

Special Interest Articles:

- Insect control is essential
- Blister Beetles
- Bedding impact on flies
- Blackleg



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Insect Updates

Insect control proves essential in livestock production

Fly season is in full swing and it is essential that insect control is emphasized since these pests can lead to disease and decreased growth rates in livestock.

According to my colleague Ralph Williams of Purdue University, insects can be problematic in both pasture and confinement settings.

"Sometimes we forget that when we are irritated by

mosquitoes, we can go inside," says Dr. Williams. "Livestock are out there all the time, so insect pests are more than just a nuisance."

Pastured cattle fight face flies (not in Texas) which transmit pink eye, and horn flies, biting flies that result in reduced weight gain and feed efficiency and economic loss.

In confined operations, stable flies are a source of direct

irritation to cattle and cause up to \$1 billion in loss annually.

When dealing with confined animals, it is important to reduce breeding sites for flies by focusing on manure removal and waste management. In pasture situations, insecticide ear tags are one of the best methods for fly control.

When dealing with any species of livestock, sanitation is the first step to controlling flies and other insects.

Reducing flies helps keep herds healthy

Controlling flies could mean happier, healthier and heavier livestock.

Horn flies are small flies that feed on blood of cattle and sometimes horses. Young animals are more susceptible to horn flies and large numbers of feeding flies can cause lower weights.

"Weaning weights of calves

with an average of 200 or more horn flies during the summer are about 15 lbs less than those that are protected from horn flies," Lee Townsend, extension entomologist with the University of Kentucky says.

Since horn flies spend most of their time on their host, they are easy targets for insecticide treatments such as

dust bags and ear tags.

It is important for producers to know that some flies can develop resistance toward certain insecticides over the years. To prevent horn fly resistance, rotate annually the type of chemical being used, only treat cattle with more than 200 flies and remove ear tags after fly populations begin to decline in the fall.

Beware of blister beetle toxicity

Every year around this time I discuss the blister beetle in my newsletter and for good reason. Due to the drought this year many are getting hay from out of the state and that puts cattle and horses in danger for blister beetle toxicity.

Blister beetles attack flowering alfalfa and soybean crops and this puts livestock at risk. Hay that contains blister beetle body parts can put cattle off their feed and kill horses.

The blister beetle males produce a cantharidin toxin

inside their gut and share this with the female during mating. The toxin never leaves the body of the blister beetle even in death and when dried up.

Blister beetles are feared by horse owners because they can cause colic, diarrhea, bloody feces, body tremors, fever or death if ingested, but the toxin also causes problems if ingested by cattle.

A North Dakota State University publication says that the lethal dose of cantharidin is approximately 1 milligram per

kilogram of horse body weight. This means that about 200 blister beetles could have levels of toxin sufficient to kill an adult horse.

In addition, an average of 5.0 mg of cantharidin has been found in striped blister beetles, which indicates that 30 to 50 adults could be potentially lethal. However, even a few beetles may cause colic in horses.

If concerned contact me.

Cattle Care

Bedding choices impact fly control



“In the 2010 study pine shavings produced significant numbers of stable flies; however sawdust still produced the fewest.” Jessica Starcevich

Stable flies and house flies harm dairy cattle and develop as maggots in moist organic debris and are readily found in calf bedding. Research conducted by the University of Minnesota looked to see which source of bedding was a better choice for fly control.

Research pens were cleaned and then bedded with straw, pine-shavings or hardwood

sawdust for 12 weeks. Additional bedding was added as needed.

Heifer growth and cleanliness was not affected by bedding source.

Samples from the bedding packs indicated that pine shavings and hardwood sawdust contained fewer developing house flies and

stable flies than pens with straw bedding.

Although the straw had greater numbers of flies it also had larger numbers of beneficial fly-killing wasps.

It is best to use sawdust when possible but straw is economical. Although straw will produce more flies it will also produce more natural beneficial wasps.

Mastitis-causing organisms matter

Research published in the May *Journal of Dairy Science* says that it makes a difference as to which coagulase-negative *staphylococcus* (CNS) species infects cows in a herd.

Researchers in Belgium tested milk samples and found that *Staph. chromogenes*, *Staph. simulans* and *Staph. xylosus* induced an increase in somatic cell count that is comparable with that of *Staph. aureus*.

The group concluded that all CNS are minor pathogens but special attention should be given to the previously listed species because of their impact on somatic cell count.

Water concerns / Drought assistance

Cattle across Texas are dying after drinking too much water. There are no hard numbers for this impact but reports are on the rise.

Cattle being moved from withered pastures to new ones are taking in too much water too quickly and dying within minutes. This is known as water intoxication and it can

occur in humans too. Too much water can throw off cell chemistry and lead to death.

