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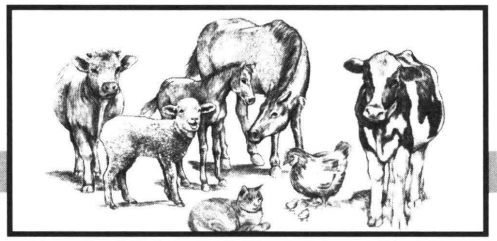

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Current Strategies in Parasite Control in Virginia Beef Cattle

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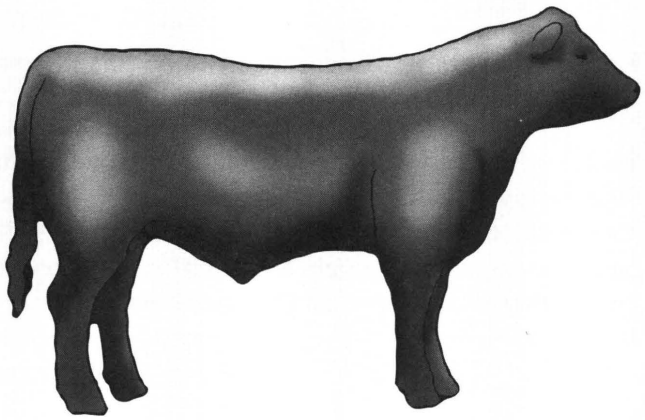
Many advances have been made in the field of livestock parasite control over the past few years. Because parasites decrease production, usually through decreased weight gain, advances in the control of parasites can have a direct economic impact on beef cattle operations. Parasites that affect cattle can be divided into two major categories, internal and external.



Internal Parasites

Internal parasites which affect cattle include: roundworms, flukes, and tapeworms. Tapeworms are not considered to be of economic importance in cattle. Flukes are a problem in the Gulf Coast states and Pacific Northwest, but do not pose a major concern for Virginia cattle producers.

There are several different species of roundworms that can affect cattle in Virginia. Of these species, the one thought to be of most importance is Ostertagia, also known as the brown stomach worm. There are several aspects of this worm's life cycle that are important in designing a complete deworming program. Cattle are most susceptible to this worm at less than 2 years of age. Most cows greater than 2-3 years of age have developed immunity to this worm and do not show an economical benefit to deworming: However, deworming of cows can decrease the exposure of younger animals pastured in the same field.

Another important aspect of this roundworm's life cycle is its ability to go into hibernation in the abomasum, or true stomach, of cattle. This is commonly known as the inhibited larval stage of Ostertagia. This process can occur during the winter with these larvae maturing and developing into adult worms in the spring. While not common, large numbers of inhibited larvae can cause individual calves to show severe signs of parasitism, severe diarrhea, and rapid weight loss. This condition is known as Type II Ostertagiasis. Most but not all dewormers kill inhibited stage larvae.

Deworming

Dewormers for beef cattle come in several forms including paste, injectable, drench, pour-on, bolus, and

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as a feed or mineral additive. Products also have various lengths of activity and costs. See Table 1 for comparisons.

Strategic Deworming

Strategic Deworming involves developing a program with the goal of maximizing the economic benefit of deworming cattle while also removing the larvae from infected pastures. Animals have often been dewormed at the start of the grazing season and at the end, but this is insufficient. One deworming in the spring is not cost effective because it does not prevent a buildup of the worm burden later in the grazing season. Deworming in the fall may prevent the "sleeping" larvae from doing damage the following spring. However, this is only the case if the right drug is used and cattle are kept off contaminated pastures following deworming. Newer deworming programs, based on current knowledge of the persistent activity of dewormers, provide for much greater benefits of deworming. Studies have shown that strategic deworming programs can provide 30-100 extra pounds of gain per grazing season. In order to be most effective, these programs should start when cattle are first turned on to pastures to graze in the spring, with subsequent dewormings depending on the length of persistent activity of the chosen dewormer (See Table 1). Studies have also shown that an adjusted strategic deworming program can be accomplished by deworming at turnout and midsummer. The benefits from doing this type of deworming program are less, however, than for strategic deworming. Consult your veterinarian to help you design the optimal deworming program for your herd.

