

## Special Interest Articles:

- Stable flies
- Cattle Fever Tick
- De-worm nursing calves
- Cattle Health during drought



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## Insect Updates

### Stable flies – the flies on the walls

*Stomoxys calcitrans*, the stable fly is well known to many and unheard of by others. This house fly look-a-like causes serious harm and fear in cattle that is seen by cow-bunching, stomping and tail-swishing, which leads to milk loss. Many farmers don't realize that cow-bunching is due to that stable fly but assume hot, humid temperatures are to blame.

Similar to other flies, stable flies are quite prolific and

### Best management practices for fly control

It's that time of year when all livestock producers should be implementing fly management strategies. Fly control should be viewed as a good neighbor policy and having a positive economic impact on your livestock operation.

**1) Stable fly** – need organic matter, animal waste and moisture to reproduce; blood

females can "ovulate" 40-80 eggs per batch and have 10-12 "calvings" over a 21 to 25 day period, with some living up to 78 days in cool climates. Females need blood meals to reproduce while males feed on blood just because they can. A group of 40 stable flies on each cow can drop milk production by 30% per month.

The stable fly is capable of traveling long distances; with the right weather front this can be over a hundred miles or they

feeders with economic impact (no more than 20-25/animal); best control is sanitation

**2) Horn fly** – blood feeders that reproduce in fresh manure pats; located on shoulder/back region of cattle, economic thresholds of 200/animal; best control by ear tags, pour-ons, sprays, backrubs, dust bags, and feed thru product combinations

will just ride along on cattle trucks. Their home of choice is urine-soaked hay, manure piles (rotten ones), wet hay bales and grass clippings. A million stable flies can develop from the residue of a round bale feeding site.

The best way to control stable flies is with proper sanitation, controlling maggot development limits the number of biting adults. Pyrethroids (permethrin) work against the stable flies but have little to no residual, direct contact is key.

**3) House fly** – nuisance pest for humans not livestock but flourish in livestock habitats; adults are capable of spreading disease pathogens; utilize manure, organic matter, and moisture to reproduce; sanitation assists in controlling house fly numbers; minimize water and feed spillage

### TAHC releases Fever Tick Quarantine Zones

The Texas Animal Health Commission (TAHC) has released 59,100 acres of the temporary preventative quarantine zone in Starr County effective May 20 and all of the remaining portions of Maverick and Dimmit counties from the temporary preventative quarantine zone effective May 27.

In August 2007, the TAHC determined that fever ticks were present on multiple

premises in Maverick and Dimmit counties and a total of over 600,000 acres were placed under temporary quarantine, including part of Webb County.

The temporary preventative quarantine does remain in effect for the remaining 93,615 acres located in both Starr and Hidalgo counties. The preventative quarantine zone was imposed on July 2, 2009.

"This shows that with the collaborative effort between the USDA-Veterinary Services Tick Force, TAHC, the Texas cattle industry and local land owners, we are making significant progress in the eradication of fever ticks in south Texas," said Dr. Dee Ellis, TAHC State Veterinarian.

[http://tahc.state.tx.us/animal\\_health/fevertick/fevertick.html](http://tahc.state.tx.us/animal_health/fevertick/fevertick.html)

## Cattle Care

### Summer de-worming of nursing calves



*“Over the approximate 150 day period, weight gain advantage would total about 25 lbs additional weaning weight to calves in the treatment group.”*

Five de-worming trials were conducted at OSU; calves and cows were separated into four treatments: 1) non-de-wormed control, 2) de-worm calf only, 3) de-worm cow only; and 4) de-worm cow and calf. Ivermectin pour-on was used for the treated groups.

Initial studies indicated low worm infection rates during the first two years. De-worming

cows in late spring had no significant effect on cow summer weight gains up until calf weaning time.

Treating cows, but not their calves, resulted in a small advantage in average daily weight gains (0.1 lb/d) which resulted in a 15 lb advantage at weaning. Spring-born calves treated while nursing non-treated cows had

significantly greater daily weight gains (0.14 lb/d) and a 21 lb weaning weight advantage. Treated calves nursing treated cows had significantly greater average daily weight gains (0.17 lb/d) than untreated calves nursing untreated cows. The most profitable economic return for the de-worming expense was noted when the calves only were de-wormed.

### Beef cattle deworming strategies

Deworming beef cattle is very important to reduce internal parasites. Anthelmintic or dewormers are used to control internal parasites such as lungworms and gastrointestinal roundworms.

