

# The BovLine

From the desk of Angela M. Daniels, DVM

Circle H Animal Health LLC

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## What do flies and John's disease have in common?

Very little except that these topics are the basis of this newsletter and these are future issues that you are sure to spend time dealing with!

Fly control seems to be a timely topic. A new product is available this year that will allow you to have a true rotational program in place to avoid resistance issues that are a problem with pyrethrin-based products. Our focus is to give you facts about types of flies and pointers in developing your control program.

I had the opportunity to visit on the phone with Dr. Andy Schwartz with the TX Animal Health Commission (TAHC). TX has a Voluntary John's Disease Control Program. The good thing about enrolling in voluntary programs is that first, free support money is available. Second, voluntary programs generally become mandatory programs. It is a good idea to develop a relationship and be able to give feedback to the state regarding their programs. The TAHC is definitely looking for input and mentioned that their funds available may exceed the program limit if large dairies were to enroll.

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### Quote of the quarter

The mycobacteria thought to be responsible for the disease (John's) are said to be present in around a half of Crohn's Disease patients.

BBC news website



## Integrated management of flies in Texas dairies

Taken from publication E26 written by Douglass E. Stevenson & Jesse Cocke  
TX Agricultural Extension Service, the TX A&M University System

A working definition of integrated management of flies is the use of several methods that together offer good control at low cost. This approach reduces dependence on chemicals by combining sanitation practices, biological control and chemical agents to reduce fly populations.

An integrated approach to fly control is needed because: 1) fewer effective fly control insecticides are available 2) flies are becoming more resistant to insecticides 3) new regulations require reductions of insecticide residues in food 4) people need to reduce their exposure to insecticides 5) dairy systems are expanding, producing more intense fly breeding 6) concern is growing over the cost/benefits of fly control 7) flies harm animals and lower milk production 8) the public is more aware of the health and annoyance problems flies cause.

**Housefly.** There are 4 life stages—egg, maggot, pupa and winged adult and the life cycle may be as short as 4 days. In TX, 2-3 generations can develop in the warm months. Females lay 500-600 eggs during their lifetime. They live up to 31 days. Eggs as deposited in wet, decaying organic

matter such as manure or spilled feed. Just 1 pound of manure can yield more than 1500 maggots. Houseflies spread diseases and parasites from one animal to another and to humans. Their feeding methods and ability to transmit disease make them a constant threat to milk production and human and animal health. The housefly can only consume food in the liquid form. When feeding it constantly regurgitates food and saliva from its sponging mouthparts to help liquefy food. They eat feed, manure and other decaying organic matter. They pick up pathogens and parasites by walking over materials containing them and their intestinal tract becomes loaded with them by their feeding habits. They redeposit them each time they feed, defecate or vomit. Specifically they can carry BVD, BHV (bovine herpes virus), IBR, PI3, pink eye, mastitis, bacterial scours, typhoid, anthrax, vibriosis, and several clostridial diseases. Economic thresholds have not been established for dairies. But nuisance levels correlate well with incidence levels of pink eye and mastitis.

**Stable fly.** This fly feeds on blood and can be recognized by its piercing-sucking mouthparts. Both males and females feed and will move frequently on an animal or to another until they have engorged themselves with blood. They

## On-line



I can be reached on-line @ [circleh@xit.net](mailto:circleh@xit.net) or [cattlelac@xit.net](mailto:cattlelac@xit.net)

- [www.johnes.com](http://www.johnes.com)  
"your definitive source for John's information"
- [www.usaha.org/njwg.html](http://www.usaha.org/njwg.html)  
website for the John's National Working Group
- [www.prodivesa.com/selab1.htm](http://www.prodivesa.com/selab1.htm)  
A website in Spanish about John's disease
- [www.tahc.state.tx.us/animal\\_health/diseases/johnes/johnes.shtml](http://www.tahc.state.tx.us/animal_health/diseases/johnes/johnes.shtml)  
TAHC's John's site where details of the TX program can be found
- [www.aphis.usda.gov/vs/ceah/cahm/Dairy\\_Cattle/johnsart.htm](http://www.aphis.usda.gov/vs/ceah/cahm/Dairy_Cattle/johnsart.htm)  
USDA website containing a 1996 producer survey about John's disease
- [tcebookstore.org/pubinfo.cfm?pubid=859](http://tcebookstore.org/pubinfo.cfm?pubid=859)  
TX extension website where publication: Integrated pest mgmt of flies in TX dairies is found

