



News from KSU Animal Sciences

On behalf of all personnel in the Department of Animal Sciences and Industry, we want to thank all Extension agents, industry partners and stakeholders as we have transitioned our work from office- to home-based operations. There is no doubt our commitment to the betterment of programs we provide has never been greater. All K-State Extension personnel across the state are working for you and want to be utilized as a partner and advisor for your farm, ranch, family and youth needs. Please reach out, stay in touch and we will continue to provide support that is needed.

Joel DeRouchey, State Extension Animal Science Program Leader

- ↪ The **43rd Annual Midwest Meat Processing Workshop** planned for May 1 at K-State has been canceled. We apologize for any inconvenience this may cause and wish you all health and safety. Please watch www.asi.ksu.edu for updates on other upcoming events. For more information, contact Liz Boyle at lboyle@ksu.edu or 785-532-1247.

- ↪ **Market Beef Nominations Due May 1** - The 2020 state livestock nomination season has arrived! At this point in time, all state livestock nomination deadlines are in effect and will move forward as originally scheduled. Market beef nominations are due by May 1, 2020. This includes market steers and market heifers. The deadline is a postmark deadline, but families are encouraged to submit their nominations as early as possible. Nomination information for all species may be found on the KSU Youth Livestock Program website (<http://bit.ly/ksunominations>). In order to make sure nominations are complete upon initial submission, double check that all fields of the declaration form and nomination form(s) are complete, as well as the forms and DNA envelopes being signed by all parties. Given social distancing protocols, agents and families may exchange paperwork via email to obtain all of the appropriate signatures; they do not have to be originals this year for the forms to be accepted. However, all parties must still sign the paperwork. Please also cross-reference the tag numbers between the DNA envelopes and the specie nomination forms. All checks should be made payable to KJLS. There is a checklist for each species attached as a second page to the 2020 forms; the checklist does not need to be submitted, as it is only a reference tool for families. This is also a reminder that a YQCA certificate for each child needs to be attached to the Declaration Form, as that requirement will continue for both shows into the foreseeable future. For more information, contact Lexie Hayes via email at adhayes@ksu.edu or (785)532-1264.

- ↪ **Developing and Implementing a HACCP Plan for Meat and Poultry Workshop** will be held May 19-20, 2020, via Zoom on-line This two-day workshop uses curriculum recognized by the International HACCP Alliance for meat and poultry processors. The registration fee is \$450 per person and is available on-line at <http://haccp.unl.edu>. For more information, contact Dr. Liz Boyle (lboyle@ksu.edu; 785-532-1247).

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Update Regarding Livestock and Horse Judging Camps 2020 - Our students, future students and friends of the department are and continue to be our top priority. As the COVID-19 pandemic continues to work its way across our nation, we are monitoring developments. We have made the decision to cancel all #KSUASI sponsored judging camps this summer. This decision was not made lightly, but the safety and health of the youth we serve is our highest priority.

If you have already sent in your registration please contact Chris Mullinix (Livestock) at cmullinix@ksu.edu or James Lattimer (Horse) at jlattimer@ksu.edu to discuss cancellation. We look forward to having you on campus next year for the Champions Livestock Judging, and Beginning and Advanced Horse Judging Camps. Stay safe and stay healthy!

K-State Animal Sciences Leadership Academy Update – The K-State Animal Sciences Leadership Academy scheduled for June 24-27, 2020, has been canceled due to continuing concerns with the COV-19 pandemic. The safety and health of the participants and staff were our highest priority in making this decision. Applicants are encouraged to re-apply for the academy in 2021. For more information, please contact academy director Sharon Breiner at sbreiner@ksu.edu.

