

M. S. C. BULLETIN ROOM FILE COPY FOR LOAN ONLY

Potato Protection

**FOR SMALL
ACREAGES**



get that extra 40 bushels per acre

MICHIGAN STATE COLLEGE :: EXTENSION DIVISION

EAST LANSING

Cooperative Extension Work in Agriculture and Home Economics, Extension Service,
Michigan State College and the U. S. Department of Agriculture Cooperating.

Potato Protection for Small Acreages

By J. H. MUNCIE and C. B. DIBBLE

Small patches of potatoes suffer from the inroads of the same diseases and insects as do large patches. The protection of these smaller fields is important to the grower and the person who is going to eat the potatoes grown. Good potatoes are usually produced on healthy, vigorous

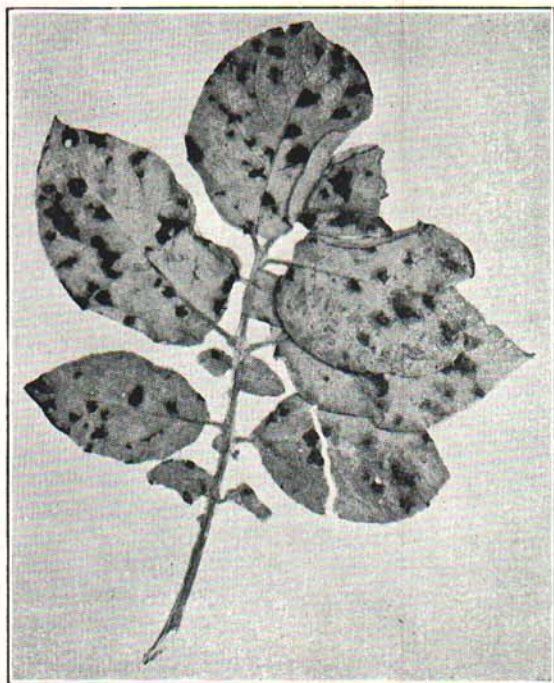


Fig. 1. Early blight makes brown spots on potato leaves.

vines that mature naturally. Better quality potatoes can be grown for use at home and to sell than are often offered to consumers of the Michigan product. The housewife will gladly pay more for clean, mature potatoes. Potatoes not protected with dust or sprays make poor seed stock. The yields from unprotected fields are usually decreased about 40 bushels per acre. The protection of potatoes from insects and diseases can be accomplished either by spraying or dusting. Spraying requires equipment that often costs more than the small acreage grower feels able to invest. When sprayers are available that will deliver 250 pounds of pressure their use is preferred. They will enable the grower to

secure adequate protection for the growing potato plants with a low cost.

Spraying

Spraying with 100 to 150 gallons per acre of 8-12-100 bordeaux, and calcium arsenate, four to seven times each season will give good protection from leaf-hoppers, blight, striped potato beetles, flea-beetles and other leaf-eating insects. Hand sprayers as commonly used with low pressures seldom give effective protection.

Dusting

Protection with dry materials, dusts, is nearly as good as with wet sprays. There is no water problem to meet when dust is used and in



Fig. 2. Hopper-burn and enlarged leaf-hoppers.

the case of hand equipment the 30 to 40 pounds of dust is much easier to carry than 800 pounds of water for each acre.

Horse and tractor drawn dusters are being used but if water is readily available, the lower cost of the materials needed and the better job done by a good sprayer would usually lead a grower to buy and use a sprayer. When traction dusters, horse or tractor drawn, are used the dust is prepared by the same formula as for the hand crank duster.

Hand Dusters

The crank type hand duster has become very popular in the last few years. The low cost of these machines, \$10 to \$25 and the short time necessary to cover a small patch of potatoes with good protection appeals to many small acreage growers.

For fields of less than five acres where engine sprayers are not available the crank type hand duster seems to "fill the bill". Two rows are dusted at a time. Most men can do an acre an hour and some do more. Good protection is readily secured by nearly everyone who has used these machines and is seldom attained with hand spraying equipment



Fig. 3. Flea beetles eat small holes in leaves.

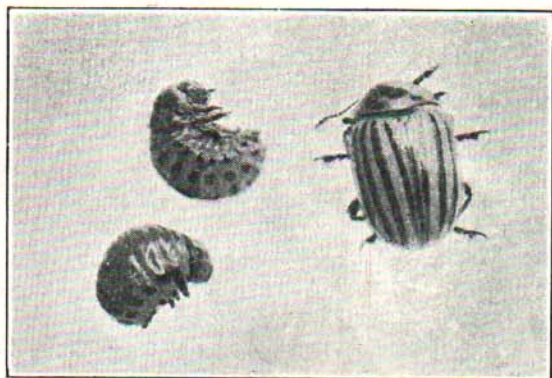


Fig. 4. Potato beetles must be controlled early.

How to Dust With a Crank Duster

1. Use copper-lime-arsenate or fixed copper dust.
2. Set nozzles to shoot at base of vine at 45 degree angle to roll the dust under the plants.
3. Apply 30 to 40 pounds of dust per acre.
4. Start early — as soon as most plants are out of ground.
5. Apply every 10 to 14 days or after hard rains.
6. Apply **only** when **air is quiet**, with or without dew.

Copper-Lime-Arsenate Dust

Mix thoroughly in a rotary mixer the following ingredients:

For 100 Pounds of Dust:
 75 pounds Hydrated Lime
 20 pounds Monohydrated Copper Sulphate
 5 pounds Calcium Arsenate

For 20 Pounds of Dust:
 15 pounds Lime
 4 pounds Monohydrated Copper Sulphate
 1 pound Calcium Arsenate

Several smooth stones in the mixer help the mixing operation.

Fixed Copper-Arsenate Dust

Dusts containing one of the fixed copper materials may be used in place of the monohydrated copper sulphate-lime dust. Fixed copper dusts contain approximately 7 per cent metallic copper. The fixed copper is mixed with talc or pyrophyllite and usually a sticker such as flour or bentonite. Calcium arsenate is added for control of leaf chewing insects.

These dusts may be obtained ready mixed and are applied at 30 to 40 pounds per acre.

Calcium arsenate is used for leaf-eating insects, and the small cost per acre seems to warrant its use in every application.

Ready mixed dusts can be purchased of most insecticide dealers on order but often cost more than the ingredients for mixing at home.

CAUTION

1. **Keep mixed dust and monohydrated copper sulphate in tight dry containers as they absorb moisture and cake or deteriorate.**
2. **Do not get dust in wet or sweaty clothing on skin. Very serious burns may result. Wear high boots in wet vines.**

(Issued, July 1937; Second Printing, June 1939; First Revision, April 1943)

Michigan State College of Agriculture and Applied Science and U. S. Dept. of Agriculture cooperating, R. J. BALDWIN, DIRECTOR EXTENSION DIVISION, Michigan State College, East Lansing. Printed and distributed under acts of Congress, May 8 and June 30, 1914.