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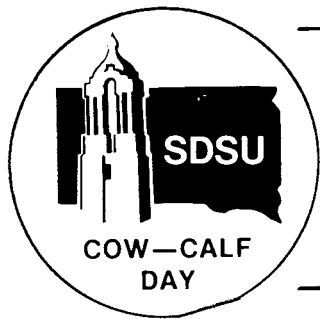
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## HORN FLY CONTROL ON RANGE BEEF CATTLE

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### Summary

Over eleven hundred range cattle were treated with insecticide-impregnated ear tags and observed for horn fly control. Tagging rates compared were herds with one or two tags on each cow, two tags on part of the cows, one tag on half the cows,<sup>2</sup> one tag on each calf (none on the cows) and fenvalerate<sup>1</sup> versus permethrin<sup>2,3</sup> as the insecticide in the tags. Results from all herds studied showed reductions of 90 to 100% for horn flies after 60 days of treatment for as long as 125 days.

### Introduction

Studies in 1981 showed excellent results with fenvalerate ([8%] Ectrin®) impregnated ear tags in range beef cattle (85 to 99% reduction in horn flies for at least 4 months). In 1982, permethrin-impregnated ear tags (Y-Tex® Guard Star and Atroban®) were studied along with the fenvalerate-impregnated tags.

Results from all these studies showed excellent reductions. Less satisfactory results were achieved when calves-only were treated. This method of treatment is not generally recommended by the manufacturer. However, this method of fly control is more attractive to some cattlemen's management programs. The calves can be treated when they are restrained for branding, vaccination or castration.

### Procedure

Fly counts were made at approximately monthly intervals. Ten cows were counted at random in each herd. Counts were made with binoculars from a pickup. Horn fly counts are reported as flies per side. If some of the cows in the herd were not treated, equal numbers of tagged versus untagged cows were reported. Populations of face and stable flies were low on all study animals. All treatments were within about a 10-mile radius of the Cottonwood Range and Livestock Research Station in west central South Dakota. Treated herds varied in size from 58 to 180 cows. Untreated herds of cattle in the same area were used as controls.

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- 1 Ectrin®, Diamond Shamrock.
  - 2 Y-Tex® Guard Star.
  - 3 Atroban®, Burroughs Wellcome Company.

Results

Two tags per cow resulted in outstanding results (99 to 100% control) as shown in table 1. The observation was for 110 days. When two tags per cow were used in two-thirds of the cow herd, 91 to 99% horn fly control was achieved for 125 days (see table 2).

Table 1. Effect of Two Permethrin-Impregnated Tags Per Cow<sup>a</sup>

Count date	Days post-treatment	Horn flies per side		Control (%)
		Treated	Untreated	
May 15	0	15	15	--
June 30	45	0	12.8	100
August 2	78	.1	300	99
September 3	110	.2	150	99

<sup>a</sup> Kelly Fees Ranch, Hereford cows treated with Y-TeX®.

Table 2. Effect of Two Permethrin-Impregnated Tags in Two-Thirds of Cows<sup>a</sup>

Count date	Days post-treatment	Horn flies per side			Control (%)
		Treated		Untreated	
		Tagged	No tag		
May 1	0	0	0	0	--
June 30	60	1.1	2.1	12.8	91
August 2	93	.6	.2	300	99
September 3	125	0	.2	150	99

<sup>a</sup> Garland Kampfe Ranch, crossbred cows treated with Y-TeX®.

One tag per cow resulted in 99 to 100% horn fly control for 101 days as shown in table 3. One tag used in one-half of the cow herd resulted in 94 to 99% horn fly control for 105 days (table 4). The untreated cows in the herd had a few more flies than the treated at two of the three counts.

