Control of Horn Flies (*Haematobia irritans*) and Gastrointestinal Nematodes and Its Relations With Growth Performance in Stocker Cattle

DeRouen et al., 2010. Louisiana State University

The objective of this study was to assess the effects of horn fly and gastrointestinal (GI) nematode control on the performance of stocker cattle grazing Bermudagrass in Louisiana. A total of 168 (56 per trial) weaned calves were available for three trials. Stocker cattle were stratified by sex and body weight and randomly assigned to two replicate treatment groups. The treatments were 1) no horn fly or GI nematode control, 2) horn fly control administrated with insecticidal ear tags, sprays and pour-ons, 3) GI nematode control administrated every 28 days with fenbendazole and 4) both horn fly and GI nematode control. Lengths of the trials were 84, 98 and 112 days for trials 1, 2 and 3, respectively, and trials were initiated in early to mid-May of each year.

- Stocker cattle treated for horn flies had lower fly counts than control cattle for each trial; however, counts for treated stocker cattle ranged from 42 to 62 flies per side.

- In trials 1 and 2, stocker cattle treated for both horn flies and GI nematodes had 0.31 and 0.51 pounds greater ADG, respectively, compared with untreated stocker cattle.

- Under the conditions of this study, even with a lack of effective horn fly control, improved growth rates were achieved for stocker cattle when treated for both external and internal parasites.

- Improvement in stocker growth performance was achieved when the animals were treated for both horn flies and gastrointestinal nematodes.

Averaged over the three trials, stocker cattle treated for both horn flies and gastrointestinal nematodes responded with approximately 29 pounds total body weight gain advantage over untreated cattle. At current prices in the United States, investing in the cost for both treatments would result in over a four-fold return for beef stocker producers.
Extension Demonstrations: On-Farm Wheat Yield Responses to Grazing and Survey Thoughts on Establishment and Enterprise Diversification
Gadberry et al., 2010. University of Arkansas

On-farm case studies were established in Arkansas to examine the effects of grazing on wheat grain yield and to survey producers and educators about their thoughts on wheat establishment methods and enterprise diversification. Eight demonstration sites from 2005 to 2008 established wheat for grazing. Grazing pressure ranged from 0.4 to 3.4 animal units (au = 1,000 pounds body weight) per acre. Grazing restriction cages were assembled in the fall before grazing and in the spring near first hollow stem to examine the effects of grazing on wheat. Either wheat was harvested or plant seedhead counts were substituted in the case of plant sterility or heavy bird predation.

• Overall, grazing reduced average plant counts by 24% among four demonstration sites that could not be harvested.
• Two of the four sites observed reductions in plant counts.
• Four sites were harvested for grain. Wheat grain yield averaged 2,644 pounds/acre and was not affected by grazing.

Ninety-one percent of producers attending wheat grazing field days were implementing establishment methods other than clean tillage. Producers and educators indicated that enterprise diversification will be important to long-term sustainability of agriculture in the United States; however, educators responded with a unanimous certainty, whereas the producers responded with less certainty (greater variation). In addition, producers indicated they were more likely to adopt alternative tillage systems and diversified production systems because of economic enhancement, whereas educators were more likely to recommend these systems for environmental enhancement. This case study demonstrations suggest that complementary systems of wheat for grain and grazing can be a functional, albeit rare, agricultural production system in Arkansas.

Effects of Commingling Beef Calves From Different Sources and Weaning Protocols During a Forty-Two-Day Receiving Period on Performance and Bovine Respiratory Disease
Step et al., 2008. Oklahoma State University

The study objective was to determine health and performance of ranch calves from different preconditioning strategies during a 42-day receiving period when commingled with calves of unknown health histories from multiple sources. Steer calves from a single-source ranch were weaned and immediately shipped to a feedlot (BW = 545 ± 64 pounds) and weaned on the ranch for 45 days before shipping but did not receive any vaccinations (WEAN45, initial BW = 509 ± 57 pounds) or weaned, vaccinated with modified live viral vaccine and held on the ranch for 45 days before shipping (WEANVAC45, initial BW = 604 ± 46 pounds). Multiple-source steers were purchased through auction markets (BW = 525 ± 29 pounds), and upon receiving, a portion of ranch-origin steers from each weaning group was commingled with a portion of cattle. Calves of single source and weaned and shipped directly to the feedlot, WEAN45 and auction market purchase were vaccinated on arrival at the feedlot.

• Ranch-origin calves tended to have greater ADG than ranch-origin calves commingled with market calves or auction-market-purchased calves, although ADG was not affected by weaning management.
• Across the 42-day receiving period, dry matter intake was not affected by cattle origin. However, auction-market-purchased calves, WEAN45 and WEANVAC45 calves consumed more dry matter than the weaned and immediately-shipped-to-a-feedlot calves.
• Gain efficiency was not affected by treatment.
• Ranch-origin calves were less likely to be treated for bovine respiratory disease than auction-market-purchased calves; ranch-origin calves commingled with market calves were intermediate.
• Calves that were retained on the ranch after weaning (WEAN45 and WEANVAC45) were also less likely to be treated than auction-market-
purchased calves or the weaned and immediately-shipped-to-a-feedlot calves.