On another note, USDA Secretary of Agriculture Tom Vilsack announced in early August that the Farm Service Agency (FSA) will modify Conservation Reserve Program (CRP) policies to provide additional help to those farmers

and ranchers affect by the drought.

Policy changes:

- FSA is permitting farmers & ranchers to extend emergency grazing period from 9/31 to 10/31, without additional payment reduction

- FSA will allow producers to utilize harvested hay from expiring CRP acres

Working with your veterinarian

In keeping with tradition of mentioning cattle issues in addition to insect related topics, I wanted to highlight this article. I have referenced it so those interested in more information can look it up directly.

<http://www.cattlenetwork.com/cattle-resources/baby-calf-health/Working-with-your-veterinarian-122845874.html>

good points that all cattle owners should take into consideration with dealing with their local veterinarian or when trying to gain a relationship with their local veterinarian.

As many of you know, it is becoming harder and harder to find rural veterinarians that are able and willing to come to the farm during an emergency. This article does a great job of discussing why

that is and how one would go about establishing a successful relationship with their local veterinarian.

The key point mentioned is that everyone should establish an everyday working relationship with their veterinarian and set up regular visits, don't just expect your veterinarian to drop everything for you after hours when they don't even know who you are.

I felt this article had some

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I hope to provide more up to the minute information on topics and insects that are important to the livestock veterinary market.

Pesticides Update/Outlook

Registrants Request Voluntary Cancellation of Dicofol

Memorandum of Agreement with EPA dated May 17, 2011, the registrants of dicofol requested voluntary cancellation of all their dicofol registrations.

Dicofol is the last organochlorine pesticide to go

through a cancellation process to terminate all its remaining uses in the U.S.

Agan Chemical Manufacturing, Ltd. and Makhteshim Agan of North America, Inc., have ceased all production of dicofol as of May 17, 2011 and have

agreed to cease all sales and distribution of the pesticide by October 31, 2013.

Dicofol is registered as a miticide on cotton and several other agricultural crops and on non-residential lawns and ornamentals.



Human & Animal Disease & Health

Blackleg may be a concern in drought conditions

With the current drought conditions Texas and other states are dealing with it is a good idea for herd owners to be mindful of potential health problems from blackleg. As cattle graze on shorter and shorter forage, the chances of picking up soil-borne pathogens that cause blackleg will increase.

Blackleg is a disease caused by the infectious bacteria *Clostridium chauvoei* that affects cattle worldwide.

Cattle can become exposed to blackleg from contact with bacterial endospores

in the soil. Blackleg can occur in very young calves but it generally affects animals between six months and two years old. In rare incidents, losses are seen in adult cattle. Blackleg is known to affect calves in good condition and growing rapidly, the animal dies rapidly without any outward signs of illness. Some noted clinical signs include lameness, loss of appetite, fever and depression.

Animals will die quickly, within 12 to 48 hours, and treatment usually fails.

If by chance an animal does survive, it will likely suffer from a permanent deformity.

It is impossible to prevent contact with the infectious agent; therefore vaccination is the only way to effectively control this disease. Calves should be vaccinated between 2 and 3 months of age. Calves should receive two doses of the vaccine during this period; the second dose being administered 3-6 weeks after the first dose.

Q Fever rears its head in western states

An outbreak of Q fever was recorded and being investigated in Montana in July. The investigation is part of a multi-state outbreak of illnesses in humans and animals associated with goats from Washington.

Three known premises in MT received positive goats from WA; two had confirmed Q fever illnesses in humans and animals.

Q fever is a zoonotic disease that is passed from animals to humans; it is caused by the

bacteria *Coxiella burnetii* and is shed during birthing and in feces, urine and milk. Humans become infected by breathing barnyard dust particles contaminated by the bacteria or by ingesting the bacteria.

Q fever can cause acute or chronic illness in humans. Most have no symptoms but they could exhibit headaches, fevers, muscle aches and a variety of mild flu-like symptoms. Some complications could lead to

pneumonia and liver and heart problems. Those most vulnerable include pregnant women, the elderly and those with weakened immune systems.

It can cause stillbirths and abortions in sheep and goats but generally goes undetected. The bacteria are endemic in sheep and goat populations.

Exposure to the bacteria is limited by disposal of birth products and aborted fetuses at facilities housing sheep and goats.

Closely monitor medicated mineral intake

Medicated minerals are available and frequently used to help prevent the blood-borne disease, anaplasmosis. It is essential that mineral is taken up by cattle consistently and appropriately in order to successfully prevent anaplasmosis.

It is important for cow calf operators to monitor mineral

consumption closely to be sure the label-recommended amounts are being consumed by the cattle.

The most commonly used medication for anaplasmosis is chlortetracycline (CTC) but this is also used to treat other infections at lower rates. It is imperative that the label rate for anaplasmosis is achieved

in order to get proper prevention.

