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Cattle Parasites Prevalent, Not Always Controlled

Source: Cattlenetwork.com

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New data from the USDA's National Animal Health Monitoring System (NAHMS) show widespread prevalence of internal parasites in cow-calf operations, and suggest control measures fall short on many operations. Bert Stromberg, PhD, a professor of veterinary pathobiology and associate dean at the University of Minnesota presented the NAHMS results today to the Academy of Veterinary Consultants in Denver.

Parasite control is one of the most cost-effective investments a rancher can make. Research from Iowa State University, for example, shows that eliminating dewormers in a cow-calf operation impacts breakeven prices by 34 percent, at an added cost of $165 per head, due primarily to lower weaning rates. The news NAHMS study shows, however, that many producers are missing some of the benefits of a good parasite-control program.

The NAHMS researchers surveyed producers from 24 states representing 88 percent of U.S. beef cows regarding their parasite-control practices, and asked them to voluntarily collect fecal samples from their herds.

The study shows that for operations with unweaned calves or weaned stocker calves, over half dewormed these animals at least once per year. About 70 percent deworm replacement heifers once or more per year and just over 80 percent deworm cows at least once per year. Of those who deworm their cattle, 85 percent use a regular schedule to determine when the treatments take place. In this study, only 5.7 percent of producers had performed fecal testing to evaluate parasite burdens during the past three years.

For Phase 1 of the study, participants send fecal samples from 20 randomly selected weaned beef calves six to 18 months of age, that were on pasture for at least four weeks and had not been dewormed for at least 45 days. Laboratory testing of samples from 99 operations showed 85.6 percent positive for strongyle-type eggs, 18 percent positive for nematatodirus, and 60 percent positive for coccidia oocytes.

For Phase 2, the researchers asked participants to deworm their calves with whatever product they typically use, according to label directions, then submit a second set of fecal samples. Laboratories conducted "fecal egg count reduction" (FECR) tests to determine the efficacy of the deworming treatments.

Among participating operations, Stromberg says, 31 percent achieved efficacy rates below 80 percent for strongyle-type egg counts, and 44 percent had efficacy rates below 90 percent. Results below 90 percent efficacy, he adds, indicate the presence of anthelmintic resistance among parasite populations. For nomatatodirus, 62 percent of the operations had less then 90 percent reduction and 57 percent had less than 80 percent efficacy.

Stromberg says improper or incomplete treatment probably accounts for some lack of treatment success, such as when producers miss some cattle or misjudge their weights and apply the wrong dose. The data also suggest, however, that worm populations are developing resistance to some dewormers, resulting in a decline in efficacy.

The researchers acknowledge that more study will be needed to determine the extent of resistance to anthelmintics among parasite populations and to develop recommendations for ensuring the continued effectiveness of these products. In the meantime, Stromberg reminds producers to work with their veterinarians to develop strategic deworming programs to treat parasites in their animals and reduce shedding of parasite eggs that contaminate pastures.

Halters could control cattle without fences

Source: JAVMA News

Dean M. Anderson, PhD, herds a cow across a grassy range with clicks and calls of "come on, mama" and "come on, sweetheart." His voice is broadcast from speakers on a halter around the cow's head. As the cow trots away, a calf follows, albeit with brief stops for bites of grass.

In the February 2009 test, Dr. Anderson equipped cows with a prototype neck saddle and stretch halter for a virtual fence system he hopes will eventually be used on ranches to remotely hold and herd cattle by combining GPS technology, recorded sounds, and, when deemed appropriate, electric shocks. The Ear-A-Round halters use speakers near the cows' ears independently or in concert to steer cattle or hold them within invisible boundaries.

"I think that the methodology is ready to be applied if somebody will simply manufacture the units," Dr. Anderson said. "Finding out the limits of usefulness of the device is going to require some further testing, but the concept of holding the animals behind static boundaries or holding animals in a polygon that can be moved spatially and temporally over the landscape has been shown to be successful with small numbers."

Dr. Anderson, a research animal scientist with the Department of Agriculture's Agricultural Research Service, has worked on the project for more than three decades and has used various prototype halters to control and herd cattle at the Jornada Experimental Range in Las Cruces, N.M. He is working with the Massachusetts Institute of Technology, which has developed the hardware and software.

