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TRAPPING EFFECTIVENESS OF SEVERAL COMBINATIONS OF COLORS AND TEXTURES OF STICKY TRAPS FOR STABLE FLIES, *STOMOXYS CALCITRANS*

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ABSTRACT. Twelve combinations of colors and textures of Alsynite® panels were tested for their relative effectiveness in trapping stable flies, *Stomoxys calcitrans* (L.), at a dairy in northwest Florida. The test results showed by analysis of variance with a Duncan's test that the translucent flat (noncorrugated) panels were the most effective in trapping flies followed by white flat, white corrugated-vertical, white corrugated-horizontal, green flat, green corrugated-vertical, green corrugated-horizontal, yellow flat, yellow corrugated-vertical, yellow corrugated-horizontal, gold corrugated-vertical, and gold corrugated-horizontal in order of decreasing effectiveness.

INTRODUCTION

Sticky traps have been used for trapping adult stable flies, *Stomoxys calcitrans* (L.), for several years. Wood shingles (Hansens 1951) and panels of plywood (Bailey et al. 1973) were coated with sticky materials for surveying adult stable fly populations. Alsynite® panels coated with Tack Trap® (Williams 1973) were tested in northwest Florida and the results showed that translucent Alsynite panels were more effective than panels painted either red or black. A study was initiated to compare the trapping efficiency of the translucent Alsynite panels with other colors and textures of the same material.

MATERIALS AND METHODS

The trap consisted of 2 Alsynite panels each 35 cm by 45 cm. The 2 panels were

fitted together at their midpoints to form intersecting planes perpendicular to the ground and held by slots cut in a 4 cm square post 45 cm above the ground. Tack Trap was applied to the panels with a brush and the panels replaced twice a week. The texture of the panels was either flat (noncorrugated) with both sides smooth, or corrugated with 1 side smooth and the other having a pebble finish. The use of the word horizontal below refers to the corrugation being horizontal, while vertical refers to vertical corrugation. The 5 colors used in the tests were translucent, white, green, yellow, and gold. In all, 12 combinations of colors and textures were tested.

The study was conducted at a dairy in Jackson County, Florida. Twelve trapping stations, each 6 m apart, were established in an east-west straight line along the outside edge of a pasture where cattle were fed green chop. Each station contained 2 trapping posts 69 cm apart, one for flat panels and the other for corrugated panels. The 12 trapping stations were divided into 4 sections, each containing 3 adjacent stations.

The traps were operated for 6 weeks and were divided into 12 trapping intervals, each being 3 to 4 days. The trapping intervals were grouped into 3 trapping periods (a period being 2 wk), each containing 4 consecutive trapping intervals. A system of trap rotation was devised so that each combination of color and texture was used at each trapping station for only 1 trapping interval and for each trapping period to include only 1 trapping interval in each section. The rotation plan also prevented any 2 types of panels from remaining side by side throughout the trapping period. The order of rotation among the stations was 1-10-7-4-2-12-9-6-3-5-11-8 and the initial starting position for each combination was determined by a random drawing.

The traps were checked and the flies counted at the end of each trapping interval; the old panels were replaced with new ones and rotated. The flies were counted by determining the number of

Table 1. Classification of various types of panels for attracting stable flies, *Stomoxys calcitrans* (L.), by Duncan's test of means arrayed in descending order using Duncan's test letters.

Panel type[1]	No. of flies[2]	Percent of total flies	Mean[3]	Mean separation at indicated significance level[4] 1%	5%
translucent-flat	2873	18.5	18.275	a	a
white-flat	2521	16.2	15.783	a	b
white-vertical	2059	13.2	13.000	b	c
white-horizontal	1962	12.6	12.542	b	c
green-flat	1886	12.1	12.192	b	cd
green-vertical	1493	9.6	10.325	bc	de
green-horizontal	1206	7.8	8.442	c	e
yellow-flat	802	5.2	4.883	d	f
yellow-vertical	405	2.6	2.100	e	g
yellow-horizontal	199	1.3	1.317	e	g
gold-vertical	93	0.6	0.717	e	g
gold-horizontal	44	0.3	0.333	e	g
Total	15543				

[1] Flat following colors indicate noncorrugated panels; all others are corrugated with the corrugation positioned either vertical or horizontal.
[2] Represents 13.9% of the total flies trapped.
[3] Average of the twelve trapping intervals.
[4] There is no significance between two means if both contain the same Duncan's test letter.

trapped flies in three 25 cm^2 areas located on each of the 8 surfaces of the trap. During the first 2 trapping intervals, counts were made of the total number of flies on each of 12 traps, and it was determined that the 25 cm^2 areas contained an average of 13.9% of the flies on the panels. Since the relative effectiveness of the panels was being studied, the number of flies trapped for each combination was converted to the percentage of the total number trapped for each trapping interval. This procedure minimized the effects of population fluctuation, weather conditions, etc., during the study. The results were subjected to an analysis of variance with a Duncan's test.

RESULTS AND DISCUSSION

The attracting effectiveness of the various types of panels showed that the translucent flat or noncorrugated was significantly greater at the 5% level for trapping stable flies followed by white, green, yellow, and gold (Table 1). Also, for each of the last 4 colors, flies showed a preference for the flat or noncorrugated panels and vertical over horizontal positioning of the corrugation. The order of effectiveness might have changed had the panels been allowed to remain in the field for a longer period since the corrugated panels contained more surface area. Table 1 shows the number of flies counted in the twenty-four 25 cm^2 areas on each of the 12 panel combinations. The 15,543 flies represent 13.9% of the total flies trapped. Therefore, ca. 122,000 flies were trapped during the 6 week study.

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