

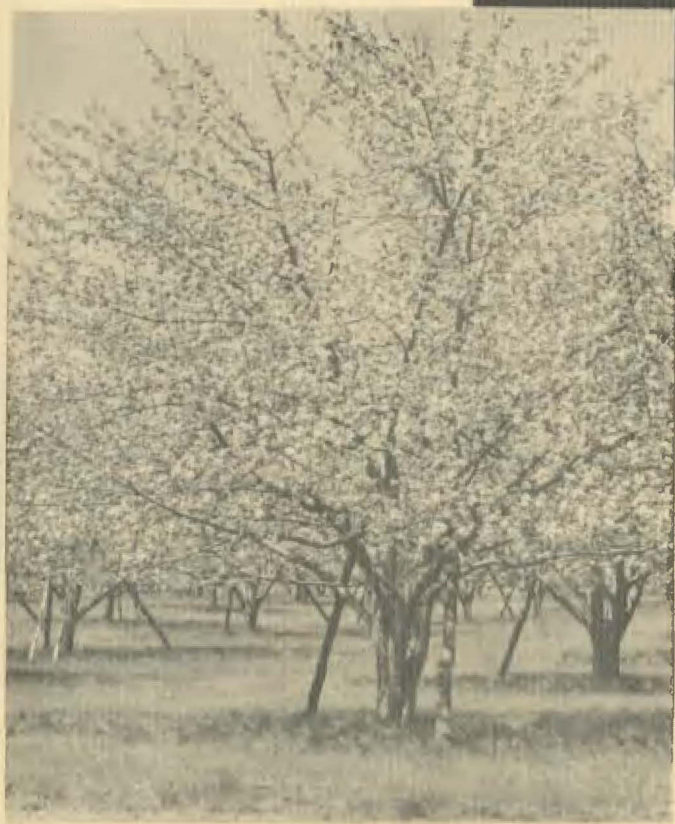
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Progress Report No. 9
February 1955

"General - Purpose"

FRUIT SPRAY

MIX TESTS - 1954



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"General - Purpose"

FRUIT SPRAY MIX TESTS - 1954

William Tunis

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This is the continuation of a study on "General-Purpose" fruit spray mixes and reduced spray schedules started in 1953. A previous progress report has been issued on the 1953 results.²

MIXES

The A mix (see formula below) was the best of the three mixes tested in 1953. The B and C mixes were decided upon at a meeting of research and extension workers from Connecticut, Massachusetts, and Rhode Island in an attempt to improve on A mix. The B mix is a concentrated form of A in which the amount of inert or "filler" material was reduced as much as possible. Stickers were added to C to improve the adhesive properties of the mix. The formulae tested in 1954 were as follows:

Formula for A Mix

Ingredient	Percentage
Malathion, 25% wettable powder	20
Methoxychlor, 50% wettable powder	30
Captan, 50% wettable powder	30
Inert (talc)	20

Formula for B Mix

Ingredient	Percentage
Malathion, 25% wettable powder	30
Methoxychlor, 50% wettable powder	35
Captan, 50% wettable powder	35

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²Tunis, W.D., R.H. Sudds, and P. Garman. "General-Purpose" Fruit Spray Mix Tests - 1953. Storrs Agricultural Experiment Station. Progress Report 6. 1954.

Formula for C Mix

Ingredient	Percentage
Malathion, 25% wettable powder	20
Methoxychlor, 50% wettable powder	30
Thiram, 50% wettable powder	30
Continental clay	15
Soya flour	2.5
Dresinate XX	2.5

Dilution rate was 10 pounds per 100 gallons of water for the A and C mixes, and 5 pounds per 100 gallons of water for the B mix.

TESTS ON APPLES

Spray Schedules

The number of spray applications tested were: (1) Minimum - 6 sprays (2 pre-bloom, 4 post-bloom); (2) Mean - 8 sprays (2 pre-bloom, 6 post-bloom); and (3) Maximum - standard commercial schedule as followed in Connecticut.

The block in which the spray tests were made was divided into 54 plots, each consisting of two McIntosh and one Cortland tree. The plots were each separated on all sides by buffer rows. Each of the three mixes was tested using the minimum, mean, and maximum number of spray applications in two randomly selected plots. All trees were approximately 18 years old and were treated in the same way in pruning and fertilization. All spray applications were made with a hydraulic sprayer.

The dates of the spray applications for the three different schedules are shown in Table 1.

