CONTROL OF SPITTLEBUGS ON STRAWBERRIES

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Large numbers of spittlebug nymphs, *Philaenus leucopthalmus* (L.) were found infesting strawberry plants on May 5, 1953, near Winlock, Washington. Most of the nymphs were so young they had not yet formed spittle masses. The field had been planted in 1952. Leaves of the mother plants were badly twisted and distorted and the petioles greatly shortened, while the leaves of the runner plants apparently were developing normally. Apparently eggs had been laid on the mother plants late in the summer of 1952 before the formation of the runner plants and the very young nymphs had not yet dispersed.

Arrangements were made to apply insecticide dusts with as little delay as possible. Early applications of insecticide dusts on a crop such as strawberries would be highly desirable since there would be a minimum danger of leaving a poisonous residue on the fruit. Rosenstiel (1951) advises dusting as soon as possible after the fruit spurs separate in the blossom clusters. The separation of the fruit spurs exposes the nymphs to the dust.

TABLE 1

Mean numbers of spittle masses

Treatment	Percent	Spittle masses per 100′ of row	
		Mean No.	Mean (Transformed)
Heptachlor	2.5	14.1	3.80
Aldrin	2.5	18.7	4.37
Chlordane	5.0	29.1	5.43
DDT	5.0	90.1	9.51
Check (Untreated)		203.7	14.29
L.S.D. ($P < 0.05$) for Check vs. any Treatment			6.09
L.S.D. ($P < p.05$) for Between Treatments			2.81

Stitt and Allmendinger (1954) found that chlordane gave better control of the spittlebug on strawberries than did methoxychlor, rotenone, TDE, or a combination of DDT and parathion. They were attempting to develop an economical control of both spittlebugs and the omnivorous leaf tier, two pests that often occur at the same time. Root weevils are also a pest of strawberries in western Washington and perhaps a control program could be devised that would include this pest as well. The season of 1953 was greatly retarded. The flower buds on the strawberries were still closed and the fruit spurs had not yet separated.

The following dusts were applied on May 12 and 13 with a duster driven by the power takeoff on the tractor: aldrin 2.5 percent, chlordane 5.0 percent, DDT 5.0 percent and heptachlor 2.5 percent. Each plot consisted of 12 rows approximately 240 ft. long. Each treatment was replicated five times. The duster was set to give adequate coverage and applied about 20 lbs. to the acre.

Counts were made on June 17 and 18 to determine the number of spittle masses on the plants in 100 ft. of row. Two 100-foot sections were taken from near the centers of the middle rows in each replica. All spittle masses in these sections were counted. Since there were five replicas, data were taken from 1000 ft. of row for each treatment. The data have been summarized in table 1. The spittle mass counts were transformed, using the formula $\sqrt{x+3/8}$, prior to performing the analysis of variance. It will be noted that aldrin and heptachlor were effective

controls for spittlebugs on strawberries in western Washington when applied under the conditions described. As already stated, it had been shown that chlordane was a satisfactory control for spittlebugs; however, when aldrin and heptachlor were tested in comparison with chlordane, they gave somewhat better control.

LITERATURE CITED

Rosenstiel, R. G. 1951. Control of the meadow spittlebug in Oregon. Ore. Agric. Expt. Sta. Circ. 505.

Stitt, L. L., and **D. F. Allmendinger.** 1954. Spittlebug and omnivorous leaf tier in strawberries. Jour. Econ. Ent. 46: 876–878.