retained for full length of the study as some lambs (neither top or bottom performers) were sold when ready for market.

## Project Outcomes

* Timesaving: Using real-time ROG reduced the time to evaluate lambs for drenching need by 50%
* # of drenches (18 weeks):
	+ The lowest percentage drenched was the day of weaning at 4% of lambs drenched
	+ The highest percentage of weaning was the week after weaning at 91% of lambs drenched
* Comparison to the FAMACHA© score: 70% of the time the determination to drench using the ROG factor was consistent with drenching animals with a 4 or 5 FAMACHA© score
* Anthelmintic resistance: There was no difference in the resistance rates between the co-located most and least drenched lambs.

## Recommendations

* Collect data to determine what your rate of gain should be
* Breed
* Management (Pasture, Creep, Dry Lot)
* Sex
* Periodically check lambs that do not meet your ROG using the FAMACHA technique
* Consider lowering the ROG if you have a confounding issue
* Weaning
* Coccidia
* Every 2 weeks should be sufficient
* Allow treatment to be effective