UNIVERSITY OF KENTUCKY

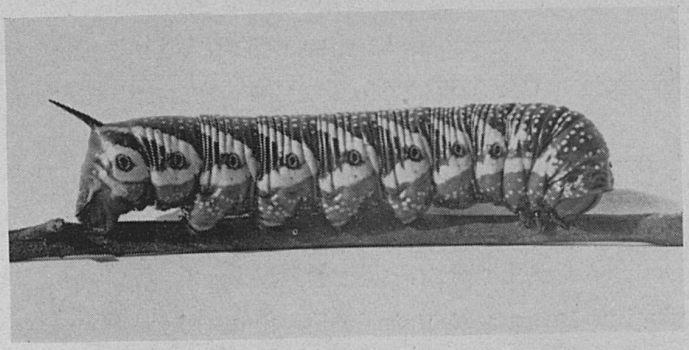
COLLEGE OF AGRICULTURE

Extension Division

THOMAS P. COOPER, Dean and Director

CIRCULAR NO. 331

SUGGESTIONS FOR THE CONTROL OF TOBACCO INSECTS IN 1939



Lexington, Ky.

March, 1939

Published in connection with the agricultural extension work carried on by co-operation of the College of Agriculture, University of Kentucky, with the U. S. Department of Agriculture, and distributed in furtherance of the work provided for in the Act of Congress of May 8, 1914.

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SUGGESTIONS FOR THE CONTROL OF TOBACCO INSECTS IN 1939

ARRANGED BY W. A. PRICE

The control of tobacco insects is an important phase of the tobacco industry. Differences in type of tobacco and conditions under which it is grown, make control measures somewhat complicated. A satisfactory remedy for a given insect in one area might be entirely unsatisfactory in another area. Because of these and other problems encountered with tobacco insects, a Tobacco Insect Council was formed in 1937. The members of this organization are entomologists interested in and working on tobacco insect problems. The Council meets once each year to pool its information and formulate recommendations. The results of the conference this year, as affects burley and dark fire-cured tobacco, are contained in the following suggestions.

In many instances several remedies are given for an individual insect. This is done in order to provide selectivity. Some of the materials suggested might not be available in certain areas and others may be on the premises ready for use. The various remedies given are about equal in value and the one used will depend upon local conditions.

TOBACCO FLEA BEETLE

In Plant Beds

Prevention. Burn or steam beds prior to planting to destroy insects present in the top soil. Construct beds so that sides are well banked and with boards fitted closely around margins. Cover beds with cheesecloth containing at least 25 strands per linear inch. The proper construction is important in the control of tobacco flea beetles. (See Appendix.)

Dust Containing 1 Percent Rotenone. Apply with a rotary hand-operated duster at the rate of ½ pound per 100 square yards. Repeat application about every 4 days until control is obtained. The dust can be applied thru the cloth cover over the plant bed provided the cover is dry and is not resting on the plants.

Dust Containing Paris Green, 1 part; Lead Arsenate, 5 parts; Hydrated Lime, 4 parts. Mix well and apply at the rate of ¾ pound per 100 square yards. Repeat application about every 4 to 7 days until control is obtained. Apply with a rotary hand-operated duster.

Dust Containing 40 Percent of Cryolite. Apply with a rotary hand-operated duster at the rate of ½ pound per 100 square yards. Repeat application about every 4 days until control is obtained.

Dust Containing Barium Fluosilicate, 80 Percent; Dusting Clay, 20 Percent. Apply with a rotary hand-operated duster at the rate of ½ pound per 100 square yards. Repeat application about every 4 days until control is obtained.

Preparatory to Transplanting. It is recommended that young plants be dusted in the bed just prior to transplanting in the field, with a dust containing 1 percent of rotenone or a dust containing 1 part paris green, 5 parts lead arsenate and 4 parts hydrated lime, applied at the rate of 1 pound per 100 square yards. This application in plant beds serves as a control for flea beetles after the plants are set in the field, provided good coverage is obtained.

Newly-set Plants

Dust Containing Paris Green, 1 part; Lead Arsenate, 5 parts; Hydrated Lime, 4 parts. Apply immediately after setting with a plunger type of duster or a rotary hand-operated duster, at the rate of about 3 pounds per acre. Repeat applications about every 7 days until control is obtained.

Dust Containing Cryolite. Apply with a rotary hand-operated duster at a rate to provide good coverage as soon as possible after the plants are set.

Growing Plants

Dust Containing 1 Percent Rotenone. Apply with a rotary hand-operated duster at the rate of 8 to 10 pounds per acre, depending upon the size of the plants. Repeat application until control is obtained and direct dust so that it is applied where the flea beetles are feeding on the plant.

Dust Containing Cryolite. Apply with a rotary hand-operated duster at a rate to provide good coverage. Repeat application about every 7 days during brood emergence.

Dust Containing Paris Green and Lime (1-6 mixture). Apply with rotary hand-operated duster at rate of 5 to 8 pounds per acre, depending upon the size of plants.

HORNWORMS

On Growing Plants

Hand Picking. The control of hornworms by hand picking as generally practiced on small acreages is profitable. During certain periods, however, and under certain conditions applications of insecticides are necessary.