YQCA Requirement for 2020 State Shows – Youth for the Quality Care of Animals (YQCA) is a national, multi-species youth livestock quality assurance program that focuses on food safety, animal well-being, and life skill development, through age-appropriate educational curriculum for youth 8-21 years of age. This program is an annual certification that grows with a young person, so the learning modules are different every year. ALL exhibitors are required to be YQCA certified in order to participate in the 2020 Kansas State Fair Grand Drive and/or Kansas Junior Livestock Show (KJLS). This includes youth who will be showing market animals, commercial breeding females, and/or registered purebred breeding females. Given the COVID-19 situation, instructor-led classes have to be canceled or postponed until at least July 4. Families may wait and see if a face-to-face class is re-scheduled in their local area once the in-person activity ban is lifted, or complete the class online. The YQCA board is offering the online course at a reduced rate of \$9/child only in the month of April. Families must have a “flash sale” coupon in order to take advantage of this opportunity and are encouraged to contact their local extension office for more details. There is also a new option for 7-year-old members to obtain certification. They must participate in a junior-only, instructor-led class with a parent or guardian. However, this option will not be available until face-to-face activities are allowed to resume. This will be a transition year for the requirement for 7-year-olds who plan to exhibit at KJLS. Therefore, this age group of exhibitors will not be required to be certified until 2021.

Families need to attach copies of each child's YQCA certificate to their Declaration Form at the time of nomination. More information may be found on the K-State Youth Livestock website, under Youth Livestock Quality Assurance, by contacting the local extension office, or via Lexie Hayes at adhayes@ksu.edu or 785-532-1264.

The **2020 Dr. Bob Hines Kansas Swine Classic** is scheduled for July 10-11, at CiCo Park in Manhattan. This two-day event includes educational workshops, showmanship contest, and a prospect and market hog show. It is open to all Kansas youth ages 7-18 as of January 1, 2020.

This year's Classic will feature a swine photography contest along with a swine skillathon. For the swine photography contest, youth may submit up to two swine-related photos. Photos should be 8x10" size and should not be framed or matted. Photos will be placed in plastic sleeves and displayed throughout the weekend.

Entries must be postmarked by June 15, 2020. More information and registration will be coming soon to www.KSUswine.org. For more information, contact Joel DeRouchey (785-532-2280; jderouch@ksu.edu) or Lexie Hayes (785-532-1264; adhayes@ksu.edu).

Mark your calendars – the **Kansas 4-H Livestock Sweepstakes** will be hosted on the K-State campus August 22-23! Registration must be completed through your local extension office and will be due August 1. The schedule, rules, and information will be available on the youth livestock website at the beginning of June.

CALENDAR OF UPCOMING EVENTS		
Date	Event	Location
May 1, 2020	Market Beef Nominations due	
May 19-20, 2020	HACCP workshop	
July 10-11, 2020	Dr. Bob Hines Kansas Swine Classic	Manhattan
August 22-23, 2020	Kansas 4-H Livestock Sweepstakes	Manhattan

What's New.....

↪ **Management Minute** – Justin Waggoner, Ph.D., Beef Systems Specialist

“Circumstances and Assumptions”

The recent outbreak of Coronavirus (Covid-19) in the United States has affected the workplace in many different ways. The current situation has many of us, like myself, working from makeshift workstations located in spaces formerly known as dining rooms, living rooms, or bedrooms. These unforeseen circumstances have come with many challenges and made us appreciate items like our desks and office chairs designed for optimum functionality and long-term use. As humans, we often erroneously assume that everyone's resources/environment (circumstances) are similar to our own. In this “new” work environment, that we find ourselves we cannot assume that people have the same resources available in their homes as they would have had at their former workstations. Essential elements in the workplace, such as scanners or even internet connectivity, may create challenges for some working remotely. It would also be erroneous to assume that workflow would remain unchanged, and that this new environment has fewer distractions. Workflow and productivity will be impacted and for many parents the terms “family-friendly” and “work-life balance” have taken on entirely new meanings. Many adjectives may be used (rewarding, interesting, challenging, distracting, frustrating) to describe what it is like to work with children in the home. Managers should always take a moment and consider that not everyone's circumstances are the same when communicating with employees about job expectations or tasks as unintentional assumptions often result in negative outcomes.

For more information, contact Justin Waggoner at jwaggon@ksu.edu.

