PELLETING

Continued from page 6

leted seed emerged above ground somewhat later than those from the uncoated seed.

It is possible that the moisture supply to these seeds was not as uniform as that prevailing in the cold-frame beds, which could account for the slower emergence.

The differences in the field tests were less than those shown in the data for the seeds planted in the flats.

Effect of Pelleting on Rate of Emergence of Onion Seed—1947

Average number of days from seeding to appearance of seedlings

	Uncovered* cold frames	Field† planting
Uncoated seed	11.9	18.4
Pelleted seed	13.0	19.5
Difference required for significance at the 5% level (odds 19–1)	not sig.	1.1
Dates of tests	June-Aug. Oct.-Nov.	Oct.-Dec.

* Average of seven lots of seed.
† Average of six lots of seed.

Effect of Pelleting on Rate of Emergence of Tomato Seed—1947

Average number of days from seeding to appearance of seedlings

	Uncovered cold frames*
Uncoated seed	11.7
Pelleted seed	12.3
Dates of tests	Aug.-Oct.

* Average of two lots of seed.

Effect of Pelleting on the Rate of Emergence of Lettuce Seed—1947

Average number of days from seeding to appearance of seedlings

	Field planting*
Uncoated seed	8.9
Pelleted seed	11.7
Difference required for significance at the 5% level (odds 19–1)	0.5
Dates of tests	Nov.-Dec.

* Average of four lots of seed.

Conclusions

1. In both cold-frame and field tests pelleted seed germinated as well, but at a slightly slower rate than uncoated seed. However, it does not seem that the slight delay would be very apparent or of any consequence in commercial field plantings.

2. Standard laboratory germination tests show some depression in germination due to pelleting.

3. Under the conditions of these experiments, it appears that the process of pelleting has had no harmful effect upon the seed and that any differences noted between pelleted and uncoated seed—in percentage germination or rate of emergence—can be attributed to the presence of the clay coating itself.

4. No significant difference in percentage germination or rate of emergence were noted between pellets oven-dried immediately after coating at 90° F and pellets air-dried for 48 hours before oven-drying at 90° F.

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Twig Dieback

on orange and grapefruit trees

L. J. Klotz

Severe twig dieback sometimes develops during the spring on navel, Valencia, and grapefruit trees, being particulary extensive on navel trees.

The trouble was general throughout the citrus growing areas this spring and in the spring of 1946, being particularly severe in Tulare County navel orchards.

Twigs and small branches are killed back in length from a few inches to two feet or more. A small side shoot of the current spring's growth may wilt and die. From such a shoot the infection may enter the larger main twig, which is girdled, killing everything beyond to the end of the twig.

During investigations, several bacterial species and many fungus species including the genera *Alternaria, Colletotrichum, Fusarium, Hormodendrum* and *Stemphyllium* were isolated from injured twigs. The blast bacterium was not found. These organisms can likely extend the damage in the injured twigs, but they have not been regarded as primary parasites.

The south side and southwest quadrant of the tree suffer the most injury. Groves in poor condition from lack of care, from waterlogging, and from cold showed more of the dieback than well-kept groves.

The stimulation to growth and release of moisture into the air by the leaves caused by unusually early warm spring weather probably plays a part in causing the injury. The foliage suddenly starting to give off moisture rapidly cannot be supplied with sufficient soil moisture by the still relatively inactive roots in the cold soil.

The stress may also induce the formation of gums which plug the water-conducting vessels. As a result, the new and some older growth are injured or killed by water depletion.

This may occur even where the tree has an adequate supply of good feeder roots and in the presence of abundant soil moisture. The fungi and bacteria present complete the destruction of the injured leafy twigs.

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DONATIONS FOR AGRICULTURAL RESEARCH

Gifts to the University of California for research by the College of Agriculture accepted in June, 1948

BERKELEY

Allied Chemical & Dye Corporation $600.00
For testing miticides

Swift & Company $2,000.00
Investigations of amino acid requirements for chicks

American Cyanamid Company
100 pounds 1% Parathion dust, 50 pounds ½% Parathion dust, 15 pounds 25% wettable powder, 15 pounds 25% concentrate to make 350 pounds 1% dust plus 5% DDT.
Experimental use for insects on cotton

Dow Chemical Company .... 5 gallons of Dowax 222
25 pounds Neotran wettable, 24 pounds DN dry mix
Experimental use on deciduous fruit tree insects

E. I. DuPont de Nemours Company .... 50 pounds Copper A Compound, DuPont
4 pounds DL Lysine monohydrochloride, 4 pounds DL Methionine

Hercules Powder Company
200 pounds 20% Toxaphene dust and 5 gallons 50% Toxaphene concentrate
Experimental use on cotton insects

Lederle Laboratories Div., American Cyanamid Co. .... 10 grams Folvite powder
To study effects of folic acid on growth and hatchability of chickens

Niagara Chemical Div. of Food Machinery Corp. .... 100 pounds Hexcide dust
Experimental use on cotton insects

Stauffer Chemical Company .... 50 pounds 2% Gamma benzene hexachloride
Experimental use on cotton insects

Tobacco By-Products & Chemical Corporation .... 27 pounds 14% dry nicotine
For experimental insect control

DAVIS

California Committee on the Relation of Electricity to Agriculture $3,625.00

Strawberry Institute of California $150.00
Strawberry investigations

RIVERSIDE

American Cyanamid Company $2,000.00
Investigations of organic materials for insecticidal and fungicidal value against fruit pests.