Insect Updates

Treating Stable Flies in Pastures

Stable flies have been found to cost the US cattle industry close to $1 billion each year, due to reduced milk production in dairy cows, decreased weight gain in beef cattle, and lowered feed efficiency.

Stable flies are not only a problem in barnyards and stables for which they are named, but in pastures as well. The move of stable flies to the pastures is in part due to the use of large bales of hay placed in fields as supplemental feed for cattle.

These feeding sites where wasted hay, manure, and urine accumulate produce an ideal habitat for stable flies.

Recent research from USDA – ARS in Lincoln, Nebraska found that sprinkling cyromazine, an insect growth regulator, onto hay-feeding sites reduced the number of emerging adult stable flies by 97 percent.

Researchers also suggest a “push and pull” strategy where catnip is used to drive stable flies to another location containing harsher chemicals or traps.

More to come on this and I will keep you posted.

TAHC Releases a Portion of the Fever Tick Temporary Quarantine Area in Starr County

Texas Animal Health Commission (TAHC) has announced the release of a portion of the remaining temporary preventative fever tick quarantine area (TPQA) in South Texas (Starr County), effective February 15, 2013.

TAHC established a TPQA for portions of Starr County in July, 2007 following findings of cattle fever tick infestations. The size of the area currently being released consists of 23,478 acres. This reduces the quarantine area in Starr County to 33,024 acres.

Previously 42,111 acres and 45,969 acres were released.

The release of this portion of Starr County temporary quarantine area rescinds all movement restrictions placed on the livestock and wildlife within that area.

The newly released area is located west of FM 649 in the northwestern part of the county.

A full description of the remaining Starr County TPQA may be found at www.tahc.texas.gov.

Mexican Honey Wasps

Borrowed from Molly Keck, IPM Program Specialist in San Antonio

Something new to homeowners is the presence of big ball shaped hives in trees. These are not bees, as many might think; they are in fact Mexican Honey Wasps.

The Mexican honey wasps are very small in size, 5-7 mm, similar in size to house flies and they are non-aggressive.

The wasps look nothing like bees, in that they are not hairy, much smaller, nearly all black, and have none of the markings of a bee.

Mexican honey wasps, Brachygaster mellifica, are a social wasp that builds paper nests in the canopy of trees and shrubs. They are native to Texas and range from Texas to Nicaragua. There are 16 different species but only one thus far reported in Texas.

Colonies can be quite large, containing up to 18,000 wasps, and can cause concern when spotted by homeowners in the branches of their trees. The hive can be the size of a large basketball or shaped like a football.

As long as you leave them alone, they will leave you alone. They are considered beneficial insects and are nectar gatherers, pollinators and known to predate upon harmful insects such as the Asian citrus psyllid, a pest that causes citrus greening in citrus.
Cattle Care

Involving your vet in parasite control

A good parasite-control program can provide some of the highest economic returns of any management practice available to beef producers, but timing and product selection are critical.

Most producers do not consult their veterinarians in their decisions but there is value in involving a veterinarian in planning parasite-control program.

A study out of Iowa State University shows that parasite control can return as much as $201 per head due to better health, improved weight gains and reproductive efficiency.

A good deworming program typically can improve calf weaning weights by 25 lbs – worth close to $50 in today’s market – for a treatment cost of about a penny per pound or $5 for a 500-pound calf.

Resistance among worm species affecting cattle has not become a widespread problem, but veterinarians and parasitologists have become concerned as some resistance populations have turned up, particularly *Cooperia* spp.

Timing is an important consideration in spring deworming; most cases (10% of worms on the ranch) are in the animals while 90% are on the pastures. Worms that overwinter on pastures move up from the ground onto forage plants during March and April in the south.

Human & Animal Disease & Health

Crypto similar in organic and conventional dairies

A Swedish study reported in the March 2013 Journal of Epidemiology & Infection indicates that there is a similar prevalence of *Cryptosporidium* spp. in organic and conventional dairies.

The researchers sampled 221 calves and 259 cows from 13 organic and 13 conventional dairy herds.

The results indicate that the prevalence of Crypto was similar in both organic and conventional calves (44.7% vs. 52.3%), as well as in the cows (3.1% vs. 3.8%). Three different crypto species were identified.

Cryptosporidiosis is mainly found to occur in very young animals, among calves 1 to 3 weeks old are the most susceptible. Clinical signs may include anorexia, diarrhea, tenesmus and weight loss.

Abandoned cattle near Fukushima have radioactive elements

Cattle found near the nuclear power plant struck by an earthquake and tsunami 2 years ago are found to be contaminated with radioactive elements.