Dr. Ulysses McElyea, who is a member of the Institutional Animal Care and Use Committee at New Mexico State University, said he thinks the virtual fence system is a fantastic concept for use in "wild, wide-open spaces" in the western U.S. He is an adjunct professor in animal and range science and an attending veterinarian at the university, as well as a small animal practitioner. "The fenceless fence that Dean is working on, I think, is very, very appropriate," Dr. McElyea said. Drs. Anderson and McElyea said the university's IACUC has approved the project.

Daniela Rus, PhD, a professor and associate director of the Computer Science and Artificial Intelligence Laboratory at MIT, said she had been performing similar research on remote cattle herding when she learned about Dr. Anderson's work in the field. She is now working with him to develop the electronic portion of the system.

Researchers at the USDA-ARS and MIT understand well what ranchers will need with respect to cattle biology, range ecology, and system electronics and software, Drs. Anderson and Rus said. She thinks halters will have to cost less than $100 each, and he thinks the equipment could be manufactured and sold at a "two-digit" price for each headset, depending on the bells and whistles included.

"Since we're talking about flocking, herding, gregarious animals, it is my opinion that we would not have to necessarily instrument every animal in the group if the object was to control the group, and this would reduce the cost of implementing virtual fencing," Dr. Anderson said. "However, more research is needed to determine what percentage of cows have to wear the instruments for the system to effectively move and control a herd.

"The prototypes have been used to test the effectiveness of voice recordings, electronically generated noises, whistles, buzzing sounds, and various environmental sounds, Dr. Anderson said. He has studied reactions from cows, some of which have flicked their ears at noises that have caused others to run. He added that, by determining the most effective sounds, cattle owners would ideally not have to apply any shocks, and suggested that, at most, shocks would be administered only periodically and immediately following audio cues to teach the cattle. The cues start at whisper level and, if a cow ignores the cues, they can increase in volume to a physically uncomfortable level similar to that experienced when standing near a 747 engine during takeoff. Dr. Anderson said one study showed audio cues caused the animals' heart rates to jump less than did common environmental events, such as flocks of birds flying overhead.

The current components weigh about seven pounds, Dr. Anderson said, and the devices could be smaller when manufactured commercially. The flat solar panels atop the current prototype electronics box will likely be replaced by convex panels attached to a belt that fits around a cow's neck, Dr. Anderson said. The devices could eventually use kinetic technology such as that used in self-winding wristwatches.

He envisions that the collars would replace internal barbed wire and electric fences, but not perimeter fences, on properties. However, the system is not intended to eliminate use of barbed wire in situations where compromising animal control would create health or safety risks for people or animals, Dr. Anderson said. And those implementing virtual fencing will have to accept some leaky boundaries as even animals with the halters can be unpredictable. He thinks the system will be most valuable in distributing animals over landscapes to avoid overuse of land and vegetation near drinking water, and underuse at boundaries.

Cow owners will also be able to play their own recorded hollers, songs, and sayings through the collars, providing animals with the familiar sounds of their owner's voice as they are moved, Dr. Anderson said. His voice is played for his cows as they are herded to the corral, where they are rewarded with cottonseed cake.

"Animals remember," Dr. Anderson said. "Whatever you do to an animal, you're teaching it something." Unlike some wildlife tracking

system collars, the stretch halter used on the cattle is made of bungee cordlike material and the "saddle" sits loose on the animals, Dr. Anderson said. That allows room for growth and normal grazing, swallowing, and belching. The halters are also designed to break away from the animals if they become caught on objects, Dr. Anderson said. Dr. Anderson said the system also uses a less powerful shock than those from cattle prods or electric fences. "Me being the guinea pig and hanging on to the electrode end of a 'hot shot' or touching an electric fence, versus me touching the electrodes of this device I've built, I can tell you that the device is much less severe," Dr. Anderson said.

He said nothing will replace the "insightful eyes of a human," and he hopes ranch workers will spend more time examining the livestock, vegetation, resources, and soil. Moving those workers into offices would be a disastrous application of the technology, he said. Dr. Anderson envisions ranch hands using the technology would spend at least the same amount of time with the cattle as they traditionally have, but they would spend more time studying the animals and their environment than herding them. "It's basically changing physical labor into cognitive labor," Dr. Anderson said.

Marie Belew Wheatley, president and CEO of the American Humane Association, has predicted that intensive animal agriculture processes will necessarily continue and even increase in the future to meet continuing worldwide needs for food, but that food producers also will adopt significantly more humane methods for ensuring animal welfare and well-being in response to rapidly escalating retailer and consumer demand for such care.

