



Research Update

► Summaries of current beef cattle research

CAST issue paper examines debatable information regarding animal agriculture

Animal agriculture is bad — or at least that seems to be the message emanating from certain groups and individuals. Some mistakenly believe that animal agriculture takes away human food supplies and wastes resources — this general message can be misconstrued or misused. In a new Council for Agricultural Science and Technology (CAST) Issue Paper, scientific experts address the knowledge gap that exists as to the quantity of human food and fiber byproducts used within animal agriculture. A task force of authors and reviewers led by Jude Capper examines the facts and

provides science-based research to support credible information about the “feed vs. food” issue.

The global livestock industry faces considerable challenges as the population grows, and demands for more food must be aligned with concerns about the environment, economy and sustainability. Many do not realize the productivity gains made by modern practices, byproduct feeds and technology.

Global animal agriculture provides safe, affordable, nutrient-dense foodstuffs that support human health and well-being as part of a balanced diet, as well as many byproducts that benefit humans.

Livestock production is important in

the economic and social sustainability of developed and developing countries alike.

Large areas of land are incapable of supporting the production of human food crops. Terrain, soil type and climate render the majority of land currently used for grazing unsuitable for production of vegetable-based foods, yet forages can be efficiently converted by ruminant animals into meat and milk products.

The paper emphasizes that improved communication is needed between livestock production stakeholders and the consumer to further a better understanding of the economic, environmental, nutritional and social advantages conferred by animal agriculture on a global and regional basis.

The paper can be viewed at www.cast-science.org/publications/?animal_feed_vs_human_food_challenges_and_opportunities_in_sustaining_animal_agriculture_toward_2050&show=product&productID=278268.

Source: CAST.

Effects of infrequent dried distillers' grain supplementation on spring-calving cow performance

Pregnant Angus-cross cows (n = 120) were fed dried distillers' grains with solubles (DDGS) as a protein supplement daily, every three days, or every six days from Dec. 27, 2011, through March 20, 2012. All cows were maintained together in a common native-range pasture, sorted daily for feeding, and provided the equivalent of 0.5 pound (lb.) crude protein per cow per day in the form of DDGS (29.5% crude protein). Cow body weight and body condition scores were collected every 28 days throughout the duration of the study.

Supplementing cows with protein as infrequently as every six days did not negatively affect cow body weight or body condition score. Producers can reduce cost using DDGS as an inexpensive protein source and can reduce labor and fuel costs with infrequent delivery.

Source: B. Bennett, J. Waggoner, J. Jaeger, A. Sexten, K. Olson
Kansas State University

Performance of cows receiving DDGS daily, at 3-day intervals, or at 6-day intervals

Item	Supplementation interval		
	Daily	3-day	6-day
No. of cows	38	31	37
Initial wt., lb.	1,241.7	1,256.4	1,239.6
Calving wt., lb.	1,243.3	1,256.4	1,247.0
Wt. change, lb.	1.5	0.3	7.4
Turnout wt., lb. ¹	1,312.8	1,329.2	1,301.2
Body condition score ²			
Initial	5.07	5.18	4.97
Calving	5.28	5.31	5.16
Change	0.21	0.13	0.19
Calf wt., lb.	84.6	86.9	83.4
Avg. calving date	3/24/2012	3/22/2012	3/22/2012

¹Weight at turnout onto summer native-range pasture (May 7, 2012).

²Scale of 1 to 9; 1 = extremely emaciated, 9 = extremely obese.

Effect of bale feeder type and monensin on performance of wintering cows

Cows initially averaging 1,087 pounds (lb.) and a 5.2 body condition score (BCS) were fed 3 lb. per day of a 36% crude protein (CP) cottonseed-meal-based pellet, either with or without 200 mg per head monensin (Rumensin®). Across both supplements, the four types of round-bale hay feeders used (and the resulting percentages of hay loss) were:

- conventional open-bottom steel ring (20.6%)
- sheeted-bottom steel ring (12.7%)
- polyethylene-pipe ring (21.5%)
- modified-cone feeder (5.6%)

Monensin supplementation significantly improved weight gain, condition score change and final body condition. The authors concluded using a modified-cone feeder and supplementing with monensin improved performance and reduced cost.

Source: Stephen Hammack
September Beef Cattle Browsing newsletter
J. Animal Sci. 91 E-Suppl. 1:4

Timing of BVD vaccination vs. response

A group of 1,004 male and female fall- or spring-born Angus calves born in three consecutive years were used in this study. Calves were vaccinated with a modified-live product containing antigens against infectious bovine rhinotracheitis (IBR), bovine respiratory syncytial virus (BRSV), parainfluenza-3 (PI₃), and bovine viral diarrhea virus Types 1 and 2 (BVD I and BVD II). An initial vaccine was given, followed three weeks later by a booster vaccination. No calves testing positive for BVD persistent infection (BVD-PI) were in the study. At time of first vaccination, fall-born calves averaged 107 days of age and 271 lb.; spring-born calves averaged 149 days and 359 lb.