External Parasites

External Parasites which affect cattle include lice, warbles (grubs) and flies. Lice are most commonly a problem in late winter, affecting both younger animals and adult cows. The primary clinical signs of lice are severe itching and hair loss, primarily around the neck and tailhead. The entire life cycle of the louse is spent on the animal's body, making development of a control program easier. There are three stages of the louse's life cycle: a) nit (egg), b) larva, c) adult. All products kill both the larvae and adult stages, but no products kill the nit. In order to completely eradicate lice from a herd of cattle, they must be treated with the product twice 2 weeks apart or treated with a product that has greater than 2 weeks persistent activity. Lice problems will typically clear up as temperatures rise in late spring and early summer, but they can cause decreases in body condition and milk production if severe enough.

Grubs (warbles) are the larval stage of the heel fly that migrate from the animal's heel (where the eggs are deposited by the adult fly in early summer) to the back of the animal. These larvae can cause damage to the hide of the animal and if treated during the wrong time of the year can cause paralysis due to their location near the spinal column. **Cattle should not be treated with grubicide between November 15 and March 1.**

Flies are probably the most common nuisance and have the largest economic impact of the external parasites. The 2 major types of flies are face flies and horn flies. Both of these types of flies cause decreased weight gain in cattle. The two major classes of chemicals currently being used to control flies include pyrethrins and organophosphates. There are several different methods available for applying the insecticides. These include:

Fly Tags - May contain either pyrethrins or organophosphate compounds or both together.

Pour-ons - Have different formulations that provide protection from known resistant fly populations for 2-11 weeks

Back Rubs - Concentrates of either pyrethrins or organophosphates can be mixed with diesel fuel and applied to the back rub (Must be placed in a high traffic area).

Spray applicators on Mineral Feeders - Sprays a small amount of chemical on the animal when it sticks its head in the mineral feeder

Hand Sprayers - Concentrates can be mixed up in sprayers and applied to cattle 2-4 times a month.

Because flies can develop resistance to products that contain pyrethrins and those containing organophosphates, rotation between the two types of insecticides on an annual basis is thought to reduce the likelihood of the development of resistant fly populations.

Disclaimer

Commercial products are named in this publication for informational purposes only. Virginia Cooperative Extension does not endorse these products and does not intend discrimination against other products which also may be suitable.

Table 1. Dewormer products commonly used in Virginia.

Drug	Trade Name(s)	Delivery Route	Cost for 500 lb. animal	Gets important Virginia worms?	Gets inhibited worms?	Special Features	Persistent Activity Length
Thiabendazole	Moorman's Blonde Block	Block	$1.00	Sometimes	No		
Levaminsole phosphate	Tramisol Injectable Solution	Injectable	$1.00	Yes	No		
Levaminsole phosphate	Totalon	Pour-on	$1.45	Yes	No	Pour-on convenience	
Morantel Tartrate	Rumatel	Boluses, Feed additive	$1.25	Yes	No		
Fenbendazole	Safe-Guard, Panacur	Drench, Paste	$1.35/ $2.70	Yes	At high dose		
Fenbendazole	Safe-Guard pellets, mineral, etc., Moorman's Moorguard Minerals	Oral consumable	$1.50 to $2.00	Yes	Probably not	On pasture or in feed treatment	
Albendazole	Valbazen	Drench	$1.30	Yes	Yes		
Oxfendazole	Synanthic	Drench, Paste	$1.00	Yes	Yes	Small dose drench	
Ivermectin	Ivomec Cattle	Injectable	$2.25	Yes	Yes	Grub and lice control	2 Weeks
Ivermectin	Ivomec Pour-On	Pour-on	$2.25	Yes	Yes	Grub and lice control, Residual Effect, Pour-on convenience	3 Weeks
Ivermectin	SR Bolus	Bolus	$10-$12	Yes	Yes	Grub and lice control	4 Months
Doramectin	Dectomax	Injectable	$2.75	Yes	Yes	Grub and Lice control 3 Weeks	3 weeks
Doramectin	Dectomax	Pour-on	$2.75	Yes	Yes	Grub and iice control, Residual Effect, Pour-on convenience 4 weeks	4 Weeks
Moxidectin	Cydectin	Pour-on	$2.25	Yes	Yes	Grub and lice control, Residual Effect, Pour-on convenience 4 weeks + rain proof	4 Weeks
Eprinomectin	Eprinex	Pour-on	$2.50	Yes	Yes	Grub and lice control, Residual Effect, Pour-on convenience 4 weeks + rain proof	4 Weeks