↪ **Feedlot Facts** – Justin Waggoner, Ph.D., Beef Systems Specialist

“Cowherd Mineral Supplement Selection Tips: Phosphorus”

Cattle producers are anxiously preparing for the upcoming grazing season. Among those preparations is selecting a mineral supplement. It can be challenging to select a mineral program, as there are many different products and mineral formulations currently available. When evaluating mineral supplements, the phosphorous concentration may be used as a guide to determine if the mineral fits the production stage of the herd and forage base. Phosphorous is one of the most common mineral deficiencies in grazing systems around the world and is one of the primary reasons we provide mineral supplements to grazing beef cattle. The table below illustrates the amount of phosphorous required in a mineral supplement required for cattle at various production stages consuming forages with different phosphorous concentrations. Forage phosphorous concentrations vary and are typically greatest during the spring and lowest in the winter. In Kansas, phosphorous content of native range in the spring is typically between 0.15 and 0.20%. Thus, the maintenance requirements of lactating cow (20 lbs milk/d) could be met by a mineral with at least 8% phosphorous (average of 6 and 10 in the table).

	Total diet P, %			
	0.05	0.10	0.15	0.20
Maintenance	-----% P needed in mineral supplement-----			
1000 lb BW	8	6	6	6
1200 lb BW	10	6	6	6
1400 lb BW	12	8	6	6
Gestation				
Last 1/3	16	10	6	6
Lactation				
20 lb milk/d	16	16	10	6
30 lb milk/d	16	16	16	6

Intake assumption: 2% bodyweight during maintenance and gestation. Intake increases with milk production
Wright, 2003

For more

information, contact Justin Waggoner at jwaggon@ksu.edu.

↪ **Poultry Testing Requirements Suspended** – The Division of Animal Health at the Kansas Department of Agriculture (KDA) has again announced a waiver for the pullorum-typhoid testing requirements for poultry in Kansas. This has been caused by a nationwide shortage of the testing antigen. The issue of antigen cost, availability and shipping methods have long been a sore spot for all of us working with poultry events in Kansas. The shortage has been caused by many things, but certainly having just a sole supplier due to the pharmaceutical industry consolidation has been problematic. Anyone working with poultry that would normally

require testing should remain alert to the issue, however, as the program has NOT been discontinued. I have always pointed out that reduced participation in youth poultry shows is partially tied to the difficulty with dealing with the national testing program. When all things are considered, there is a low risk of pullorum disease when birds are displayed in individual show cages. The Kansas pullorum testing program is maintained within the KDA and they may be reached at 785-564-6601 for further questions. For more information, contact Dr. Scott Beyer, Kansas Extension Poultry Specialist.

Evaluating Stocker Steer Gains on Tallgrass Native Range with Two Burn Dates and Spices in

Mineral - Two pasture burning times (March or April) and free-choice mineral with or without addition of spices were evaluated using 281 head of stocker steers on eight pastures of tallgrass native range. The spices included garlic oil in powder form and Solace (Wildcat Feeds LLC). Cattle were weighed at the start of the study and the end. Steers grazed pastures for 87 days. Data analyzed included average daily gain, total gain, and final weight. The overall objective of this study was to evaluate management practices that may impact stocker steer gains on a 90-day double stocking grazing system in tallgrass native range. Specific objectives include evaluating the timing of burning, addition of spices in a complete free-choice mineral, and determination if the effects are additive.

Bottom Line... Burning pastures in April results in a greater calf gain than burning in March, while the addition of spices to a free-choice complete mineral shows promise as a cost-effective method to increase gains in stocker steers on tallgrass native range. View the complete research report at www.KSUbeef.org. For more information, contact Jaymelynn Farney (iki@ksu.edu; 620-820-6125).

The Use of Bioelectrical Impedance to Assess Shelf-Life of Beef *Longissimus Lumborum* Steaks - The objective of this study was to evaluate the efficacy of using surface and internal bioelectrical impedance to assess beef *longissimus lumborum* shelf-life during 15 days of simulated retail display. Beef strip loins, obtained from three commercial processors (postmortem age = 27, 34, or 37 days), were fabricated into 12 1-inch thick steaks. Steaks were subdivided into six consecutively cut pairs, packaged on Styrofoam trays, overwrapped with polyvinyl chloride film, and displayed under fluorescent lighting at 32–40°F in coffin-style retail cases for 15 days. Microbiological analysis, pH, bioelectrical impedance analysis, objective color assessment, proximate composition, and lipid oxidation were measured. Surface and internal bioelectrical impedance assessment were compared.