Half of the calves were weaned at initial vaccination and half were weaned at booster vaccination. To measure antibody levels, blood serum was collected three weeks before initial vaccination, at initial vaccination, at booster vaccination, and three weeks after booster vaccination. Antibody levels were higher as age of dam increased. The level of maternal antibodies present at the time of vaccination reduced initial, booster and overall antibody responses to vaccination. Calves weaned at initial vaccination had greater final antibody level, initial response and overall response to vaccination than animals weaned at booster vaccination.

The authors concluded that:

1. Calves from younger cows need to be vaccinated at an earlier date.
2. Older calves need to be vaccinated at an earlier date than younger calves.
3. If weaning and vaccination are done at the same time, calves should receive the initial vaccination when they are weaned.

*Source: Stephen Hammack
September Beef Cattle Browsing newsletter
J. Animal Sci. 91:4440*

Timing of prostaglandin administration in timed AI

A study was conducted using 2,465 British or British-Continental postpartum cows in 13 herds located in eight states. Within-herd averages ranged from 3.6 to 5.9 years of age, 4.5 to 5.9 BCS, and 53 to 88 days postpartum. All cows were subjected to the CO-Synch +

CIDR® protocol with one of the following prostaglandin F_{2α} (PGF) alternatives:

- ▶ 2 doses PGF (25 mg per dose) eight hours apart, first dose at CIDR removal (2P8);
- ▶ 2 doses PGF (25 mg per dose) in two injection sites at CIDR removal (2P); and
- ▶ 1 dose PGF (25 mg per dose) at CIDR removal (1P).

All cows were artificially inseminated (AIed) 72 hours after CIDR removal. In five herds, any cows returning to estrus were AIed again; in eight herds cleanup bulls were used. Fixed-time AI pregnancy rates were significantly higher for 2P8 (55%) than 1P (48%), with 2P (51%) not significantly different from 2P8 or 1P. Rates were significantly higher for cycling cows

and for those 3 years old or older. Overall pregnancy rates did not significantly differ among the three groups, but was significantly higher in cows 3 years old or older.

Since the 2P procedure did not significantly increase fixed-time pregnancy over 1P and the 2P would have higher treatment cost, there would be no advantage for 2P. The 2P8 procedure could be advantageous over 1P if the higher fixed-time pregnancy rate was worth more than the extra treatment and labor cost of 2P8.

*Source: Stephen Hammack
September Beef Cattle Browsing newsletter
J. Animal Sci. 90:4814*



CAB internship, scholarship deadlines noted

College sophomores or juniors who understand the cattle business and have a passion for effective writing could be the next interns with the world's leading beef brand.

Certified Angus Beef LLC (CAB) offers paid positions for those who will be juniors or seniors during the internships from next summer into spring 2015. Students with a strong writing background majoring in ag journalism or animal science/communications may apply for the 10- to 12-week summer position or part-time school terms.

Specific dates will be determined to coincide with academic semesters and all internships are available for college credit. The fall position may be offered as renewable through spring but depending on applicants, a separate spring internship may be offered. Interns

can work from home or from the CAB Supply Development office at 1107 Hylton Heights in Manhattan, Kan.

Summary of deadlines:

- ▶ Nov. 25, 2013 – CAB Industry Information writing internship
- ▶ Dec. 6, 2013 – CAB Colvin undergraduate scholarship
- ▶ Jan. 10, 2014 – CAB Colvin graduate scholarship

Applications are due by Nov. 25, 2013, for the summer 2014 and/or school-year 2014-2015 positions. Apply online at <http://corporate.certifiedangusbeef.com/recruiting> by submitting a brief cover letter, résumé and three writing samples. For more information contact Miranda Reiman, CAB assistant director of industry information, at 308-784-2294 or mreiman@certifiedangusbeef.com.

CAB's Colvin Scholarship Fund will award six or more scholarships in 2014 totaling at least \$20,000. The funds will be split among five undergraduate scholarships — in the amounts of \$5,000, \$4,000, \$3,000, \$2,000 and \$1,000 — and a \$5,000 graduate-level scholarship.

College juniors and seniors who have shown commitment to the beef industry, either through coursework or activities, are encouraged to apply by the Dec. 6, 2013, deadline. Applications are evaluated on involvement, scholastic achievement, communication skills and reference letters. The graduate-level scholarship will be awarded to a full-time master's or doctorate student conducting research related to high-quality beef production. Applications for that award are due Jan. 10, 2014.

For more details, interested students should go online or contact Trudi Hoyle, CAB, at 800-225-2333 or thoyle@certifiedangusbeef.com.

— by CAB Staff