

PARASITES OF CATTLE



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Parasites Of Cattle

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This research had two objectives:

1. Determine which parasites were most detrimental to beef cattle's health, reproduction and productivity.
 2. Test two cattle dewormers to eliminate 100% of parasites in cattle.
- The two dewormers tested: Pfizer's Dectomax injectable versus a generic form of Ivermectin pour-on.
 - This research was conducted on 96 head of Angus calves around 6 months old.
 - Weights were taken on day 1 and day 26.
 - Parasite control methods assigned randomly: Control, Dectomax injectable or Ivermectin generic pour-on.

Parasites of Cattle

- As long as cattle are grazing pastures parasites will exist
- Parasite-related losses to the livestock industry totals more than \$3 billion annually.
- However, some parasite losses are subclinical and unmeasured, the figure could be much higher.
- Some of the subclinical losses are:
 - the reductions in milk production of the mother cows
 - decreased average weaning weights on calves
 - reduced reproductive performance and growth.
- Cattlemen must understand the types of parasites they may encounter and methods for controlling parasites in order to minimize losses.

Parasites of Cattle

- Prevention and correction of parasitism is based on knowledge of factors that affect both the survival of parasites in the environment and their transmission to the host.
- Completely eliminating parasites is difficult using present methods of treatment and management.
- However, you can reduce the severe effects of cattle parasites by using chemical insecticides along with sound management programs.

Clinical Signs of Infected Cattle

- Bottle jaw, pot belly, diarrhea
- Not grazing, not chewing cud
- Rough and dry hair coat
- Thinness, weakness and inability to stand.
- These signs are similar to those caused by malnutrition

Parasite Classification

Classified as either internal or external parasite.

Both of these families create a tremendous amount of damage to the host.

Also, there are many different species within these two groups.

Internal Parasites

- The two most common families of internal parasites are the nematodes and the flatworms.
- Nematodes, also known as roundworms, costing cattle producers 600 million dollars annually.
- Within the nematodes family, are the ascarids, trichostrongylids and brown stomach worm.
- Within the flatworms are the fluke and tapeworms.

Internal Parasite (Ascarids)



Ascarids (Roundworm)

- Ascarids infect the small intestine when they are consumed by the animal as an egg on connected to grass plants.
- Largest egg production of all roundworms and the eggs can remain viable for up to nine years causing major pasture infections.
- Producers should avoid share pasture with other animals.

Internal Parasite (Trichostrongylids)



These roundworms are the biggest infector of all ruminants and most economically detrimental of all internal parasites.

- There are two types of trichostrongylids, Type I and Type II.
- Type I mostly affects calves during the late pasture season
- Type II worms primarily affect yearlings and two year olds.
- Suck blood which damages the gastro intestinal tract.

Internal Parasites (Brown Stomach)



- The brown stomach worm's affects and life cycle are very similar to the trichostrongylids.
- It is consumed by the grazing animals and causes damage to the stomach lining .
- Could potentially create blockage between the stomach and intestine.

Internal Parasites (Flatworms)

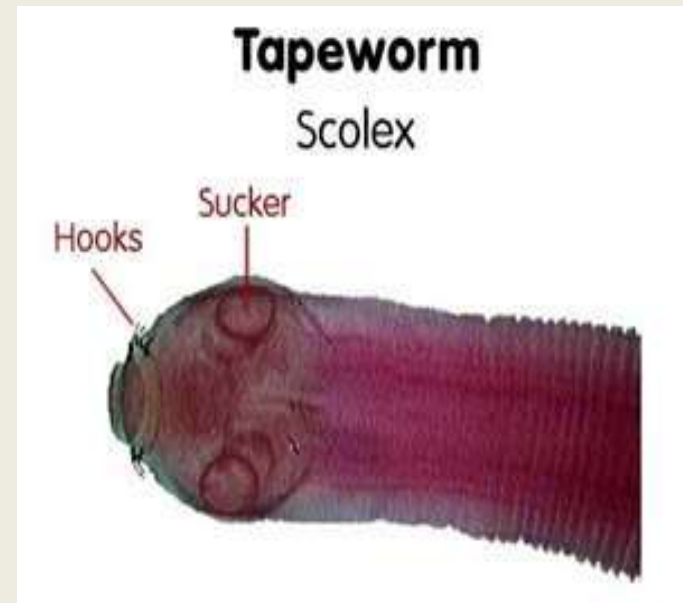
- Flukes and Tapeworms.
- The flukes intermediate host is the snail
- Free-swimming larva with a tail.
- Consumed by next host on grass blade or water surface
- Once inside a mammal, the fluke burrows through the intestines, eventually boring into the liver to lay its eggs.
- In a tapeworm infection, adult worms absorb food predigested by the host.
- Attaches inside the digestive system of host and sucks blood and inhibits nutrient absorption for the animal.
- Symptoms vary widely, depending on the species causing the infection.