Bottom Line... Internal bioelectrical impedance has potential for use to assess shelf-life of retail steaks and it was more precise than surface bioelectrical impedance; however, internal bioelectrical impedance may translocate bacteria into the muscle. Protein degradation and water holding capacity should be evaluated to better understand bioelectrical impedance changes over time. View the complete research report at www.KSUbeef.org. For more information, contact Elizabeth Boyle (lboyle@ksu.edu; 785-532-1247).

Using Caloric Efficiency to Estimate the Energy Value of Soybean Meal Relative to Corn and Its Effects on Growth Performance of Nursery Pigs

- An experiment was conducted to estimate the energy value of soybean meal (SBM) relative to corn and determine the effects of increasing amounts of SBM in nursery pig diets. A total of 2,233 pigs, initially 24.2 lb body weight (BW), were placed in 92 pens with 20 to 27 mixed gender pigs per pen. After weaning, pigs were fed common diets for 21 d and then assigned to treatments in a randomized complete block design with BW as the blocking factor. Treatment diets consisted of 21, 27, 33, or 39% SBM, obtained by changing the amount of feed-grade amino acids (AA) and corn, and were fed for 21 d. Soybean meal NE value used in diet formulation was 947 kcal/lb. There were 23 replicates per treatment. Pigs were weighed and feed disappearance measured to calculate average daily gain (ADG), average daily feed intake (ADFI), feed efficiency (F/G), and caloric efficiency (CE). Data were analyzed using the GLIMMIX procedure of SAS with block as a random effect and treatment as a fixed effect. Single degree-of-freedom contrasts were constructed to test the linear and quadratic effects of increasing SBM. There was a tendency for a quadratic response for ADG, with an improvement observed up to 33% SBM. There was a tendency for a decrease in ADFI as dietary SBM increased. Pigs fed diets with increasing SBM had a tendency for an improvement in F/G up to 33% SBM then returned to control values when 39% SBM was fed. There was an improvement in CE with increasing SBM. Using CE as a means to estimate the energy content of SBM relative to corn, a value of 105.4% of corn energy or 1,277 kcal/lb NE was determined using all 4 data points. When removing the CE value of the 39% SBM treatment due to the quadratic tendency and just using the linear portion of the CE response, SBM was estimated to have 121.1% of corn energy or 1,468 kcal/lb NE.

Bottom Line... In conclusion, the results of the current study suggest that feeding SBM up to 33% improves ADG, F/G, and CE. The energy value of SBM is estimated between 105 and 121% of corn, much greater than the current suggested value of 78% of corn. This has important ramifications as it increases the value of SBM in diet formulation. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by H.S. Cemin, M.D. Tokach, S.S. Dritz, J.C. Woodworth, J.M. DeRouchey, and R.D. Goodband)

↪ **Effect of Viligen™, Feed Form, and Storage Time on Fumonisin Concentrations in Corn** - This trial was conducted to determine the effect of Viligen™, feed form (meal or pelleted) and storage time (0, 3, or 7 d) on reducing the fumonisin (FUM) concentration in diets. Three 1,000-lb batches of feed were manufactured and used as replications. Each batch was divided into 500-lb batches with or without Viligen at 0.15% of the diet. Diets were then left as a meal or pelleted and stored at room temperature for 0, 3, and 7 d to determine the reduction of FUM over time.

Bottom Line... The result indicated that there were no main or interactive effects of Viligen, feed form, and storage time. There were marginal 3- and 2-way interactive effects, but the magnitude of response likely was not large enough to have biological effects on nursery pig performance. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by Z.X. Rao, M.D. Tokach, S.S. Dritz, J.C. Woodworth, J.M. DeRouchey, R.D. Goodband, and H.C. Cartagena)