American Humane's CEO predicts continued intensive animal agriculture, But with significant humane improvements *Source: TSCRA*

Her remarks came during the Future Trends in Animal Agriculture Symposium – "The Future of Animal Agriculture: 2030" – at the U.S. Department of Agriculture in Washington, D.C. The symposium was held to explore issues of what will – and what should – animal agriculture look like in 2030.

"Now and into the future, there will be a significantly closer and much needed integration of improved animal welfare practices and food-production productivity," she noted. "No food producer anywhere in the world will have the luxury of focusing on productivity at the expense of sound animal welfare and husbandry. To compete, they will need to take a holistic view incorporating not only improved animal welfare, but also sustainability and resource management, food safety and affordability."

Wheatley concluded her presentation by noting that American Humane will continue to review, credential and provide reasoned, science-based standards to measure the food industry's animal welfare outcomes.

Among its many programs for animals and children, American Humane created and launched the nation's first and original monitoring, auditing and labeling program that attests to the humane care and handling of animals raised for food, which gives American Humane unique and powerful insights into how to advance animal welfare in the food-production industry. That program, known as American Humane® Certified, is now the pre-eminent and fastest- and more than 60 million farm animals.growing such program, covering more than 500 farming operations

NCBA: EPA Greenhouse Gas Ruling Could Be Devastating To Agriculture

Source: ***www.Cattlenetwork.com***

The National Cattlemen's Beef Association (NCBA) is extremely concerned about the potential impacts that the Environmental Protection Agency's (EPA) recent greenhouse gas (GHG) ruling could have on agriculture operations. EPA's decision, announced this week, claims that GHG emissions are an endangerment to public health and the environment. This sets the stage for greenhouse regulation under the Clean Air Act (CAA) and would give the EPA unprecedented control over every sector of the U.S. economy.

"It's premature to issue this kind of finding, especially given the recent controversy surrounding the scientific validity of alleged human contributions to climate change," said Tamara Thies, NCBA chief environmental counsel. "Regulation of greenhouse gases should be based on science, and it should be thoughtfully considered and voted on by Congress through a democratic process, not dictated by the EPA."

The endangerment finding does not itself regulate GHGs; but unless Congress acts, it sets in motion EPA regulation of GHGs from stationary sources and the setting of new source performance standards for GHGs. On October 27, 2009, EPA proposed a rule designed to regulate GHG emissions from sources that emit 25,000 tons per year or more, instead of the statutory 250 tons per year threshold for pollutants which is included in the Clean Air Act. The extent to which EPA can change statutory permitting requirements, however, is unclear. Only time will tell how our federal courts will address citizen suits to force regulation of all sources that emit GHGs in excess of the statutory thresholds. EPA indicated that it also would be developing an approach to regulate GHGs from hundreds of thousands of small operations, including farms and buildings.

While agricultural sources are currently generally not required to obtain permits for greenhouse gas emissions, regulation of GHGs under the CAA may for the first time trigger such regulation. Given the fact that America currently has over 2,000,000 farms, it would be virtually impossible to permit a majority of them. It would also impose massive regulatory compliance costs on producers, which could force many operations out of business.

"Congress never intended for the Clean Air Act to be used for greenhouse gas regulation," said Thies. "While the Act has done a good job of cleaning up pollutants, it is not adequately equipped to address global climate change. Any attempts to use it for this purpose would be devastating to U.S. agriculture."

According to the EPA, in 2007, GHG emissions from the entire agriculture sector represented less than 6% of total U.S. GHG emissions in Tg CO2 Eq. At the same time, land use, land use change, and forestry activities resulted in a net carbon soil sequestration of approximately 17.4% of total U.S. CO2 emissions, or 14.9% of total U.S. greenhouse gas emissions.

"Agriculture actually provides a significant net benefit to the climate change equation," said Thies. "Rather than being subject to overly-burdensome regulations, agriculture should be rewarded for the carbon reductions we provide." NCBA submitted comments in opposition to EPA's proposal in April.

Cattle Breeding: Use Of Natural Service Sires With Synchronized Estrus

Source: ***www.Cattlenetwork.com***

Typically producers that synchronize estrus do so to facilitate an AI program. However there are some instances where application of an AI program is not feasible but advantages from synchronization of estrus are still desirable.

