

those presented for their initial examination ($18.2 \pm 1.8\%$). Similarly, a greater ($P < 0.01$) proportion of mature bulls that were presented for retesting ($38.6 \pm 2.7\%$) failed examinations compared with those presented for their initial examination ($9.4 \pm 0.7\%$). Failure rates were similar ($P = 0.62$) among groups of yearling bulls tested as part of a breeding herd ($20.9 \pm 18\%$) or production sale ($23.9 \pm 2.6\%$). A greater ($P \leq 0.02$) proportion of yearling bull failures were related to semen morphology or penile warts compared with mature bulls, whereas a greater ($P < 0.01$) proportion of mature bull failures were related to other penile injuries/defects or issues with feet and leg conformation. The BullTest system provided an excellent platform to summarize results of prebreeding reproductive evaluations in beef bulls.

Key Words: breeding soundness examinations, bulls, reproductive management

doi: 10.2527/msasas2016-060

061 Perceptions of crop consultants and producers in Nebraska on grazing corn residue. J. L. Cox^{1,*},

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This study was designed to better understand perceptions and concerns of crop consultants and producers in Nebraska regarding grazing corn residue. Survey participants were crop consultants (234/940 = 25% return rate) and crop producers (130/545 = 24% return rate). Online survey software (Qualtrics) was used to create, distribute, and store data from the surveys, which were distributed using an electronic mailing list of consultants and producers developed by the University of Nebraska–Lincoln extension educators. The survey indicated that 76% of consultants influenced $\geq 4,000$ acres of sprinkler-irrigated and rain-fed cropland with about 50% under no-till management. Seventy percent of producers farmed between 81 and 1618 ha of sprinkler-irrigated and rain-fed cropland with about 70% under no-till management. Regarding grazing practices, 82% of consultants recommended grazing corn residue but only 52% of producers allowed corn residue grazing. Thirty-seven percent of producers did not allow grazing due to concerns of soil compaction, inconvenience (lack of water, fencing, and land/equipment damage), and lack of access to livestock for grazing. In regards to the impact of grazing on subsequent corn and soybean yields, about 50% of producers stated that grazing had “no impact” and about 33% stated that grazing increased yield. Producers that allowed corn residue grazing perceived that grazing residue increased subsequent corn ($P < 0.01$) and soybean ($P = 0.02$) yield more

than producers that did not allow grazing. From a question that allowed respondents to select “all that apply,” 56% of consultants and 44% of producers reported receiving information related to yield and corn residue grazing from their own observation. Forty-eight percent of consultants and only 25% of producers received information regarding yield and corn residue grazing from university extension programs. We hypothesized that consultants would recommend against grazing corn residue, but the survey results suggested otherwise. Almost 40% of producers were not allowing grazing despite the majority of consultants recommending it. Overall, the perceptions of consultants and producers were positive toward grazing residue and its impacts on subsequent grain yields. There was a large portion of consultants and producers making management decisions based on their own observation rather than based on research data. Hence, this survey suggests the need for university extension educators and researchers to more effectively disseminate research results to producers and other clientele regarding this management strategy.

Key Words: crop yield, extension education, grazing corn residue, survey

doi: 10.2527/msasas2016-061

062 Determination of climatologically suitable places in the Midwest for feedlot cattle production by using the comprehensive climate index model.

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The objective of this study was to determine climatologically suitable places to raise feedlot cattle in the Midwest. Hourly average temperature, relative humidity, and wind speed values for 22 locations (Des Moines, Mason City, Sioux City, Waterloo, Concordia, Dodge City, Goodland, Russell, Topeka, Wichita, Columbia, Kansas City, KCI, Springfield, St. Louis, Grand Island, Lincoln, Norfolk, North Platte, Omaha, Scottsbluff, and Valentine), spanning the last 10 yr, were obtained. Daily solar radiation values could not be obtained from the weather stations and were calculated based on a formula that takes hemisphere, latitude, and day of the year into account. The comprehensive climate index (CCI) model was used to predict DMI, ADG, and feed efficiency of feedlot cattle. The CCI enables one to quantify beef cattle performance for a number of breeds based on environmental conditions (temperature, relative humidity, wind speed, and solar radiation) at any time in the year. Because mostly beef cattle breed calves are placed into the feedlot in the Midwest, the British (beef breed) option in CCI was chosen to calculate the maintenance energy requirement of cattle. It was assumed that calves would be placed on feed at 340 kg and be marketed at 613 kg and that diets would have 3200 kcal/kg metabolic energy and would have DMI of 2.10% of the BW. Results comparing the

22 locations showed that Mason City had the highest and Columbia had the lowest DMI ($P < 0.05$). Cattle raised in Kansas and Missouri had lower DMI than those raised in Iowa and Nebraska. Cattle had ADG ranging from 1.74 to 1.69 kg/d; Scottsbluff and Goodland had the highest ADG and Columbia had the lowest ADG ($P < 0.05$). As it is observed in DMI, cattle raised in south latitudes had lower ADG than those raised in northern latitudes. Springfield and Wichita had better feed efficiency than other locations, and Mason City had the worst feed efficiency. Cattle raised in Kansas and Missouri had better feed efficiency than those raised in Iowa and Nebraska ($P < 0.05$). Results showed that there are differences in terms of performance of cattle raised in different locations in the Midwest and this should be taken into consideration for economical beef production.