↪ **Alternatives to Replace the Use of Zinc Oxide in Nursery Pig Diets** - A total of 300 pigs were used to evaluate the effects of different nutritional strategies to replace zinc oxide (ZnO) in nursery diets. At weaning, 5 pigs were allotted to each pen and pens were assigned to 1 of 6 dietary treatments in a completely randomized design. There were 10 replicate pens per treatment. Treatments consisted of A) Positive control (ZnO providing 3,000 ppm Zn from d 0 to 7, and 2,000 ppm Zn from d 7 to 25); B) Negative control (NC; no ZnO); C) NC plus 1.2% Na diformate; D) NC with 4% coarse ground wheat bran; E) NC with low crude protein (18%) by adding high levels of feed grade amino acids; and F) the combination of NC with 18% crude protein (CP), 1.2% Na diformate, and 4% coarse ground wheat bran. Pigs were weighed on d 7, 14, 25, 37, and 46 to evaluate body weight, average daily gain, average daily feed intake, and feed-to-gain ratio. Fecal dry matter was obtained by collecting feces on days 7, 14, 25, and 37 from 3 pigs per pen. Fecal scores were assessed daily for the entire trial. From d 0 to 7, no differences in any response variables were detected between treatments. From d 7 to 25, pigs fed the diet containing ZnO had greater ADG and ADFI than those fed all other treatments with pigs fed the 18% CP diet having the lowest ADG. Pigs fed ZnO had improved F/G compared with the treatments containing 18% CP with other treatments intermediate. From d 25 to 46, when pigs were fed a common diet (no ZnO), pigs previously fed the diets containing ZnO or those that were fed the combination of NC with 18% CP, 1.2% Na diformate, and 4% coarse ground wheat bran had greater ADG than pigs previously fed the NC with 18% CP with the response driven by ADFI. Overall, pigs fed diets with ZnO from d 0 to 25 had greater ADG, ADFI, and final BW than those fed the NC with 18% CP which was the lowest with pigs fed the other treatment diets intermediate. Pigs fed the NC diet without ZnO had the lowest fecal DM and highest fecal scores. Pigs fed diets with ZnO had similar fecal DM and scores as pigs fed the diet containing Na diformate, wheat bran, and 18% CP, but greater fecal DM than pigs fed singular strategies of Na diformate, wheat bran, or 18% CP.

Bottom Line... This study suggests that diets without ZnO reduce nursery performance, and lowering dietary CP and amino acids exacerbate this response. Combining the three alternatives tested (wheat bran, Na diformate, and low CP) as a replacement to ZnO improved fecal DM content and fecal score but did not result in improved performance. More information is available on this experiment at www.KSUswine.org. (This study conducted by F. Laskoski, M.D. Tokach, J.C. Woodworth, R.D. Goodband, S.S. Dritz, and J.M. DeRouchey.)

↪ **Evaluating the Productive Energy Content of High Protein Distillers Dried Grains in Swine Diets** - A total of 300 pigs were used in a study to evaluate the effects of increasing amounts of high-protein distillers dried grains (HP DDG) on growth performance, and to estimate the productive energy of HP DDG. Pens were allocated with five pigs each and fed a common diet for 21 d after weaning. Then, pens were assigned to treatments in a randomized complete block design. There were 5 treatments with 12 pen replicates per treatment. Treatments consisted of 0, 10, 20, 30, or 40% HP DDG. Pigs were weighed weekly for 21 d to evaluate average daily gain, average daily feed intake, and feed efficiency. Caloric efficiency was obtained by multiplying ADFI by kcal of net energy per lb of diet and dividing by ADG. Productive energy was estimated based on caloric efficiency relative to the diet without HP DDG. Data were analyzed with the GLIMMIX procedure of SAS with block as a random effect and pen as the experimental unit. From d 0 to 7 and 7 to 14, increasing amounts of HP DDG linearly decreased ADG, which was mainly driven by lower ADFI. The inclusion of HP DDG negatively impacted F/G from d 0 to 7 with no evidence for differences from d 7 to 14. From d 14 to 21, there was a decrease in ADFI and improvement in F/G as HP DDG inclusion increased.

Bottom Line... Overall (d 0 to 21), pigs fed diets with increasing HP DDG had a linear decrease in ADG, ADFI, and final body weight. There was a tendency for a quadratic response in F/G, with the best F/G observed for pigs fed diets with 40% HP DDG. There was a linear reduction in caloric efficiency with increasing amounts of HP DDG, indicating an underestimation of HP DDG NE. The productive energy of HP DDG was estimated as 1,218 kcal/lb or 97.3% of corn NE. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by H.S. Cemin, M.D. Tokach, S.S. Dritz, J.C. Woodworth, J.M. DeRouchey, R.D. Goodband, and M. Wilken)

ASI Faculty Spotlight



Cassie Jones (jonesc@ksu.edu; 785-532-5289)

Associate Professor/Undergrad Research Coordinator

Dr. Cassie Jones is the Undergraduate Research Coordinator in the Department of Animal Sciences & Industry at Kansas State University. She coordinates undergraduate students interested in research projects across disciplines and species. Cassie teaches ASI 561: Undergraduate Research in Animal Sciences & Industry and ASI 318: Fundamentals of Nutrition. Her research efforts include evaluating the effects of ingredients or feed processing technologies on feed safety and animal nutrition.