Advantages

Synchronization of estrus serves to concentrate both the breeding and calving seasons. This may be particularly useful in heifers and in herds with extended calving and breeding periods. Synchronization of estrus will begin to group more cows toward the beginning of the calving period and may be an intermediate step prior to implementation of a full estrus synchronization and AI program. Early calving cows have more time to resume normal estrus cycles prior to the next breeding period and are therefore more likely to continue to conceive early. More early calving cows will result in more older calves at weaning. Some studies have shown as much as a 10 to 17 day calf age advantage and 20 to 44 lbs at weaning as a result of estrous synchronization. Additionally, compared with conventional AI, cows are exposed to bulls sooner in the breeding season which may have a biostimulatory affect on those females that have not yet resumed normal estrous cycles. Facilities and time needed for heat detection and AI are not needed with natural service.

Disadvantages

The impact of a failure to identify a sub- fertile bull or a disease problem prior to turn out is magnified with a synchronized estrus. If bulls are not physically fit, the increased activity may be more likely to result in injury due to the intense activity in a short time frame. The increased number of females in heat at one time can attract attention from neighboring bulls. If the neighbor's bull(s) get into the pasture with the synchronized group of cows, the resident bull(s) may spend more time fighting the foreign bull(s) than breeding cows. This also increases the chance of injury. Finally, the genetic options and potential available with AI sires are most likely to exceed those with natural service sires

Guidelines for using bulls with synchronization

Use a synchronization protocol recommended for use with heat detection. If the estrus synchronization protocol is one injection of PG, turn bulls out when the PG injection is given or turn bulls out and give PG five days later. For the Select Synch protocol, turn bulls out three days before PG. The tightness of synchrony achieved with a fixed-time AI protocol is not desirable in this case.

- Use a small pasture or lot to reduce the physical energy the bull uses to travel.
- Be sure to have a complete breeding soundness exa m performed on bulls prior to use.
- Use bulls two to four years of age that are agile, active and known breeders. Bulls used in a multi-sire group should have their pecking order established well before turnout.
- Use a bull to female ratio of 1:15 to 1:25. 6) Single sire pastures eliminate bull fights, however, there is some data to indicate fertility was increased when two bulls were used compared to one.
- Monitor activity closely during the two to five days of most intense activity.
- After the intense period of activity, it is best to rest the bull for two to three weeks or more prior to turning the bull back out. For small herds, with only one or two bulls this may not be possible.

Summary

Using bulls at a synchronized estrus can be an effective way to tighten the calving period and eventually shorten the breeding season. Pregnancy rates using either bulls or AI after the same synchronization protocol should be similar given good management in both cases.

Ag economist optimistic about economic recovery

Source: Texas A&M AgNews

. A Texas AgriLife Research economist told a group of farmers and ranchers he's optimistic about the future of the agricultural economy and the general economy as a whole. Dr. Charlie Hall, who also is the Ellison Chair in International Floriculture at Texas A&M University, said at the 2009 Texas Plant Protection Conference recently in Bryan that the economic recovery is going to be slow, "but that's a good thing."

Current economic concerns include the global financial situation, auto industry, energy consumption and overall U.S. infrastructure, he said, adding the U.S. labor situation is improving as weekly unemployment claims are declining. "Core inflation has remained stable at around 1.5 percent excluding food and energy," Hall said. The housing crisis has bottomed out as California and Florida have had 14 consecutives months of increased numbers in purchased/sold homes, he said. This data has a direct effect on consumer purchasing.

"We need to grow smarter this time, preventing asset bubbles from developing in the first place," he advised producers. "Lastly, as producers within agriculture, you've got to be prepared for the recovery."

"I think we as consumers will save a little bit more, but that does not mean we will stop spending altogether." He said that the national definition of the savings rate doesn't include two things: appreciation of home and 401(k) retirement accounts. "I think the Great Recession has prompted people to be more frugal and temporarily increase the savings rate. In terms of the long run, spending is too ingrained in the mindset of the consumer, but they will exhibit a smarter consumption pattern."

Hall said prices for agricultural commodities have increased, but farm-related expenditures have increased as well. For the 2007-2008 period, agriculture net farm income was $87 billion. In 2009, that slid to $57 billion in net farm income. However, five of the most profitable years for agriculture have been from 2000-2008.