Mineral feeders and blocks should be placed in loafing areas, near water sources, in shady areas, or any other location that tends to be popular for the herd to congregate. One station for every 30 to 50 cows is recommended.

Tick Quarantine Removed

The remaining portions of Starr and Hidalgo counties have been released from the temporary preventative quarantine zone.

"This shows that the collaborative efforts between the USDA-Veterinary Services Tick Force, TAHC, the Texas cattle industry and local land owners, are working successfully," said Dr. Ellis. "TAHC and USDA will continue to work with local land owners to maintain effective surveillance efforts to help ensure this pest does not reoccur in the area."

Special Topics of Interest

Redefining sustainability

Sustainability means different things to different people; activists have tried to convince some consumers it means returning to production systems like our grandparents day.

But as John Capper, PhD, animal scientist, puts it, less-intensive production can work for some producers but our greatest opportunities is to enhance sustainability to improve overall productivity per unit of land and other inputs.

In animal agriculture, sustainability is where improvements in productivity reduce the environmental "footprint" of each animal and the industry overall. The volume of beef that took 3,000 animal days to produce in 1977 only took 1,900 animal days in 2007, using less land, less water, less feed and producing less waste.

Capper also noted that carcasses from conventional cattle average 800 lbs in 453 days, natural cattle average 714 lbs

in 464 days and grass-fed cattle average 615 lbs in 674 days. Based on this information shifting U.S. beef production to "natural" would require 14.4 million more animals and shifting entirely to grass-fed production would require 64.6 million more animals to produce the same volume of beef as conventional practices. Grass-fed will also need 131 million more acres of land, 468 billion additional gallons of water and produce 134 million extra tons of greenhouse gas emissions.

U.S. burger market sizzling

Burger consumption in the U.S. is significantly higher now than it was just two years ago. Nearly half of all consumers say they eat a burger at least once a week.

The study also found that 36% of consumers ate a burger because they were craving it.

Other findings from the study include:

- Younger consumers are highly interest in vegetarian burger options.
- The importance of health-halo attributes such as all-natural, hormone-free, steroid-free and antibiotic-free has grown since 2009.
- The most commonly offered cheese on burgers at limited-service restaurants is American, but Cheddar is by far the most popular in the full-service segment.

An interesting note about this article is that it mentions how people want to know where the meat is coming from but it also says burger consumption continues to be high due to quick-service value menus. It might be me but those statements seem to be an oxymoron.

Whatever the reason, burger consumption is high and probably will be for awhile.

Illinois farms open the doors to Chicago moms

A group of Illinois farm families are opening their doors to moms from the Chicago area.

In a new program called "Field Moms" launched by Illinois Farm Families, Chicago area moms are given the opportunity to see first-hand where their food comes from and have their questions answered by the farmers who

grow it.

Surveys taken by moms showed that moms have a lot of questions about food; chemical use and hormones were two of the top issues.

It was also revealed in the surveys that moms have a high regard for farmers and value them but they aren't sure farmers are

always doing the right thing.

The farm tours will take place over a 12-month period and will include crop, dairy, beef and pork farms.

Moms will be encouraged to blog about their experiences and share with other moms what they have learned.

Merck announces new name

Merck's animal health division, formerly known as Intervet/Schering-Plough Animal Health, announced their new name of Merck Animal Health on June 29, 2011.

"The name change reflects Merck's

commitment to animal health and its complementary role to the overall business," said Raul Kohan, president of Merck Animal Health.

"We are unwavering in our commitment to veterinarians, producers, pet owners

and society as a whole. We aim to generate additional value and sustained growth by continuing to provide integrated solutions with innovative animal health products and services to meet the evolving needs of our customers."

Journal Reviews

Chemical composition and fumigant toxicity of the essential oils from 16 species of *Eucalyptus* against *Haematobia irritans* (Diptera: Muscidae) adults. 2011. Juan et al. J Econ Entomol. 104: 1087-1092.

Oils were extracted from various *Eucalyptus* by hydrodistillation. The chemical composition of these oils was determined to be cineole, pinene, terpineol, and cymene.

The vapors from these essential oils and their major components were found to be toxic to horn fly adults. All oils were tested for a 50% knockdown rate.

The Impact. The addition of *Eucalyptus* oils in the fight against horn fly adults is a

great way to start using more natural products to combat these flies and off-set any building resistance. At a 50% knockdown rate some control will occur but not at the same level as conventional insecticides.

Seasonal abundance of stable flies and filth fly pupal parasitoids (Hymenoptera: Pteromalidae) at Florida equine facilities. 2011. Pitzer et al. J Econ Entomol. 104: 1108-1115.