## TX Voluntary Johne's Disease Program for Cattle

This program is administered by the State of TX and is supported by industry and the Federal Government. The objective of the program is to meet or exceed minimum standards for the control of Johne's disease. There are 3 elements—education, management and herd testing and certification. Johne's certified veterinarians are paid by the state to develop a herd-specific Johne's control plan and to perform a risk assessment for herds enrolling in the program. Initial herd testing is done to determine the herd's test status. This can be done by a screening test or an official Johne's disease test on a minimum of 30 randomly selected animals at second lactation (3 years of age) or higher. Herds are classified as Level A-D, based on their test prevalence. Herds are able to advance annually by screening random samples of animals.

I am enrolled in an on-line course to become a Johne's certified veterinarian. The State of TX is paying \$1500 in diagnostic costs for enrolled farms. Johne's ELISA tests are very affordable—<\$5 per head depending on the number sampled. If a link is found between Johne's disease and Crohn's disease in humans, Johne's disease will suddenly become a public safety issue. Milk marketing agencies will be scrambling to find milk from certified Johne's negative herds. I personally believe that a link will be found. Although pasteurization inactivates the Johne's organism, this research has been shot down by some anti-agricultural and human medical groups. Now is the time to be proactive!



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require a looser, drier environment and a superior diet of undigested food high in protein. They breed in decaying hay, straw, grain and mixtures of grain, manure and hay residue. The average lifecycle is 28 days and adults develop in 4 stages in about 10 days. Stable flies irritate cattle during resting, feeding and milking. Research shows that high populations can lower milk yield 15 to 30 percent. They bite during daylight hours only and may travel several miles to find blood meals. They carry several animal diseases including anthrax and trypanosomiasis. Horn fly. These are half the size of the previous two flies and also feed on blood. They remain on the cow at all times, with the female only leaving to lay eggs in fresh manure. These flies develop rapidly and are finished growing in 3 to 5 days. Under ideal conditions the lifecycle is 10 to 14 days. Constant feeding by the horn fly can annoy, irritate, and take blood from cattle causing them to lose weight and eat more feed than necessary. Cows with a heavy infestation may lose a half pound of body weight per day and milk production may drop 10 to 20 percent. Garbage and blow flies. Garbage flies are about 2/3rds the size of houseflies and have a similar lifecycle. The garbage fly larvae feed on housefly larvae and may reduce housefly numbers while increasing their own. Blow flies are robust flies with a metallic sheen to their body. Their lifecycle is similar to the houseflies but in order to develop they require a wet medium and a diet rich in animal protein. They prefer to breed in animal carcasses, afterbirth and areas contaminated with spilled milk. Good sanitation practices can prevent major problems with garbage and blow flies.

Dairy flies can be managed effectively and economically using integrated pest management (IPM). Figure 1 shows a decision-making flow chart that includes 4 courses of action—chemical, larvacide-supplemented, IPM, and spray-as-needed. The spray-as-needed or “wait and see” attitude allows fly populations to explode. No amount of late-season spraying will bring the population under control. Simply put, the IPM strategy uses as many nontoxic or nonlethal methods as possible to suppress fly population growth. It unites sanitation, biological control, and chemical agents to manage flies effectively and economically. During the early spring, do a spring clean-up. The article points out common places to clean-out. Late spring, remove and spread manure, kill overwintering flies with pyrethrins or other agents, start feeding feedthrough IGRs and begin parasitoid releases. Baiting should begin in the early summer. Sprays are used late summer or earlier if control begins to break down.

Chemicals used for fly control must be applied to specific areas. Where proper sanitation is used, it is seldom necessary to use chemicals in that particular area. Houseflies quickly develop resistance to pyrethroids. Elanco has introduced a new class of control agent. The product name is Elector and the chemical agent is Spinosad. One suggestion is to use a pyrethroid product for 1-2 weeks then rotate to Elector for 1-2 weeks.

Table 1