Parasites can lead to reduced performance in cattle. Losses can result from depressed feed

intake and conversion, lower average daily gain or milk production and lower reproductive performance. Parasites are also very dangerous for the health of the animal. They can lead to reduced immunity, reduced weight and the appearance of diseases like anemia. It is important to detect the signs of

infection; an effective tool is to conduct routine fecal analysis.

Cattle become infected when they ingest wet pastures at temperatures above 55 degrees. Deworming cattle in the fall and again at spring/summer turnout is the most effective. Nursing calves are the most susceptible to parasites.

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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.

### Follow labels, or else

When it comes to antimicrobials, farmers should follow the adage of “use them right or lose them.”

Christine Hoang, assistant director, Scientific Activities Division of the American

Veterinary Medical Association, operates on the premise that “it’s better to prevent a disease if you can.” She urges all to follow drug labels to a “T” or be prepared for the consequences.

Read product labels. “It’s that

simple,” says Hoang. “Read the label and follow it. If you don’t understand a label or want reassurance that you fully understand a label, visit with your veterinarian. If you follow your vet’s instructions, you should be OK.”

### Spring Cleaning Time Again – Dairy style

Time to prepare for the long hot summer:

1. Clean out high organic matter dirt in pastures & lots & add new dirt, especially in calving areas.
2. Clean your barn cooling fans now & when dirty.
3. Make sure sprinklers, foggers, etc, work.
4. Clean & rebuild pulsators.
5. Replace all milk hoses, wash hoses, pulsator hoses & jetter cup holders.
6. Check every cow in the herd for blind quarters.

7. Replace all floor mounted cow wash sprinkler nozzles each year.

8. Check the pipeline & bulk tank chemical concentrations.

9. Clean condenser fins on milk coolers.

10. Mow & spray careless weeds in all pastures.

11. Cull your chronic mastitis cows now.

12. Clean out the back third to half of free stalls at least 10- to 12- inches deep & add new sand.

13. Clean out cooling ponds. Pump out the water, clean out the sludge & spread it someplace where the cows don’t have access to it.

14. Let ponds sit dry for the sun to work on the bacteria.

15. Keep a stiff upper lip.

16. Clean out your mind, go visit other dairies. Some of them are doing amazing things & some are not. You can get new ideas or be glad you don’t own some of them.

# Pesticides Update/Outlook

## Products containing fenoxycarb gone Dec 31, 2012

All products that contain fenoxycarb will be off the market come December 31, 2012. The chemical fenoxycarb is used to control fire ants and big-headed ants on turf, home lawns, agricultural areas, non-agricultural areas, horse farms, and ornamental nursery stock, among other areas.

In addition temephos will also be removed from the market on December 31, 2015. Target pests include aquatic larvae of mosquitoes, midges, gnats, punkies, and sand flies.

Temephos is a non-systemic organophosphate insecticide which is applied to standing water, shallow ponds, lakes,

woodland pools, tidal waters, marshes, swamps, waters high in organic content, highly polluted water, catch basins (and similar areas where mosquitoes may breed), stream margins, and intertidal zones of sandy beaches.



*The big-headed ant. Photo courtesy of Mang Maning '09*

# Human & Animal Disease & Health

## Cattle Health Issues During Drought

Drought has a negative impact on the health of cattle, especially ones that are not in great condition to begin with.

Dr. Buddy Faries, says drought can cause numerous health situations in cattle. An obvious impact is that cattle can't get enough to eat, they get thin malnutrition/starvation, range ketosis, grain aflatoxin poisoning from stressed corn and sorghum, and lumpy jaw/woody tongue from irritated mouths and

tongues due to eating shard or dry forages.

Cattle will also become dehydrated; can suffer from heat, exhibit low fertility, low milk production, abortion, dystocia, retained afterbirth, uterine prolapses and immunosuppression.

Drought can also cause downers and dead cattle, as well as cattle die from grain aflatoxin poisoning when

nitrate levels are too high in plants.

There are post-drought issues to be aware of as well. After the rains move in, plant cyanide poisoning can still be a problem. Fog fever (pulmonary emphysema and edema) can cause toxic reactions in the lungs. The rains can also stir up clostridial pathogens and anthrax from dry soil.

## Controlling Salmonella in the fresh pen is critical

*Salmonella* is a pervasive bacterium that's difficult to keep away from the dairy. It is an opportunistic pathogen that is difficult to fight off at high levels of exposure. Controlling *Salmonella* in fresh cows can help prevent infection in the rest of the herd.