Looking ahead, Hall said fuel prices heading into the spring could reach $2.75 a gallon. "Natural gas is at an all-time low. Many farmers are buying on the spot market instead of buying futures." He projects by summer 2010, gasoline prices will still be in $2.60 to $2.65 per gallon range.

Hall wrapped up his presentation emphasizing that the economic recovery will be slow. "We need to grow smarter this time, preventing asset bubbles from developing in the first place," he advised producers. "Lastly, as producers within agriculture, you've got to be prepared for the recovery."

He said there was a 15 percent drop in the number of producers in the horticulture field from a year ago. "That land, equipment, employee and customer base has to go somewhere," he said, which creates opportunities for producers to expand their business for "cents on the dollar" or hire newly unemployed, talented workers. "We've got to be thinking about those types of opportunities," he said. "We have to be smart in capturing those opportunities that are out there, particularly in times of economic recovery. Now is the time to be progressive-minded."

Meanwhile, change has come to Washington and its affecting agriculture in a big way, said Bob Stallman, president of the American Farm Bureau Federation during his keynote address at the conference.

Stallman said proposed climate change legislation will have negative effects on agriculture. "The climate change bill is negatively affecting farmers, further squeezing our profits in production agriculture," he said. "Change has come in D.C. and things are different than they have been in the past. The attitude is not all that positive for modern agriculture."

Stallman said a mandatory cap and trade system on high-carbon fuels, such as oil and coal, would restrict those fuel sources. "The theory is, and proponents would like you to believe, the development of solar and wind energy will fill the gap. There's been a lot of happy talk, leading one to believe this would be good, but it will lead to higher energy prices. This is being touted as a positive for U.S. agriculture. What they don't tell you is what will happen to energy costs." He said this creates an artificial cap on the use of fuels that we have now and replace that with wind and solar energy. "What happens if they are not replaced?" he asked.

Landowners, whether they are farmers or not, will have to make decisions on whether to plant trees or produce a food crop. Stallman cited research done by Dr. Bruce McCarl, Texas AgriLife Research economist and Nobel Peace Prize recipient, in the area of carbon capture in agriculture. "It's predicted 40 million acres in cropland will be planted in trees, downsizing agriculture 20 percent," Stallman said. "By 2050, we will need 70 percent more food on current cropland. This doesn't sound like a good plan for us, so we are opposing this."

An audio interview with Bob Stallman, president of the American Farm Bureau Federation, accompanies this report.
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Economist sees positive indications for grain markets in 2010

Source: Texas A&M AgNews

An interesting set of circumstances is setting up for grain markets and future prices in 2010, said a Texas AgriLife Extension Service economist. As economic recovery continues, Dr. Mark Welch said , more money is flowing into commodities, which is a positive for grain markets. "People are buying commodities as a hedge against inflation," Welch said. "There's a lot of money coming in since March, especially a lot of index fund activity."

One of the key factors to watch heading into 2010 is the soybean market, Welch said. Record planting in South America could lead to a bumper soybean crop, which will "lessen supply concerns worldwide," even with growing demand. "We could see a significant increase in corn acres here in the U.S. as a result of a large soybean crop in South America," Welch said. "If it's short, the markets will try to buy acres in the U.S. corn belt. That will be a positive for grain prices."

Meanwhile, favorable conditions are shaping up for the price of fertilizer. Welch said anhydrous ammonia was around $680 a ton last spring with a forecast pricing model of $430 a ton in the spring of 2010. "That will be the cheapest since 2005," he said. "That will encourage more farmers to plant corn. Higher fertilizer prices generally will make planting soybeans more attractive; lower fertilizer prices increase the net returns from corn. If the price of nitrogen fertilizer stays at the spring-projected prices, we could be looking at a very large corn crop in 2010."

With increasing demand for corn, Welch sees a positive outlook for corn prices heading into the New Year. "Corn, I think, is going to be strong since we've got high demand from both feed and fuel," he said. "Wheat demand is flat; soybeans are the big question. We'll have enough if South America comes through. But if China continues to import soybeans and we have a short crop in South America, it could get really interesting. Rice carryover stocks are tight again as well."

A shortfall in monsoon rains in India this past summer has raised speculation that they could move to import rice, Welch said. "If that occurs, it will add demand pressure to an already tight supply situation, and the price response could be significant."

To receive Welch's market newsletter, e-mail him at jmwelch@ag.tamu.edu.