Thousands of cows were left in the restricted area following the natural disasters occurring in March 2011. The power plant released radioactive materials into the prefecture and the area wasn’t declared stable until Dec 2011.

6 tips to reduce exposure to *E. coli*

Disease causing bacteria, like *E. coli*, can have very negative effects on calves, especially those less than 5 days old.

Jason Leonard, Calf and Heifer specialist with Land O’Lakes Purina Feed suggests the following tips to aid in reducing exposure of newborn calves to *E. coli* and other bacteria:

- Clean and disinfect calving pens in between every birth
- Maintain normal stocking density in calving pens even during high calving times (at least 144 sq. ft./cow). Overcrowding increases the bacteria amount.
- Do not move the cow into the calving pen until she is starting the birthing process. This decreases disease shedding time in the environment where the calf will be born.
- Move the calf from the calving pen into a clean individual pen within 2 hours of birth.
- Do not allow the calf to suckle its mother. Udders are often contaminated with bacteria that can harm the calf.
- Dip the navel of the newborn calf immediately after birth, 7% tincture of iodine is recommended but a 50/50 blend of Nolvasan and 70% rubbing alcohol is a good alternative if the iodine is not available.
Special Topics of Interest
Where have all the beef cows gone?

Cattle numbers are down again, lowest level since 1952, according to USDA. Beef cow numbers are at their lowest since 1982 due to the 2012 drought. Other reasons for the decrease are high feed and forage prices, persistent drought in the Southern Plains and the widespread Midwestern drought of 2012.

The 2012 drought was just the latest event to result in the liquidation of cows that has been accelerating since 2007.

Nationally, beef cow herds have dropped by 3.6 million head (11%). It has been difficult for the beef industry to compete for high priced feed and limited land that is being converted to corn and soybean production.

What will it take to turn the herd decline around?

The answer is more rain, more crop production, and more pasture and forage production. Larger crop and forage production would increase availability and lower prices of these critical feedstuffs.

Finished cattle prices should strengthen into the spring as beef supplies drop.

If crop and forage production returns to near normal, the cattle industry is poised for multiple years of favorable returns and expansion.

Consumers’ pain worsens with tax hike, gas costs

Rising taxes and soaring gasoline prices have slashed spending power at the lower end of the economy, according to fast food executives, discount retailers, and other companies catering to budget-conscious consumers.

People that have the least flexibility in their budgets are the ones that are suffering the most from a series of blows: the Jan 1 expiration of a 2% cut in payroll taxes, a delay in income tax refund payments, and a 30 cent increase in gasoline prices.

“Between gas and this tax, it’s a one-two punch to the consumer,” said Steve Nevill, a managing director of AlixPartners. “People are going to trade down. You’ve basically taken money out of people’s pockets.”

Should we feed the bears?

Polar bears are not seeing enough cold and snow now-a-days, and this is a problem for everyone.

The demise of polar bears may affect how the cattle industry business is conducted in the near future.

It is estimated that there are only 20,000 to 25,000 bears currently worldwide and they could become extinct within the next 30 to 40 years.

The plight of polar bears is tied to the rapidly declining Artic sea ice, which is down 409,000 square miles from the 1979 to 2000 average.

Polar bears are sea ice-dependent because they hunt blubber-rich seals from ice floes. The ice floes allow the bears to advance farther out into the sea where the seals are found. The sea ice has started to form later in the year than in the past and this forces the bears to stay on shore for longer periods of time, reducing their feeding season.

All of which amounts to poor nutrition for the bears, and a host of predictable problems: declines in body condition, lower reproductive rates, lower survival rates and a declining population.

There is much concern about polar bears and that is where farmers come in. There is discussion to start helicoptering food to them at a fee of $32,000 / day.

This affects farmers in the fact that polar bear decline is associated with Global Warming and livestock production has been wrongly accused of causing this global change.

That’s why you should care about the plight of polar bears.

Should we feed them?

Those images of helicopters airlifting food to starving polar bears would surely make every news outlet in the country. And so will the images of polar bears left to starve.

Another reason to get calcium from food rather than supplements

To many a calcium supplement is a quick fix when you are busy but a new study shows that supplements may lead to a higher risk of heart disease for men. Actually consuming calcium-packed foods may be the better way to go.

The study, published in the journal JAMA Internal Medicine, found that men who took at least 1,000 milligrams of calcium supplements daily had a 20% higher chance of dying from cardiovascular disease.

But the results are not the same for women.

The lead author, Qian Xiao a cancer prevention fellow at the National Cancer Institute in Bethesda, Md, says that the findings add to the “evidence base,” but more research is needed to “clarify the underlying mechanism.”