Prevention strategies:

1. Monitor fresh cows
2. Manage feedbunks
3. Keep rodents out
4. Separate fresh cows
5. Provide space
6. Provide cow cooling
7. Sanitize equipment
8. Clean water
9. Protect newborns
10. Consider vaccination to help control *Salmonella*

## 8 signs of Trichomoniasis

Trichomoniasis is a sexually transmitted pathogen associated with reduced fertility and abortions in cows. Signs of infection in a herd are:

- Repeat breeding (due to temporary infertility)
- Extended calving season (late calves)
- Early abortion (too early to find fetus) (>50%)
- Occasional late-term abortions (<5%)
- High percent of open cows at pregnancy check (30-50%)
- Pyometra (pus-filled uterus) in 1 to 5% of cows
- Reduction in number of calves born by 30-50%
- Less-uniform calf crops strung out over 3-8 months

## Fly Eating Clocks

[YouTube - Fly Paper Clock.avi](#)



A very interesting video on how a research group in England has developed a clock that runs on the digestion of flies. The flies are caught on a fly strip and consumed by the clock.

## Special Topics of Interest

### Dirty Jobs' Mike Rowe testifies before Congress

Mike Rowe from Dirty Jobs' testified in Congress about how disconnected Americans in general have become from the people who produce their food, fix their pipes, make their clothes, etc.

"I believe we need a national PR Campaign for Skilled Labor. A big one. Something that addresses the widening Skills Gap head on, and reconnects the

country with the most important part of our workforce," Mike says.

"In high schools, the vocational arts have all but vanished. We've elevated the importance of "higher education" to such a lofty perch, that all other forms of knowledge are now labeled "alternative." Millions of parents and kids see apprenticeships and on-the-job-training

opportunities as "vocational consolation prizes," best suited for those not cut out for a four-year degree. And still, we talk about millions of "shovel ready" jobs for a society that doesn't encourage people to pick up a shove," he adds.

"The Skills Gap is a reflection of what we value. To close the gap, we need to change the way the country feels about work." – Mike Rowe

### 50 Beef cattle profit tips

1. Take advantage of hybrid vigor. Crossbreed
2. Pay the extra money for a good bull.
3. Learn how to use EPDs.
4. Pregnancy check cows within 1-2 months of the end of breeding.
5. Work with a good veterinarian.
6. Vaccinate your cattle.
7. Observe cattle frequently & closely.
8. Treat cattle injuries & disease conditions promptly.
9. When dealing with death loss, do not wait to have a necropsy performed.
10. **Parasites are thieves. Deworm cattle, control the flies.**
11. Know how to identify poisonous plants.
12. Take your time when laying out fence lines, water sources & facility locations.
13. Maintain your fences.
14. Invest in decent cattle handling facilities.
15. Livestock scales are invaluable.
16. Handle your cattle with care.
17. A fast horse is nice. A fast cow is trouble. Cull the crazy cattle.
18. Keep safety as the top priority in everything on the farm.
19. Look into farm liability insurance.
20. Be a good steward of your natural resources.
21. Soil test.
22. Use management intensive grazing techniques to get most of pasture.
23. Develop a forage supply & demand budget.
24. Whether grazing or haying, do not let forage become too mature.
25. Know your hay quality & supplement accordingly.
26. Manage body condition for good reproductive success.
27. Supplement minerals & vitamins properly.
28. Avoid grain overload & other nutritional nightmares.
29. Implants & ionophores are proven to be great investments.
30. Castrate feeder calves to avoid the intact bull calf discount.
31. Take the horns off of feeder calves.

32. There is power in numbers.
33. Develop & grow a good business reputation.
34. Network.
35. At least use a record keeping book
36. Benefit from electronic & information technology
37. Know your expenses & income. Budget.
38. Keep all farm receipts for tax time.
39. Pay bills on time.
40. Shop around for inputs.
41. Beware of "silver bullet" products.
42. Buy feed by the truckload.
43. Support the local economy.
44. Know when to get rid of equipment & other assets that become money pits.
45. Promote your product.
46. When not sure, ask questions.
47. Do not overextend your resources.
48. Implement management practices properly to get the intended result.
49. Do not be afraid of change.
50. Never stop learning about the cattle business.