Stable fly surveillance was conducted at four horse farms in Florida with the use of alsynite sticky traps. Three traps were placed on each side and adults were collected on a weekly basis.

pupae were collected weekly from 3-5 different locations at each farm. Pupae were brought to the lab and observed for adult fly or parasitoid emergence.

Stable fly numbers varied throughout the year and by location but the high

numbers were recorded during the spring.

The Impact. Like FL, stable fly numbers vary in TX by season and parasitoid wasps from the *Spalangia* sp. are native to TX and do their job controlling stable fly and house fly pests.

In addition, stable fly and house fly

Assessment of *Stomoxys calcitrans* (Diptera: Muscidae) as a vector of porcine reproductive and respiratory syndrome virus. 2011. Rochon et al. J Med Entomol. 48: 876-883.

The authors investigated the vector potential of stable flies in the transmission of porcine reproductive and respiratory syndrome virus under laboratory conditions.

Wild stable flies were collected near pig farms in North Carolina and tested for the virus, all tested positive. Lab reared stable flies were fed blood infected with the virus and none were able to transmit the virus.

The Impact. Despite the efforts of the authors, stable flies do not carry the porcine virus. Stable flies have still not been found to vector any pathogens or viruses despite their contact with animals.

Evaluation of surveillance methods for monitoring house fly abundance and activity on large commercial dairy operations. 2011. Gerry et al. J Econ Entomol. 104: 1093-1102.

The house fly activity on three large dairies in California was monitored during peak fly activity by using spot cards, fly tapes, bait traps, and Alsynite traps.

Counts for all monitoring methods were significantly related with spot card counts and fly tape counts significantly related to bait trap counts 1-2 wks later.

The Impact. Spot cards are a useful way to monitor house flies for dairy IPM programs.

Distribution of *Rhipicephalus (Boophilus) microplus* and *Rhipicephalus (Boophilus) annulatus* (Acari: Ixodidae) infestations detected in the United States along the Texas/Mexico Border. 2011. Lohmeyer et al. J Med Entomol. 48: 770-774.

Seven hundred ninety tick specimens were submitted to the National Veterinary Services Laboratory for species identification.

The ticks were identified as *R. microplus* and *R. annulatus* and were marked geographically in a system database.

The Impact. The submitted ticks were collected from 11 Texas counties and compared to their natural distribution with Mexico.

Response of Mexican *Rhipicephalus (Boophilus) microplus* ticks to selection by amitraz and genetic analysis of attained resistance. 2011. Fragoso-Sanchez et al. J Entomol. 8: 218-228.

The aim of this study was to describe the genetics of amitraz resistance evolution and to obtain the independent genes number involved.

resistant strains were tested against amitraz on naïve-heifers. The susceptible strain was controlled 29-fold but the resistance strains showed lots of genetic interaction with recessive and dominant genes.

The Impact. Although the resistant strains were found to exhibit several genes that cause amitraz to not be effective, this does not mean native strains of ticks would react the same way.

One susceptible strain of ticks and two

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Jay (5) & Dex (17 months)

Acaricidal effect of essential oils from *Lippia graveolens* (Lamiales: Verbenaceae), *Rosmarinus officinalis* (Lamiales: Lamiaceae), and *Allium sativum* (Liliales: Liliaceae) against *Rhipicephalus (Boophilus) microplus* (Acari: Ixodidae). 2011. Martinez-Velazquez et al. J Med Entomol. 48: 822-827.

The acaricidal effects of essential oils extracted from Mexican oregano leaves, rosemary leaves, and garlic bulbs was evaluated against 10 day old tick larvae.

Oregano and garlic were found to have 90-100% mortality at all concentrations. The rosemary had very poor results at all concentrations.

The Impact. Results show potential for natural products to assist in controlling tick larvae.

Molting success of *Ixodes scapularis* varies among individual blood meal hosts and species. 2011. Brunner et al. J Med Entomol. 48: 860-866.

The authors researched the effect different host blood meals have on the molting success of *Ixodes scapularis* larvae.

It was found that larvae feeding on white-footed mice, veeries, and gray catbirds had higher molting success.

The Impact. The molting success of *Ixodes* larvae affects the likelihood and ability to acquire Lyme disease and carry it to a human host.

Diversity, geographic distribution, and habitat specific variations of microbiota in natural populations of the chicken mite, *Dermanyssus gallinae*. 2011. Valiente Moro et al. J Med Entomol. 48: 788-796.

The chicken mite is an economically impacting parasite that is the vector of many pathogens.

array of bacteria found in association with *Dermanyssus gallinae*. By looking at the bacteria the authors planned to separate the various populations of chicken mites.

The Impact. The results provided a way to separate various populations of chicken mites by the bacteria associated with them.

The authors researched the

Livestock/veterinary website
<http://livestockvetento.tamu.edu>

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