Foods that are naturally high in calcium might be a better choice than supplements. Good sources of calcium include low-fat dairy foods, beans and green leafy vegetables.
Is beef in danger of becoming a “luxury” item?
The cattle industry was aware that shrinking herd sizes and steady demand for beef would raise prices but some in the industry are worried.

Economists are wondering if beef prices will rise to the point that consumers will see it as a luxury good and choose alternatives such as chicken, pork and fish.

It was recently reported by USA Today that beef prices have increased by an average of a dollar per pound since 2007 and are expected to increase by up to an additional 10% before the summer.

Grocers and restaurants will be searching for ways to maintain consumer demand. Restaurants have previously avoided passing on high food costs to consumers by serving smaller portions but that might change.

Mike Hoffman, meat director at Dahl’s Foods in Des Moines, has adopted the strategy of selling higher-priced beef cuts in 12 oz packages instead of 16 oz. He has also started selling smaller, cheaper cuts for $4 to “keep costumers’ taste for beef alive.”

Experts expect consumers to continue to eat beef but may exchange middle meat products for cheaper options like ground beef and other value cuts.

Beef consumption was 57.3 lbs. per person in 2012 and is forecast to fall to below 55.5 lbs. per capita in 2013 and below 53 lbs. per capita in 2014.

Journal Reviews

Stable fly populations were sampled with CO2 baited cloth trap (Nzi trap) each day throughout summer and autumn from 1997 to 2001 in Canada.

Fecundity, development and survivability was determined and/or calculated for each year.

Over the study period 2,512 females were collected, 42.4% of these were unmated.

Years of higher rainfall had increased fecundity but no apparent effect on survival rates.

The Impact: The value of this study is centered around understanding these flies and finding better ways to fight them in the field.


Five isolates of Bacillus thuringiensis were tested on stable fly adults for mortality.

The isolates of Bt were given to the adult flies in their diets containing blood only, sugar only, and both sugar and blood combined.

Bt tolworthi had not effect on adult mortality regardless of the feeding substrate. The remaining isolates tended to cause the greatest mortality when given in blood alone. Bt thompsoni was the only consist isolate when fed at the range of 0.21 to 50.0 µg of protein per ml of blood. This isolate also caused mortality when applied topically.

The Impact: It is necessary to look for natural alternative insect control now-a-days but blood feeding pests are limited. This data shows promise for using Bt to livestock pests.


Two insect growth regulators were tested in the lab against immature stable flies. Both IGRs had significant inhibitory effects on immature development.

Topical treatment of pyriproxyfen on adult stable fly females had negative effects on oviposition and egg hatching but only at the highest doses. Also the flies had to be 1-3 days old, afterwards there was little to no effect.

The Impact: These results show potential of using pyriproxyfen as part of an integrated stable fly management program on both adults and larvae alike.


This study looked at the phenology of stable flies attacking WNV - infected pelicans on a refuge close to pastured and confined cattle.

Coroplast cards used for monitoring found temporal dynamic differences from three habitats (peninsula, pasture, confinement lot).

Adult abundance was lowest at confinement lots but this was the only location where larval development was identified.

All the traps in the pasture collected stable flies, with the ones adjacent to cattle collecting the most. Adults were also collected on the peninsula supporting the pelicans’ nesting site, the attractant is unclear.

Overwintering was found to not be successful at all three locations.

The Impact. IN northern regions, stable flies do not overwinter in locations where they feed. In addition, breeding sites are not always the same as the feeding locations.

The fever behavior in house flies was studied in response to the fungal entomopathogen, Beauveria bassiana. It was found that infected flies preferred higher temperatures and allocated more effort to thermoregulation than uninfected flies.

The flies could not overcome the infection but they were able to alter their survival and lay more eggs relative to infected flies maintained under constant conditions. However, the flies that fevered had lower egg viability suggesting a possible cost.

The Impact. The researchers showed that fever did not impact or effect the control potential of the fungus. Another alternative for treating house flies naturally but thus far with limited positive results.


Urine volatiles from different ungulates (cows, horses and sheep) were tested as bait for tabanids using Nzi traps in the early summer of 2011. Two particular species were collected most often. The use of horse urine increased catches of both species and sheep urine increased the catches of one species. In addition, extracts were tested in the lab.

The Impact. Knowing what attracts horse flies will assist in collecting, killing and controlling for them in the field.


The chemical cues by lesser mealworm beetles are still unknown. A pheromone lure, fresh chicken droppings and chicken dropping volatile compounds were tested in two-choice pitfall bioassays in the lab and in the field. Results showed a preference for the pheromone lure over everything else and the attraction was increased with fresh chicken droppings.

The Impact. These results help to better design a better field trap for lesser mealworm beetle adults and larvae.