Key Words: comprehensive climate index, feedlot, performance

doi: 10.2527/msasas2016-062

063 Breed and gender interact to affect the sale price of beef calves sold through video auctions from 2010 through 2014.

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The objective of this study was to quantify the effect of the potential interaction of breed and gender on the sale price of beef calves marketed through video auctions while adjusting for all other factors that significantly influenced price. Information on descriptive characteristics of lots of beef calves were obtained from a livestock video auction service. Data were available on 20,007 lots of steer calves and 13,804 lots of heifer calves (2106,181 total steer calves and 1239,645 total heifer calves) that sold in 116 video auctions from 2010 through 2014. All lot characteristics that could be accurately quantified or categorized were used to develop a multiple regression model that evaluated the effects of independent factors on the sale price using a backward selection procedure. A value of $P < 0.05$ was used to maintain a factor in the final model. Breed description of the calves in the lots was 1 of 19 factors included in the original model and was characterized into 6 groups: English, English crosses (EX), English–Continental crosses (ECX), Black Angus sired out of dams with no Brahman influence (AN), Red Angus sired out of dams with no Brahman influence (AR), and Brahman influenced (BR). Breed and gender of the lot interacted ($P < 0.0001$) to affect the sale price of calves. Lots of AR and AN steer calves had similar sale prices ($P = 0.9540$; \$379.08 and \$378.14 per 100 kg BW, respectively) and sold for significantly higher prices than all other steer breed groups. English cross and ECX steer lots had similar sale prices ($P = 0.2588$; \$376.24 and \$374.92 per 100 kg BW, respectively) but were greater ($P <$

0.05) than BR steer calves (\$365.61 per 100 kg BW). Among heifer calves, lots of AR heifers sold for the highest price ($P < 0.05$; \$356.02 per 100 kg BW). The AN heifer calves sold for the second highest price at \$345.95 per 100 kg BW, and this price was greater ($P < 0.05$) compared with ECX (\$341.50 per 100 kg BW) and EX heifers (\$341.14 per 100 kg BW). Brahman-influenced heifer calves sold for the lowest ($P < 0.05$) price at \$334.64 per 100 kg BW compared with heifers of all other breed descriptions. Breed and gender composition of the lots of beef calves interacted to affect the sale price of calves selling through video auctions. The value of the specific breed composition of beef calves is influenced by gender and may be related to buyers purchasing certain breeds of heifer calves as replacements for the breeding herd.

Key Words: beef calves, breed, gender

doi: 10.2527/msasas2016-063

064 Evaluation of distillers' grains components singly or in combination for finishing calf feds.

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A finishing study was conducted to determine the value of the fiber, protein, fat, and solubles components from wet distillers' grains with solubles (WDGS) alone or in combination for feedlot cattle in comparison with WDGS diets. Six hundred calf-fed steers (309 kg [SD 18]) were used in a randomized block design with 10 treatments and 6 replications per treatment. Diets were formulated to contain the same amount of fat, fiber, or protein as in WDGS. The control diet had a 1:1 mix of dry-rolled corn:high-moisture corn with 4% sorghum silage, 3.5% grass hay, and 5% supplement. The WDGS20 and WDGS40 diets had 20 and 40% of WDGS replacing corn, respectively. The Fiber20 and Fiber40 diets contained corn bran at 7 and 14%, respectively, and solvent extracted germ meal at 1.5 and 3%, respectively, replacing corn to mimic the fiber in the WDGS20 and WDGS40 diets. Protein was then added to the fiber diet in the form of corn gluten meal at 17.5% replacing corn to mimic the CP in the WDGS40 diet. Whole fat germ was then added to the fiber and protein diet to mimic the fat portion at 7.5% inclusion. Lastly, condensed distillers' solubles were added to the fiber, fiber plus protein, and the fiber plus protein and fat diets at 8% to evaluate its contribution to energy. The control diet was found to be similar to the Fiber20 and Fiber40 diets. As WDGS replaced corn in the diet, G:F quadratically increased ($P = 0.02$). Feeding WDGS resulted in greater G:F when compared with the cattle fed the Fiber20 and Fiber40 diets ($P < 0.01$). The addition of protein to the fiber diets improved G:F along with the inclusion of fat to the protein plus fiber diets ($P < 0.01$). With the solubles inclusion, ADG increased ($P < 0.01$). The addition of protein to the fiber diet and the addition of fat to the fiber