Table 3. Effect of One Permethrin-Impregnated Tag Per Cow<sup>a</sup>

Count date	Days post-treatment	Horn flies per side		Control (%)
		Treated	Untreated	
May 25	0	75	--	--
June 30	35	0	12.8	100
August 2	69	.7	300	99
September 3	101	.2	150	99

<sup>a</sup> Tim and Greg Weber Ranch, Angus and crossbred cows treated with Y-TeX®.

Table 4. Effect of One Permethrin-Impregnated Tag in Half the Cows<sup>a</sup>

Count date	Days post-treatment	Horn flies per side			Control (%)
		Treated		Untreated	
		Tagged	No tag		
May 21	0	25	0	--	--
June 30	40	.8	3 <sup>b</sup>	12.8	94
August 2	73	.8	2.2 <sup>b</sup>	300	99
September 3	105	1.6	1.6 <sup>b</sup>	150	99

<sup>a</sup> Jerry Stout Ranch, Charolais and crossbred cows and yearling heifers treated with Y-TeX®.

<sup>b</sup> Untreated animals in "treated" herd.

The results of one tag in each calf (none in the cows) are shown in table 5. Results indicated only a 30% fly reduction at the 54-day count, but fly numbers were small, 8.8 and 12.8 average per cow. However, at the 87- and 119-day counts, results showed 90 to 98% control, which is considered fairly good horn fly control (4.2 and 14.6 horn flies per side).

Table 5. Effect of One Permethrin-Impregnated Tag in Each Calf, None in Cows<sup>a</sup>

Count date	Days post-treatment	Horn flies per side		Control (%)
		Treated	Untreated	
May 7	0	50	--	--
June 30	54	8.8	12.8	30
August 2	87	4.2	300	98
September 3	119	14.6	150	90

<sup>a</sup> Maurice Fite Ranch, Hereford calves treated with Y-TeX®.

The results of the Ectrin® ear tags, one tag per cow, are shown in table 6. Ninety-one to 100% control for 107 days compared favorably with the permethrin-impregnated tags. Table 7 presents the results of Atroban® tags, one tag per cow. Horn fly reductions of 91 to 99% were noted for 107 days. Table 8 reports the results of one tag per yearling steer for horn fly control. A 93 to 99% reduction was noted for 97 days.

Table 6. Effect of One Fenvalerate-Impregnated Tag Per Cow<sup>a</sup>

Count date	Days post-treatment	Horn flies per side		Control (%)
		Treated	Untreated	
May 19	0	10	--	--
June 30	42	1.1	12.8	91
August 2	75	8.2	300	97
September 3	107	0	150	100

<sup>a</sup> Vint Williams Ranch, Hereford cows treated with Ectrin®.

Table 7. Effect of One Permethrin-Impregnated Tag Per Cow<sup>a</sup>

Count date	Days post-treatment	Horn flies per side		Control (%)
		Treated	Untreated	
May 18	0	25	--	--
June 30	42	1.1	12.8	91
September 3	107	.9	150	99

<sup>a</sup> Vern Omdahl Ranch, Hereford cows treated with Atroban®.

Table 8. Effect of One Permethrin-Impregnated Tag Per Yearling Steer<sup>a</sup>

Count date	Days post-treatment	Horn flies per side		Control (%)
		Treated	Untreated	
May 28	0	25	--	--
June 30	32	.9	12.8	93
September 3	97	.2	150	99

<sup>a</sup> Cottonwood Station, crossbred yearling steers treated with Y-TeX®.

There are advantages and disadvantages for the use of ear tags for horn fly control. Some advantages are:

1. Effective against horn flies.
2. Last the fly season in South Dakota.
3. Relatively inexpensive when considering a minimum working of cattle.
4. Reduce face flies.
5. Reduce pink eye (rancher observation).
6. Relatively easy to apply.

Some disadvantages are:

1. Old tags should be cut out and replaced annually, a problem of hitting the same hole.
2. Cattle need to be restrained.
3. Some tags may be lost on chutes, fences or calf creep feeders.
4. Not effective against stable flies.