Dust Containing Paris Green, 1 pound; Lime, 6 pounds. Apply with a rotary hand-operated duster at the rate of 7 to 8 pounds per acre, depending upon the size of plants. Care should be taken to get an even coverage of dust, as this lessens the danger of burning the leaves.

Dust Containing Cryolite. Field experiments conducted at Clarksville and Knoxville, Tennessee, have given promising results with this insecticide when used at a strength of 80 percent (80 parts cryolite and 20 parts clay or talc). Apply with a rotary hand-operated duster at a rate per acre to provide good coverage. Repeat application about every 7 days until control is obtained.

BLACK EUROPEAN SLUG

In Plant Beds

Hydrated or Air-slaked Lime. When damage is confined to margins of bed, apply the dust in a band 3 to 4 inches wide and ½ inch thick along margin just inside bed walls. When damage is well distributed over the bed, apply the lime over the entire surface with a duster at the rate of 4 pounds per 100 square yards. Apply when soil and plants are dry so that it will be most effective and not injure young plants. Late afternoon is recommended as the most suitable time for making applications.

CUTWORMS

In Plant Beds

Poisoned Bait.

Wheat bran,	50 pounds
Paris green,	1 pound
Water to moisten	

Apply broadcast at the rate of 4 pounds (dry weight) per 100 square yards, with the bed cover removed.

On Newly-set Plants

Poisoned Bait. Wheat bran, 50 pounds
Paris green, 1 pound
Water to moisten

Apply broadcast, just before plants are set, at the rate of 15 to 20 pounds per acre (dry weight). Apply late in the afternoon for best results. If application is made after plants are set, a small amount of bait should be dropped close to each hill but not touching the plant.

Cultural Control. Fall and late-spring plowing reduces the number of cutworms in tobacco fields.

GRASSHOPPERS

In Plant Beds

Poisoned Bait. Wheat bran, 50 pounds
Paris green or
sodium fluosilicate, 2-½ pounds
Water, 5 to 6 gallons

Apply by hand to bare spots in the plant bed and to a strip just inside the bed wall. Broadcast bait on a narrow strip outside the wall. The bait should not come in contact with young plants, as severe burning would result.

On Newly-set Plants

Poisoned Bait. Wheat bran, 50 pounds
Paris green or
sodium fluosilicate, 2-½ pounds
Water, 5 to 6 gallons

Apply broadcast by hand over field before plants are set. If application is made later, apply bait to row middles only. Also scatter the bait over a strip around the field. The application rate should be approximately 20 pounds per acre.

BUDWORMS

On Growing Plants

Poisoned Bait. Lead arsenate, 1 pound
Corn meal, 75 pounds

Apply a pinch of the dry mixture to the center of each bud at the rate of about 8 pounds per acre. Control can be obtained in most cases with one or two applications. This formula should be closely

followed for best results. Small lots of this poisoned bait can be made as follows:

Lead arsenate, 2-½ ounces or 6 heaping teaspoonfuls
Corn meal, 1 peck

GREEN JUNE BEETLE LARVAE

In Plant Beds

Steam Beds in Late Summer or Early Fall before larvae go deep into ground:

Poisoned Bait. Wheat bran, 25 pounds
Paris green, 1 pound
Water to moisten

Mix well and apply by hand at the rate of 10 to 12 pounds per 100 square yards.

Paris Green. Apply in the fall of the year on the plant-bed locations at the rate of 1 pound of paris green per 100 square yards. The bed site should be selected in the fall of the year on land free of June beetle larvae. These methods of control have not proved satisfactory in all tobacco districts, but it is the best information available on the control of this pest.

TOBACCO CRAMBIDS (SOD WEBWORMS)

On Newly-set Plants

Poisoned Bait. Corn meal, 25 pounds
Oil of mirbane (Nitrobenzene), 1 ounce
Paris green, 1 pound
Water, 1 pint

Mix the corn meal and paris green *thoroly,* after which the oil of mirbane and water should be added so as to give an even distribution of the liquid thruout the corn meal. Apply to rows or hills of tobacco with stick can applicator at the rate of 10 pounds per acre for dark fire-cured tobacco (3500 plants per acre) or 20 pounds per acre for burley tobacco.

APPENDIX

TOBACCO BED FRAME AND COVER

Make the frame of 6-inch boards and be sure it is at least 2 inches less in width than the cloth. Measure the width of the frame from the outside edges of the boards. Set the boards an inch or slightly more into the soil, then bank earth against them and tamp. This prevents entrance of beetles under the boards. Fit the boards at the joints so there are no cracks for the beetles to get thru. Anchor the frame to the ground by nailing the boards to pegs driven into the ground at corners, middle of each board, and joints. This makes a frame that will not give when the cloth is stretched over it. Place the cloth over the frame, draw it down the outside edges of the boards and fasten with small nails or strips of wood. There must be no openings between the cloth and frame for beetles to enter the bed.

The cost of the boards and enough creosote to brush or paint them, at present prices, is about eight dollars for a bed 9 feet wide by 100 feet long, or enough bed for about 3 acres of tobacco. The boards, if given care, will last for about 4 years, so that the cost distributed over that period makes a small yearly outlay. The saving in cost of insecticides and labor in applying them, over the same period, will be about the same as for cost of boards. The barrier keeps out other pests such as cutworms, army worms, springtails, and slugs. If the beds are burned or steamed to kill grass and weed seed, it will seldom be necessary to use insecticides.