- As expected, differences in morbidity related to differences in health costs. Calves of WEAN45 and WEANVAC45 had lower health costs than auction-market-purchased and the weaned and immediately-shipped-to-a-feedlot calves.

## Evaluation of Four Different Methods of Calf Birth Weight Data Collection

Parish et al., 2009. Mississippi State University

Reporting accurate calf birth weight is important for accurate calculation of birth weight and calving ease expected progeny differences. Calf birth weight information is used by many cow-calf producers as an indicator trait for calving ease in animal selection and culling decisions to minimize the risk of dystocia in their herds. The objectives of this study were to 1) evaluate the accuracy of the following birth weight collection methods: estimation via visual appraisal, estimation using hoof circumference tapes, measurement with handheld hanging spring scales and measurement using digital scales, and 2) determine if visual birth weight estimations change in accuracy with increasing operator experience as the calving season progresses. Within the first 24 hours of life, birth weight estimates and measurements were collected on each calf \( n = 587 \) during routine calf tagging and processing over a spring and autumn period at each location.

- Results indicate that birth weight records can vary because of the birth weight collection method used.
- When birth weight levels were examined, visual estimates and hoof tape measurements tended to underestimate high birth weights, whereas hoof tape measurements tended to overestimate low birth weights.

Birth weight data collection via either spring or digital scales resulted in more accurate measurements.

## The Impact of Reducing the Length of the Calving Season

Troxel et al., 2010. University of Arkansas

Reducing the length of the calving season can be the first step toward improved beef production efficiency. The objectives of this demonstration were to reduce the length of the calving season and to document the production and economic impact when converting a long calving season (> 200 days) to a short calving season (< 90 days). A three-part plan was developed for six cow-calf herds to reduce the length of the calving season.

- The average number of years to reach the cooperator’s desired cowherd calving season was 3.8 ± 0.75 year (mean ± SD).
- The percentage of cows calving during the desired calving season was higher for the final year compared to the benchmark year \( 92.0 ± 11.66\% \text{ vs.} 46.3 ± 14.01\% \), respectively.
- The mature cow calving percentage did not change from the benchmark year to the final year \( 89.2 ± 6.05\% \text{ and} 87.2 ± 9.47\% \), respectively.
- The average length of the calving season decreased from 273.3 ± 84.88 days in the benchmark year to 85.2 ± 4.75 days in the final year.
- Due to the limited number of farms and large variability, there were no differences for herd break-even, specific costs/animal unit and income over specified costs/animal unit from the benchmark year to the final year.
- When comparing means, break-even decreased 30% from $0.62 ± 0.22/pound to $0.44 ± 0.24/pound from the benchmark year to the final year, respectively.
- Specified costs/animal unit decreased 40% from $209.70 ± 145.68 to $126.20 ± 40.41, whereas income over specified cost improved 100% from $93.00 ± 68.27/animal unit to $189.70 ± 133.50/animal unit, from the benchmark year to the final year, respectively.
A short, controlled calving season forms the cornerstone for additional prudent management practices. Without a short calving season (≤ 90 days), opportunities for increasing production efficiency and reducing the cost per calf weaned are limited. These results provided evidence farms increased beef production efficiency and improved profitability by decreasing the length of the calving season.

### Evaluating Residual Feed Intake Relative to Other Traits Associated With Selection

G. D. Cruz et al., 2010. University of California, Davis

Even though the concept of residual feed intake is well accepted, several questions remain regarding other traits that may be associated with selection for decreased residual feed intake. These include dry matter digestibility, carcass composition, profitability and performance. The objective of this study was to investigate the difference in those traits between low- and high-residual feed intake cattle. Sixty Angus x Hereford crossbred steers (651 pounds of initial body weight) were fed a corn-based finishing ration (1.68 Mcal of NEm/kg, 13% crude protein on a dry matter basis) during two periods of 60 days each. The 15 greatest and least residual feed intake steers were classed as high- and low-residual feed intake groups.

- There were no differences between low- and high-residual feed intake groups for days on feed (162 vs. 168 days), slaughter weight (1,106 vs. 1,124 pounds), hot carcass weight (697 vs. 693 pounds), ribeye area (11.9 vs. 12.0 inches²), backfat (0.48 vs. 0.47 inches), kidney, pelvic and heart fat (3.1 vs. 3.7%), quality grade (average Choice for both groups) or carcass fat (32.4 vs. 33.1%).

- Visceral organ masses and abdominal fat were similar for low- and high-residual feed intake groups (71 vs. 69 pounds and 83 vs. 81 pounds, respectively).

- These results do not support the existence of major differences in composition and organ mass between low- and high-residual feed intake steers at slaughter.

- The residual feed intake grouping had a significant effect on dry matter intake, gain:feed and residual feed intake values.

- Stepwise regression showed that gain:feed alone or dry matter intake and average daily gain together explained 98.5% of the variance in cost of body weight gain, whereas residual feed intake alone explained only 18%.

We conclude that RFI is less useful than gain:feed as an indicator of feedlot efficiency and profitability.