Commercially available, amitraz impregnated anti-tick collars were monitored on white-tailed deer over a 7 yr period for control of lone star ticks. The animals were held in confined areas in two groups: one treated, one untreated.

Efficacy expressed control percentages of 77.2 and 85% for nymphs and adults, respectively. These results show acaricidal collar treatments provide efficacies similar to those achieved when using ivermectin-mediated bait and ‘4-poster’ topical treatments.

The Impact. The use of the collars provides another viable technology for passively controlling ticks on feeding deer.

Determination of acaricide resistance in Rhipicephalus (Boophilus) microplus field populations of Argentina, South Africa, and Australia with the larval tarsal test. 2013. Lovis et al. J med entomol. 50: 326-335.

Bioassays were conducted to determine resistance levels and patterns of R. (B.) microplus populations. Field populations from Argentina, South Africa and Australia were tested in the lab. Nine compounds were tested from 5 classes.

Amitraz was found to have resistance in Argentina, synthetic pyrethroids were found to have resistance in all Argentina farms. In South Africa, one group was resistant to synthetic pyrethroids and pyriprol. Organophosphates and synthetic pyrethroid resistance was seen in Australia.

The Impact. Resistance appears to vary based on location and which products are commonly used. Bad thing is there is no consistency and this means cattle fever ticks are resistant to many classes of insecticides, causing limitations in controlling them.


The researchers wanted to see what effect vertically transmitted Arsenophonus and Rickettsia bacteria had on the locomotive ability of larvae of the three tick species listed.

Rickettsia increased motility while Arsenophorus decreased motility. In addition there was a difference between species with Amblyomma having higher locomotive speed than the other two species, and Dermacentor having higher motility than Ixodes on a flat surface.

The Impact. Tick motility plays a major role in survivability and reproduction. Tick motility could affect host-seeking success and bacterial infection may indirectly influence disease risk.

The attractants CO$_2$, 1-octen-3-ol, acetone, ammonium hydroxide, L-lactic-acid, dimethyl trisulphide and isobutyric acid were tested on the two tick species, in a Y-tube olfactometer bioassay. Only CO$_2$ was attractive to *Dermacentor* adults while *Amblyomma* was attracted to all but L-lactic-acid, dimethyl trisulphide and isobutyric acid.

The Impact. Some of these chemicals were found to be attractive to *Amblyomma* for the first time and provide additional options for controlling tick populations.

Species, developmental stage and infection with microbial pathogens of engorged ticks removed from dogs and questing ticks. 2012. Leschnik et al. Med Vet Entomol. 26:440-446.

200 ticks were collected by removal from dogs and from the location where dogs acquired the ticks. Out of the ticks collected from dogs, 22 were found to be infected with one of four pathogens. From the ticks collected in location, 44 were found to be infected. In addition, the ticks from the location site where found to have multiple pathogens within while those from dogs only had one pathogen.

The Impact. Pathogenic ticks are more commonly located in the field then on animals. Not sure why but more research is needed.


Research was conducted in burned, unburned, Red imported fire ants present or not present against lone star and Gulf Coast ticks. Results showed that lone star tick populations decreased in burned habitats significantly compared to unburned habitats. Gulf Coast ticks had greater survival in burned habitats compared to lone star ticks. Fire ants did not have an impact but are more of a factor to lone star ticks over Gulf Coast ticks.

The Impact. This information is great for Texas where the most common tick is the lone star tick. Burning and having fire ants are great for controlling lone star ticks but if you are down on the coast, fire ants won’t help and burning could increase the population of Gulf Coast ticks.


The researchers looked at the influence of temperature and precipitation on seasonal mosquito abundances, the prevalence of West Nile virus in northeast US, and the capacity for local mosquito communities to maintain and transmit WNV. Drought conditions were associated with a significant increase in the number of blood-fed *Culex* spp. and therefore higher WNV infection rates.

The Impact. It was found that there was a positive influence of drought on WNV amplification, increases in temperature and decreases in precipitation strongly correlated with WNV infection rates.


Researchers tested the hypothesis that *A. aegypti* and *A. albopictus* larvae were susceptible to dengue virus through 1) exposure to dengue in the larval environment and 2) exposure to infected tissue cultures.

In addition the infection rate was analyzed when larvae were exposed to multiple serotypes of dengue. Both species of larvae were found to be susceptible to 3 dengue serotypes regardless of exposure method. This indicates that dengue virus could spread among larvae within the larval habitat as well.

The Impact. Dengue virus was documented in Texas in 2012, although it is not found to maintain survival. This information shows that it might be possible for the dengue virus to sustain itself in TX.