Internal Parasites (Flukes)



- Common in the Northwest where irrigation water or heavy rainfall causes flooding of low lying pasture land.
- Flukes are zoonotic
- Affected livers are condemned at packing plants, reducing earnings.
- Damages include rapid weight loss and decreased fertility.
- Also, red water disease is sometimes an aftermath of fluke infection.

Internal Parasites (Tape Worms)



- Tapeworms are zoonotic .
- An animal becomes infected when it consumes vegetation.
- Attaches to inside the colon of the animal and lives off the animal's body causing it health and economic damage.

External Parasites

- The external parasites are equally harmful to the animal's production performance as the internal parasites .
- Classified into numerous different species.
- This group of external parasites is made up of different classifications of flies and lice.

External Parasites (Flies)

- Cattle pests, such as flies, cost cattlemen a loss in production due to irritation by the pests and the diseases they cause or transmit.
- The two types fly groups for this can be classified as biting flies which suck blood and non-biting flies.
- Further being classified as Flies of Confinement and Problem Flies.
- Both groups are an annoyance to the animals and could transmit diseases, and pathogens .
- Nationwide, annual losses with fly infestations cost the United States cattle industry an estimated \$2.2 billion annually

External Parasites (Flies-Confinement)

- Flies of confinement are most commonly found near feedlots, barns and corrals.
- Prefer the legs of animals
- Reproduce in decaying matter : primarily dead animals and organic matter such as old hay and bedding.
- The two most dominant flies of confinement are:
 - The stable fly
 - The house fly.

External Parasites (Flies of Confinement)

Stable Fly



House Fly



- University of Nebraska shown that confinement flies depress weight gain .48 pounds per day in calves and .44 pounds per day in yearlings.
- This costing the U.S. cattle industry nearly \$482 million lost annually.

External Parasites (Flies-Problem)

- Rangelands and Pastures.
- The two most dominant problem flies are the horn fly which sucks blood, lives on the host and very detrimental on weight gain.
- Then there is the face fly, which uses tears from the animal's eye to develop eggs that can lead to pink eye.
- Both of the problem flies are dung breeders

External Parasites (Horn Fly)



- University of Florida found that irritation and blood loss cause by horn flies can cost .3 to .5 pounds per day to the growing calves.
- Nationwide, annual losses in excess of \$876 million are felt due to horn flies alone because of reduced weaning weights in calves

External Parasites (Face Fly)



- The face fly, which uses tears from the animal's eye to develop eggs that can lead to pink eye.
- The face fly is said to be the most detrimental to livestock producers because of irritation during feeding and it's the carrier of the agent of Pinkeye.
- This painful disease can cause reductions in weaning weights of as much as 17 to 65 pounds per animal and very difficult to control.

Flies With Parasitic Larvae



- The heel fly and bomb fly neither bite or suck blood, their egg laying practices cause stress to livestock.
- The development of their feeding larvae is commonly referred to as cattle grubs.
- Cause production losses and damage to both meat and hides.
- Loss of livestock production due to cattle grubs is \$169 million annually.

External Parasites (Lice)

- Lice are either classified as Biting or Sucking lice determined by feeding mouth parts.
- Lice can cause severe itching and lice infested cattle can damage trees and fences that are used for rubbing posts.
- The hair coats of lice infested cattle take on a rough scruffy appearance and sometimes areas of the skin are rubbed raw.
- Lice have been known to affect weight gain on untreated cattle with weight losses reported up to 70 pounds per head.

External Parasites (Biting Lice)



- Cattle biting lice tend to be the most abundant species on cattle.
- It has chewing mouth parts and is found mostly on the topline along the back and the withers.
- Biting lice feed on skin debris causing the animal severe skin irritation.

External Parasites (Sucking Lice)



- The sucking lice pierce the skin and suck blood which could be sufficient enough causing the animal health conditions.
- Sucking lice are seen in little clusters around the eyes and tail head.

Controlling Fly Parasites (Bio Methods)



Biological control is through the use of dung beetles or parasitic wasps.

- Parasitic wasps lay eggs in manure and their larvae feed on the fly larvae. Reduction of 90% fly larvae survival has been recorded.
- Dung beetles break up fresh manure, making poor habitat for the fly larvae to survive. An active population of dung beetles can bury or destroy 95% of fly eggs and larvae within the manure

Controlling All Parasites (Generic Chemicals)



Chemical parasite controls that have come out on the market.

- Poor performance due to improper use.
- Do not contain the right formulation for optimum chemical absorption for long lasting parasite control to the livestock.
- Worse yet, the parasites are receiving these generic products and building resistances.