TABLE 1. Dates of spray applications for the three different schedules.*

6 SPRAYS	8 SPRAYS	STANDARD COMMERCIAL SCHEDULE	
April 28	April 28	April 13	June 9
May 3	May 3	April 16	June 21
May 17	May 17	April 23	June 30
May 27	May 27	April 28	July 15
June 21	June 9	May 4	July 29
July 29	June 21	May 10	August 12
	June 30	May 17	
	July 29	May 27	

*With respect to apple tree development, pink occurred on May 3 and calyx on May 17.

On June 18 counts were made to determine the effectiveness of each mix and each schedule for the control of apple scab. The counts were made by walking slowly around each tree and counting all scabby leaves visible at eye level. The results (average number of scabby leaves per tree) for the different treatments are given in Table 2.

TABLE 2. Apple scab counts of June 18, 1954.

Mix	No. of Sprays	Average Number of Scabby Leaves Per Tree	
		McIntosh	Cortland
A	6	10.3	3.3
	8	3.6	3.1
	14	4.5	1.7
B	6	20.8	7.9
	8	16.4	7.7
	14	3.2	3.5
C	6	18.2	9.7
	8	16.9	6.5
	14	2.9	1.8

Just prior to and during harvest, insect and disease damage counts were made on the drops and fruits on the trees in all of the plots. These data are presented in the following table:

TABLE 3. Insect and disease damage counts made at harvest

Treatment (Mix and No. of Sprays)	Variety	Percent Good	Percent Curculio	Percent Other* Insects	Percent Scab	Percent Russett (heavy)
A (14 sprays)	McIntosh	88.6	1.3	5.4	1.3	3.4
	Cortland	87.3	0.6	4.2	1.8	6.1
A (8 sprays)	McIntosh	78.3	3.7	7.4	8.9	1.7
	Cortland	81.1	0.9	11.9	5.2	0.9
A (6 sprays)	McIntosh	55.4	9.9	19.4	15.2	1.1
	Cortland	55.7	14.1	17.1	13.4	0.7
B (14 sprays)	McIntosh	78.2	5.9	9.9	4.8	1.2
	Cortland	80.5	4.4	8.4	5.3	1.4
B (8 sprays)	McIntosh	69.0	6.3	7.4	16.4	0.9
	Cortland	75.4	4.2	11.9	7.2	1.3
B (6 sprays)	McIntosh	45.8	17.9	16.4	19.6	0.3
	Cortland	46.8	11.3	28.9	12.5	0.5
C (14 sprays)	McIntosh	82.0	4.1	5.9	3.9	4.1
	Cortland	78.8	6.7	6.2	4.7	3.6
C (8 sprays)	McIntosh	74.5	3.9	9.2	11.4	1.0
	Cortland	79.8	4.2	7.6	6.9	2.1
C (6 sprays)	McIntosh	56.2	12.8	16.1	14.2	0.7
	Cortland	55.8	9.7	21.3	11.8	1.4
Check Plot	McIntosh	----	34.3	47.7	46.6	---

*Other insects refers to apple maggot, codling moth, red-banded leafroller and bud moth.

TESTS ON PLUMS

A and C mixes were also tested on the following varieties of plums: Formosa, Redwing, Shiro, Burbank, Abundance, Santa Rosa, Stanley. Sprays were applied on eight dates, April 30, May 20, June 10, June 22, June 30, July 16 and July 29.

Just prior to harvest plum curculio and brown rot damage counts were made. These data are presented in the following table:

TABLE 4. Insect and disease damage counts made at harvest.

Treatment	Percent Good	Percent Curculio	Percent Brown Rot
A	92.2	2.6	5.2
C	84.1	3.6	12.3
Check	28.3	23.5	48.2

CONCLUSIONS

For overall pest control, A mix (captan, malathion, and methoxychlor plus talc filler) was the best mix for the second consecutive year.

Visual tests indicated that the stickers included in C mix were not effective in holding the mix on fruit or foliage.

For efficiency and effectiveness on apples in the home fruit planting, the optimum number of sprays in Connecticut seems to be the 8-spray schedule. The 6-spray schedule on apples proved to be extremely poor and is not usable under Connecticut conditions.

On plums the A mix was better than the C mix. Eight spray applications gave effective control of brown rot and plum curculio.

The A mix has officially been named the "NYNE General-Purpose Mix" since research and extension workers from the New York-New England area were instrumental in the development of this mix.

