Low Cost Control Measure For Wireworms Made Possible By New Chemicals For Soil Application
H. Harry Lang, Jr.

Liquid Manure—Pumps, Tanks and Application Method
John B. Duble

California’s Farm Products Affected By Foreign Trade
M. E. Benedict

Soil Application

(!) Results of soil treatment. Foreground, soil treated; background, soil treated with approximately 400 pounds of diuron per acre. (2) Diuron is a condition ready for planting—too wet or too dry. Under certain conditions a rain or roller should be pulled behind the applicator to fill up the furrows. The treatment should be made at temperatures of 65° to 70° F.

The chemical is a white to brown powder. It is easily soluble in water and can be handled by all operators, although it is advisable to use a respirator when treating large areas. The area to be treated should be thoroughly covered with a thin application of the powder. The material should be mixed with the soil to a depth of 6 inches and then reworked with a hoe to a depth of 9 inches. The soil should be adequately tilled for a distance of not less than 15 days before planting. In certain cases in which the application is made in a manner or during the first 14 days before planting—too wet or too dry. Under certain conditions a rain or roller should be pulled behind the applicator to fill up the furrows. The treatment should be made at temperatures of 65° to 70° F.

The cost of material and application will run from $25 to $30 an acre depending upon the amount of material used, the number of acres to be treated. One treatment usually continues to give a partial control the second season and into the third year. The lasting effect of one treatment will run from 5 to 10 acres per application.

Pour out all the water and soap solution, and then let the soil dry out. In the fall has given outstanding results. The addition of 35 pounds anhydrous ammonium nitrate to the fall application of diuron has given outstanding results. The yield of the fall is based on a rather complex set of factors and for the reason a carry-over effect to a second year cannot be predicted definitely.

D-D is a new brand of chemical for the treatment of wireworms. It is based on a principle that when the wireworm is about to molt it will be killed. The material can also be used in hand applicators applying 3.0 milliliters per shot at 12 inch intervals.

The dosage necessary for wireworms is 400 pounds to the acre which is more than is ordinarily recommended for nematode control. As with ethylene dibromide this material should be applied prior to planting a crop, and because of the

Small Size Citrus Fruits May Be A Genetics Problem
Robert W. Hodgson

The fruit of the smaller citrus varieties is a problem currently of great importance in California and occasionally in Florida. The smaller size of fruit attained by the crop of any given citrus tree appears to be due to a number of factors, of which the following are probably the chief:

1) Variety, 2) rootstock, 3) nutrition, 4) weather.

Variety

Among commercially grown varieties, the Valencia orange is the smallest, with the Hamlin variety in California primarily and with the Valencia variety in Florida.

Rootstocks

Certain rootstocks tend to reduce fruit size, others to increase it, and still others apparently have no effect. Sour orange, at least under certain conditions, seems to exhibit the tendency to reduce the average fruit size but to a lesser degree than the Valencia.

The small fruit size problem in Florida oranges has been traced to small seeds on sour orange rootstock. While in Florida the type of rootstock is not available. It is certain that a large part of the Valencia orange trees in the California district have a small fruit problem. Most results are on sour orange rootstock.

Mineral Nutrition

The mineral nutrients most commonly deficient in Florida are magnesium and the other trace elements. The cost of material and application will run from $25 to $30 an acre depending upon the amount of material used, the number of acres to be treated. One treatment usually continues to give a partial control the second season and into the third year. The lasting effect of one treatment will run from 5 to 10 acres per application.

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Benene Hexahedron

Benene hexahedron is one of the most promising of the newer materials for wireworm and garden centipede control. It kills the wireworm chiefly by contact action over a period of several months. Unfortunately it is of little value for the successful control of nematodes. The chemical is a white to brown powder with a very pungent, earthy smell.

Late in the fall, in dry years, trees injured by the shot-hole borers are badly defoliated, because the gum which has been accumulating through the summer is drained, reaching their greatest total just at the start of the fall rains. As long as the tree is green, there leaves the gum is not conspicuous; but as soon as the tree becomes wholly brown, the gum becomes more obvious and forcible awareness of the condition is likely. The gum is composed of the tars and resins of the tree, each compound in a mixture. Each gum acts as a lens to focus the light to a bright point. The advent of the fall rains, the gum becomes brown, and drops from the tree, and to the casual observer the gum drops again appear to he in good health.

Recognition of the Shot-hole Borer

The pest can be recognized by the small, dark spots on the undersides of the leaves about one-tenth inch in length. Their cylindrical bodies are comprised of pen- nillecal. The adult beetle crawls rapidly over the back of infected trees, with a nervous, jerky gait.

Eg-laying Habits

It is also attended by the adults feed on the wood as they bore into the tree, and is also probable that they would lay eggs in the tunnel so constructed but the tree begins to heal before the eggs matured.
dution. Their dependence on foreign
sources of supply is far greater than
that of any other state in the
Union. We have almost all the types of
food products we need and all of the
United States—never in amounts sufficient.
For example, the income from dairy pro-
ducts, pork, eggs, and wool—accounted for an
amount of wool sold abroad of $20.00 per
acre. As a spray, it takes 8.3 to 15.8
pounds of the dust in 1 gallon of oil. It is
related to 6% graminae.

One of the largest of the
products is the group that in-
accounted for around 20% of Cali-
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income source is the group that in-
ccluded soybeans, cotton, peanuts,
canned and frozen fruits, and
which accounted for approximately 20%
Agriculture's agricultural income in 1939. Three
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