When to Treat Animals?

- Timing of treatment is crucial to get the best control on these parasites.
- Spring is the ideal time. Clean up pastures for the upcoming summer and minimize the economic effects.
- Typically during April or May :temperatures are getting hotter before cattle are released from spring calving pastures into summer grazing rotations.
- Too soon leads to effects wearing off before the emergence of spring parasites.
- Too late leads to cattle recontamination of the pastures and newborn calves.
- Monitoring feces will also tell you when to start a protocol.

How Often to Treat Age Groups?

- Mature cows should be treated at least one time per year.
- Bulls should be treated twice a year, spring and fall.
- Treatment of calves should begin when they reach three to four months of age and again at weaning if they are kept as replacements or stockers.
- Yearlings can be treated on a seasonal basis, spring and fall, until they are mature cows

Benefits to Parasite Control

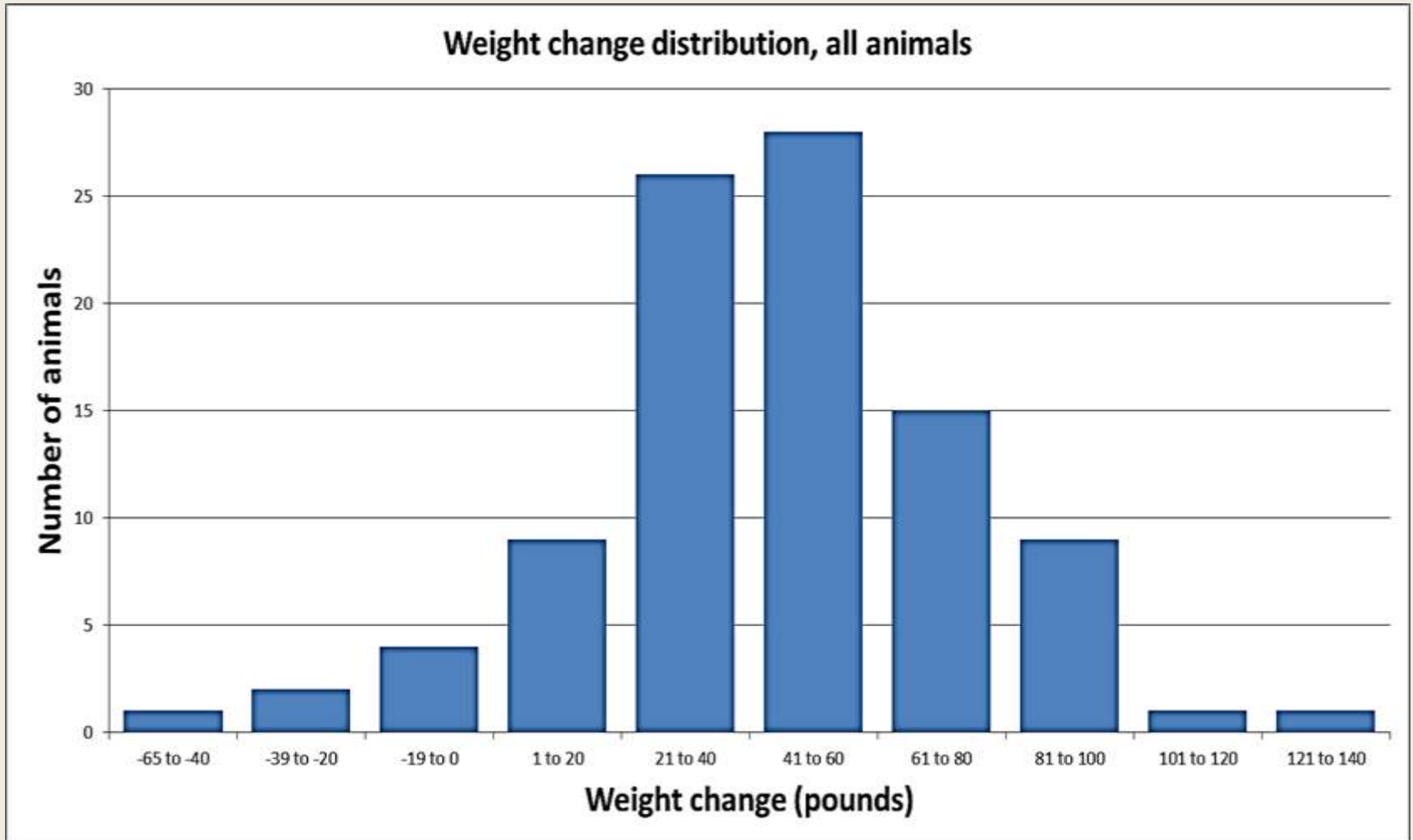
- Beef cow weights and body condition scores are improved
- Body weight increases 20 to 30 pounds
- Body condition scores improve .2 to .4 points per individual
- Conception rates increase in heifer and mature cows
- Potential weaning weights improvement 20 to 40 pounds
- Replacement heifers show improved growth rates during maturity
- Replacement heifers shown reduced time to puberty