### Prescribed burns fight fire with fire

With over 2 million acres of land being ravaged by wildfires in Texas this year already, officials fear the state could battle fires into the summer months. Texans can minimize future wildfires with prescribed burnings, a wildfire-prevention method employed by landowners to protect their property and

that of their neighbors.

A prescribed burn is described as a land management fire ignited intentionally under carefully-monitored atmospheric conditions to help reduce dry brush, parched grass and other natural debris that fuel wildfires.

In Texas, the Texas Department of Agriculture licenses individuals who are

extensively trained and insured to conduct such burns, even during burn bans.

If your land is covered by overgrown brush or grass that could fuel wildfires, consider a prescribed burn. Visit <http://TexasAgriculture.gov>

### Improve tractor fuel efficiency

Improve fuel efficiency by being vigilant in following air and fuel filter replacement as well as other engine-maintenance procedures. Staying current on filter replacement saves 3-4% of fuel or more.

Observe engine temperature and air filter/pressure indicators during operation for any significant changes that might affect fuel economy.

Avoid excessive idling to cool the engine. Use a timer with an engine

block heater to avoid unnecessary heating. Also, protect fuel from evaporative losses and select appropriate fuel for summer/winter operation.

# Journal Reviews

High levels of insecticide resistance in introduced horn fly (Diptera: Muscidae) populations and implications for management. 2011. Oyarzun et al. J Econ Entomol. 104: 258-265.

The horn fly was introduced in Chile in the 1990's, since then it has been controlled exclusively with insecticides. Researchers checked field collected horn flies from 8 different farms for resistance to diazinon and pyrethroids.

All field populations, including those that had not been treated with insecticides for the past 5 yrs, showed high levels of cypermethrin resistance.

None of the fly populations demonstrated resistance to diazinon.

**The Impact.** Continual insecticide use against horn flies will lead to resistance, especially to pyrethroid chemicals. Rotating insecticide classes is a must in order to manage horn fly populations.

Identification of a mutation associated with permethrin resistance in the *Para*-type sodium channel of the stable fly (Diptera: Muscidae). 2011. Olafson et al. J Econ Entomol. 104: 250-257.

The sodium channel is of interest for evaluating resistance to pyrethroids because it is the target molecule for this major class of neurotoxic insecticides. The stable fly's sodium channel was coded from a laboratory strain resistant to permethrin and compared among

individuals collected from 5 different sites in FL.

A point mutation was identified and its location corresponded with that observed for knockdown resistance mutations in other insects.

**The Impact.** Knowing the location of the mutation in a resistance known strain of stable flies provides researchers the ability to check field populations. This knowledge will hopefully lead to ways to destroy this resistance mutation and control the stable fly in the field.

Vector competence of the stable fly (Diptera: Muscidae) for West Nile Virus. 2011. Doyle et al. J Med Entomol. 48: 656-668.

It was observed in 2006-07 that stable flies were transmitting West Nile Virus after feeding on infected pelicans in Montana. This paper looks at the stable fly in the laboratory to see if they are transmitters of WNV.

The project consisted of infecting stable flies with WNV and checking their ability to transfer it. The stable fly was found to be able to carry WNV in the body for up to 6 d and transmit WNV mechanically for up to 6 hours.

**The Impact.** This confirms that stable flies can mechanically (on their body and mouthparts) transmit WNV but the virus cannot replicate within the stable flies.

Phenology of stable fly (Diptera: Muscidae) larvae in round bale hay feeding sites in Eastern Nebraska. 2011. Taylor & Berkebile. Environ Entomol. 40: 184-193.

The temporal and spatial patterns of adult stable fly emergence from 6 sites with hay bale winter feeding sites were studied. Stable fly emergence began in early May, peaked in June & July and dropped after July.

Sticky traps collected adult populations and showed some variations; therefore indicating that winter hay feeding sites are responsible for early summer populations.

**The Impact.** The data provides evidence of winter hay feeding sites as locations for early stable fly populations. The paper also indicates that after the early arrival of stable flies the population is maintained elsewhere and not at the winter feeding sites.

Comparative applications of azadirachtin- and *Brevibacillus laterosporus*-based formulations for house fly management experiments in dairy farms. 2011. Ruiu et al. J Med Entomol. 48: 345-350.

This study looked at the ability of biopesticides azadirachtin and *B. laterosporus* to control house fly populations on a dairy.

The results showed a 63% decrease in the house fly population with azadirachtin and a 46% decrease with *B. laterosporus* when compared with the control

**The Impact.** Today's society requires the researching of non-traditional pesticides for insect control; this paper indicates there are other possibilities that might assist in controlling house flies.