Dr. Jones is originally from Beulah, N.D., where her family raised Rambouillet sheep. She is formally trained as an applied swine nutritionist.

She and her husband, Spencer, have three children, Ty, Hayden, and Hadley, and raise Angus cattle near Wamego.



Sara Gragg (saragragg@ksu.edu; 785-532-1306)

Associate Professor/Food Safety and Food Microbiology

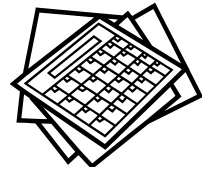
Dr. Sara Gragg earned her Masters in Food Science, doctorate in Animal Science, and was a post-doctoral research scientist at Texas Tech University. Sara has enjoyed being closer to her Nebraska roots since joining Kansas State University in the summer of 2013. Her interest in food science and animal science began during her service in FFA, ag education and showing horses. She earned her undergraduate degree in Food Science & Technology from the University of Nebraska-Lincoln before moving to Texas for graduate school. Sara has more than 18 years of experience and her research program investigates pre-harvest and post-harvest issues affecting

the meat and produce industries, with specific interests addressing the manner by which pathogens contaminate food products and the application of interventions to prevent and/or reduce pathogen presence. She is particularly interested in studying the pre-harvest transmission of foodborne pathogens in food animals, as well as investigating interventions to reduce foodborne pathogens in live animals. As an affiliated faculty member with the Center for Food Safety in Child Nutrition Programs at Kansas State University, she also contributes to food safety research for school food service programs. Sara teaches courses in food microbiology, produce safety and food policy at Kansas State University.

Sara's husband, J.D., is a consultant for the National Research Center for College and University Admissions (NRCCUA). Together they have two children, Barrett and Brendan.

What Producers Should Be Thinking About.....

WHAT PRODUCERS SHOULD BE THINKING ABOUT IN JUNE.....



BEEF -- *Tips by Dale Blasi, Extension Beef Specialist*

June is a month to let Mother Nature take her course. **Assuming timely precipitation**, native grasses are usually at peak production; therefore, little supplementation is needed, with the exception of some minerals.

Cow-Herd Nutrition

- Provide plenty of clean, fresh water.
- Provide free-choice minerals to correct any mineral deficiencies or imbalances.
- Monitor grazing conditions and rotate pastures if possible and practical.
- Consider creep-feeding if it's cost-effective.

Herd Health

- Monitor and treat pinkeye cases.
- Provide fly control. Consider all options; price and efficiency will dictate the best options to use.
- Monitor and treat for foot rot.
- To reduce heat stress, avoid handling and transporting cattle during the hottest times of the day.

Forage and Pasture Management

- Check and maintain summer water supplies.
- Place mineral feeders strategically to enhance grazing distribution.
- Check water gaps after possible washouts.
- Harvest hay in a timely manner; think quality and quantity.

Reproductive Management

- If using AI, do not expect all females to conceive. A common practice is to breed once or twice with AI, then turn out cleanup bulls for the balance of a 65-day breeding season. A 42-day AI season with estrus synchronization at the front end gives most females three chances to conceive by AI.
- Watch bulls for libido, mounting and breeding function.
- Record breeding dates to determine calving dates.
- By imposing reproductive pressure (45-day breeding season) on yearling heifers, no late-calving 2-year-olds will result. This will increase lifetime productivity and profits.

Genetic Management

- Monitor herd performance. Then identify candidates to cull because of poor performance.

General Management

- Check equipment (sprayers, dust bags, oilers, haying equipment, etc.), and repair or replace as needed. Have spare parts on hand because downtime can make a big difference in hay quality.

*We need your input! If you have any suggestions or comments on **News from KSU Animal Sciences**, please let us know by e-mail to lschrein@ksu.edu or phone 785-532-1267.*