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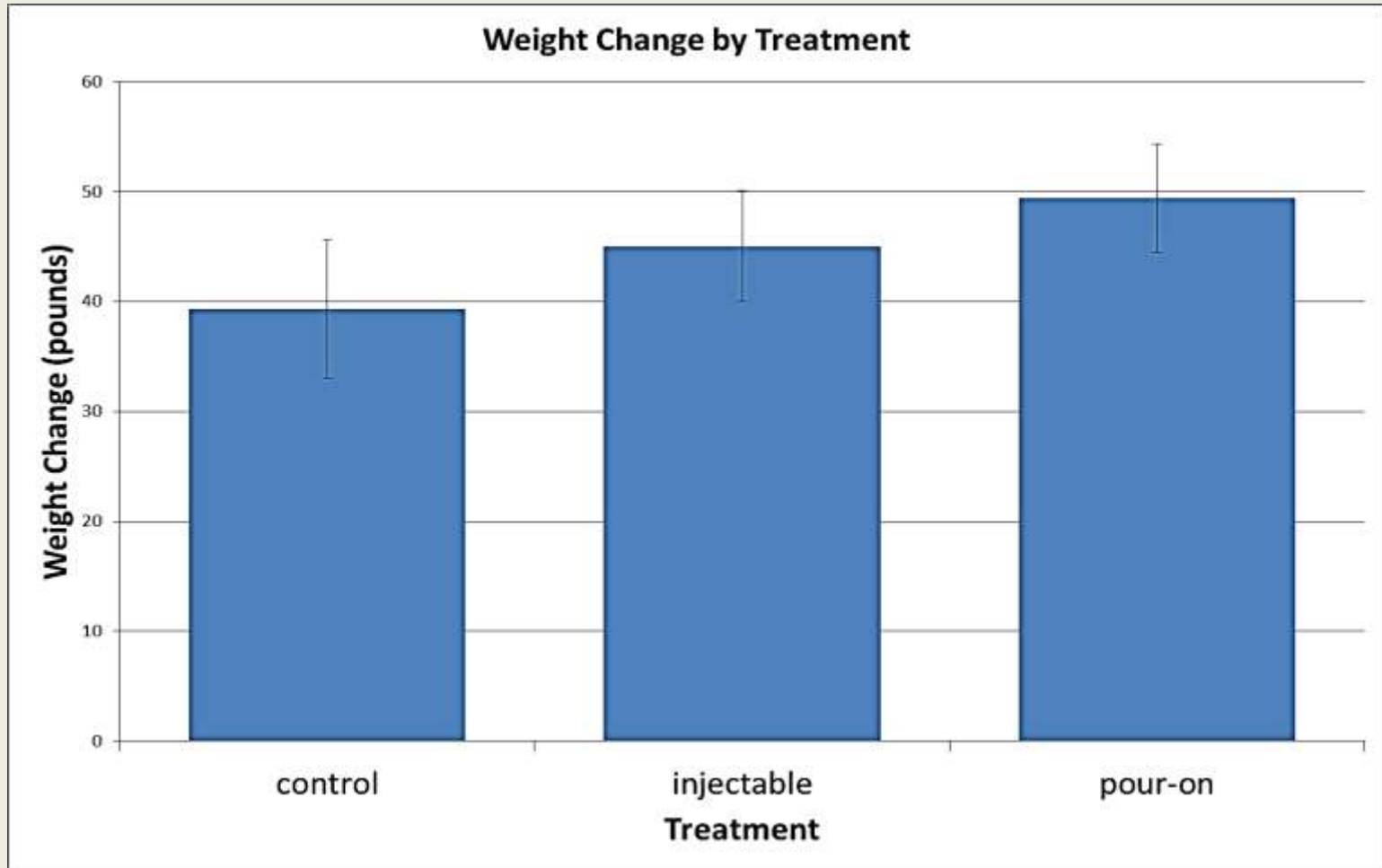
Results

- Internal nematodes are the most detrimental to beef cows.
- Generic Ivermectin Superior to Dectomax
- The Generic Ivermectin pour-on:
 1. Most effective dewormers determined by the calves weight gain during the period.
 2. Statistics shown to be more consistent with positive weight gain. Calves gained 5-10 pounds over Dectomax & 10-15 pounds over control.
 3. Improved cattle health and the herd managers bottom line.

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