Persistence of low-pathogenic avian influenza H5N7 and H7N1 subtypes in house flies (Diptera: Muscidae). 2011. Nielsen et al. J Med Entomol. 48: 608-614.

The objective of this paper was to investigate the potential transmission of LPAIV by persistence of the virus in the alimentary tract of house flies.

The house flies were able to pick up the virus and could be potential carriers although the virus strains declined within the house flies under increased incubation temperatures.

**The Impact.** Under adequate conditions, house flies could transmit H5N7 and H7N1 to birds, specifically poultry.

Myiasis by screw worm *Cochliomyia hominivorax* (Coquerel) (Diptera: Calliphoridae) in a wild maned wolf *Chrysocyon brachyurus* (Mammalia: Canidae), in Brasilia, Brazil. 2011. Cansi et al. Neotropical Entomol. 40: 150-151.

In April 2009, a wild maned wolf was captured with screw worm maggots in external wounds. This is the first reported case of myiasis by *C.*

*hominivorax* in a free-living maned wolf in Brazil.

**The Impact.** None really, I included this publication just to remind us all

that screw worms are not that far away and could become an issue in North America if efforts are not maintained to keep them out.

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Suppression of host-seeking *Ixodes scapularis* and *Amblyomma americanum* (Acari: Ixodidae) nymphs after dual applications of plant-derived acaricides in New Jersey. 2011. Jordan et al. J Econ Entomol. 104: 659-664.

The ability of natural, plant-derived acaricides to suppress nymphal *I. scapularis* and *A. americanum* was evaluated in a Lyme disease endemic area.

Nootkatone was found to suppress *I. scapularis* and *A. americanum* by 96.5% and 91.9% for 42 & 35 d, respectively.

**The Impact.** Results show potential for natural products to assist in controlling ticks for extended periods of time.

Efficacy and blood sera analysis of a long-acting formulation of moxidectin against *Rhipicephalus (Boophilus) microplus* on treated cattle. 2011. Davey et al. J Med Entomol. 48: 314-321.

This paper looked at the efficacy of moxidectin against the cattle fever tick. Results showed it to be effective for 50-d post-treatment.

Based on these results, cattle could be treated at 63-d intervals with minimal risk of viable ticks detaching from treated animals.

**The Impact.** This treatment would be 4.5-fold longer than the current treatment used for cattle fever ticks.

Efficacy of spinosad against acaricides-resistant and -susceptible *Rhipicephalus (Boophilus) microplus* and acaricides-susceptible *Amblyomma americanum* and *Dermacentor variabilis*. 2011. Miler et al. J Med Entomol. 48:358-365.

Cattle fever tick larvae and adults were exposed to spinosad and larvae were found to be susceptible. Engorged females were not

affected by the spinosad. Spinosad was found to be effective against all stages of *A. americanum* and *D. variabilis*.

**The Impact.** Spinosad is another alternative chemical that can be used to manage some tick species found on cattle.

Domestic cattle as a non-conventional amplifying host of vesicular Stomatitis New Jersey virus. 2011. Smith et al. Med Vet Entomol. 25: 184-191.

This study demonstrates two situations in which cattle serve as a source of VS NJV to black flies by serving: (a) as a substrate for horizontal transmission among co-feeding black flies, and (b) as a

source of infection to uninfected black flies feeding on sites where VS NJV-infected black flies have previously fed.

The role of vertebrates as amplifying and maintenance

hosts for VS NJV is unclear.

**The Impact.** Since a vertebrate has never been linked to amplify VS NJV, this gives a first look into cattle being a suitable host for insect transmission.

Response of *Ornithonyssus sylviarum* (Acari: Macronyssidae) and *Menacanthus stramineus* (Phthiraptera: Menoponidae) to gradients of temperature, light, and humidity, with comments on microhabitat selection on chickens. 2011. Halbritter & Mullens. J Med Entomol. 48: 251-261.

Responses of the northern fowl mite, *O. sylviarum*, and the chicken body louse, *M. stramineus*, to variation in temperature, light, and humidity were assessed.

CBL preferred a temp of 34°C. NFM avoided light, sought harborage and had no humidity response. CBL avoided harborage, had minimal light preference and settled at the lowest humidity.

**The Impact.** Data shows that temperature and humidity play a role in location of NFM and CBL in and around chickens.

It was found that the NFM preferred a temp of 30°C and the

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