Studies on the Control of the *Taxus* Mealybug

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The Taxus mealybug which occurs over the entire State, is a serious pest of Taxus in the nursery. Although its identity is still controversial, the insect is probably a grape mealybug *Pseudococcus maritimus* (Ehrh.). In connection with our work on this insect in Indiana (1949) we found small nymphs, barely discernible with the naked eye, at Weigand's Evergreen Nursery, Indianapolis, Indiana on April 12. It is reported that the insect overwinters as a small nymph protected by the white waxy threads produced by the female as well as by bits of bark, dead foliage and other debris. By May 17 the mealybugs were established on the twigs where they feed. By June 22 adult mealybugs, egg masses and small nymphs were present in abundance.

Until R. B. Neiswander (1949, Jour. Econ. Ent. 42(1):41-44) discovered the effectiveness of parathion applied as two sprays in the middle of May and the first of June no 100 percent control measure was known.

In 1949 six materials and one mixture were tested on two varieties of Taxus commonly grown in the nursery, *Taxus cuspidata* and *T. cuspidata* var. *capitata*. Each of the five materials were applied to a ten shrub plot at the Weigand's Evergreen Nursery. The plots were arranged in a randomized block design and replicated four times. The first application was made on May 17 and the second on June 7. The mixture of parathion and the miticide C-854 was applied only once on May 17. These materials were applied at 200 pounds pressure with a *Spartan Sprayer*, model 3, equipped with a *Tee Jet* nozzle No. SS 8006.

Fifteen days after the last application twig samples, approximately 6 inches long, were taken from the approximate middle of each plant. The twigs were placed in waxed ice cream cartons and returned to the laboratory where the branches were examined under the microscope and the mealybugs and egg masses counted.

It was noted from these data, presented in Table I, that two applications of parathion gave complete control, while one application of the mixture of parathion and the miticide C-854 gave almost perfect control since only one adult and no egg masses were found in the samples. It will also be noted that the variety *T. cuspidata capitata* which is a more dense shrub had more mealybugs and egg masses than the more open *T. cuspidata*.

TABLE I. Effect of various chemicals on the mealybug.

Material and dilution per 100 gallons	Manufacturer	*Taxus cuspidata*		*Taxus cuspidata* var. *capitata*	
		No. Live Mealy-bugs	No. Egg Masses	No. Live Mealy-bugs	No. Egg Masses
Parathion, 1 pound (25%)	American Cyanamid Company	0	0	..	..
Mixture, parathion 1 pound (25%) and C-854,[1] 1 pound (50%)				1	0
C-854,[1] 1 pound (50%)	Dow Chemical Company	13	2	18	8
methoxychlor, 2 pounds (50%)	E. I. du Pont de Nemours and Company, Inc.	43	4	33	14
Compound 118[2] 1 pound (25%)	Julius Hyman and Company	5	2	25	13
Compound 497,[3] 1 pound (25%)	Julius Hyman and Company	6	4	27	14
TDE (DDD) 2 pounds (50%)	Rohm and Haas Company	36	6	24	15
Check-untreated	.....	27	2	29	17

[1] A miticide containing 50% of K-6451 (p-chlorophenyl p-chlorobenzenesulfonate).

[2] Compound 118 has the chemical formula 1,2,3,4,10,10-hexachloro-1:4,5:8 diendomethano-1,4,4a,5,8,8a-hexahydronaphthalene.

[3] Compound 497 has the chemical formula 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4,5,8-dimethanonaphthalene.