

THE BEAN WEEVIL

C. B. DIBBLE

STOP
the **BEAN**
WEEVIL



MICHIGAN STATE COLLEGE
Of Agriculture and Applied Science

EXTENSION DIVISION
R. J. Baldwin, Director

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"The presence of weevil in beans from 19 of the counties in the Michigan bean belt proves the seriousness of this menace. Our Association is pleased to cooperate in the effort to combat and eradicate this evil, which would affect seriously the entire Michigan bean industry if permitted to go unchecked."

A. L. RIEDEL, President,
Michigan Bean Shippers Association.

Beans become infested with bean weevil in one of two ways: (1) by beetles laying their eggs in the pods in the field, (2) by weevils from infested beans laying eggs among dry beans.

If the beans become weevily in the field, the infestation is brought about by weevils that come from beans kept over winter. These beans may have been stored in any of the places where beans are ordinarily kept, in the granary, in the attic, in cupboards, and like places.

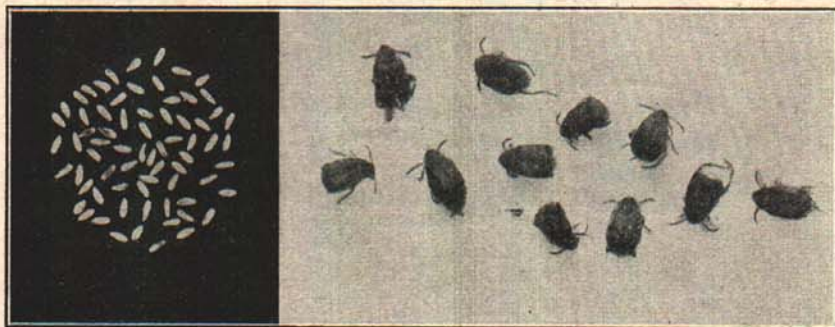


Fig. 1. Eggs of bean weevil (enlarged 50 times) and adult bean weevils (enlarged 9 times).

Bean straw usually contains beans and is a possible source of infestation. Cull beans kept for feeding purposes serve as breeding places. Remember, a few infested beans mixed with uninfested beans will result in all of the beans becoming weevily.

As the adult weevils emerge from the beans, the females lay eggs on or among the dry beans. These hatch into practically invisible grubs which penetrate the dry beans through tiny holes and grow to maturity there. The small size of the entrance holes makes it almost impossible to detect infested beans before the adults are ready to emerge. A new generation may arise every 30 days or slightly less

under favorable conditions of heat and moisture. This results, of course, in the rapid destruction of the beans and enables the pest to multiply to large numbers in a relatively short time. Michigan conditions are ordinarily unfavorable to the development of the weevil but when beans are kept through the summer several generations may develop if not prevented by treatment. Again, remember that it is this breeding in beans here and there about the premises which permits the bean weevil to continue as a pest from year to year.

How to Control Bean Weevil

1. Fumigate, in a tight container, all bean seed and all beans on hand before May 15.

Seed beans may carry the infestation to the field.

Beans held for sale, beans in cupboards, and cull beans for feed may harbor weevils which will escape and fly from such locations to bean fields.

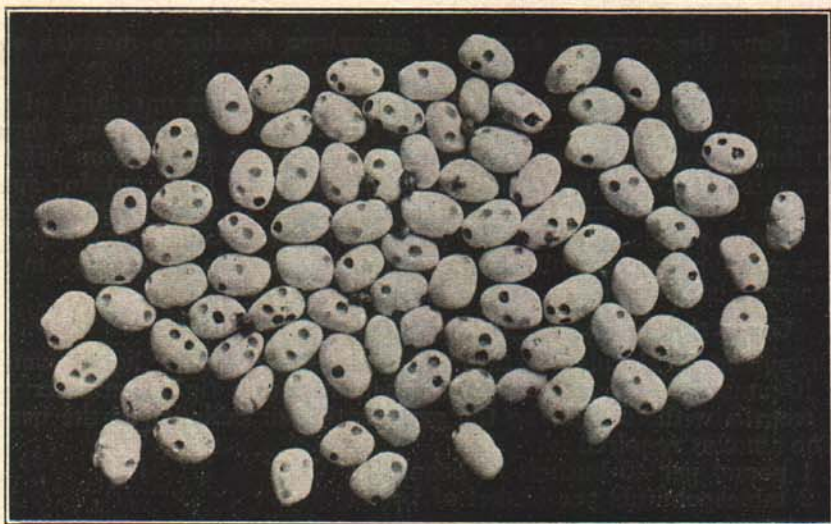


Fig. 2. Weevily beans.

2. Plow under, feed, or otherwise completely dispose of all bean straw, cull beans, granary, and field remnants that have not been fumigated before May 15.

Bean straw always contains some beans and may be a source of infestation.

Cull beans and beans in small quantities in granaries and other places are dangerous.

Dispose of field remnants, vines, and loose beans shelled out in harvesting by pasturing or by plowing the field.

3. Other means of control such as heating, cold storage, and storage in lime have been used to control the bean weevil but are not usually recommended because of difficulties attending their use.

How to Fumigate For Bean Weevil

1. **Be sure the beans are in a tight container. It is useless to fumigate unless they are.**

Bins of matched lumber with double walls are tight enough for fumigation. Bins that are not tight can be sheathed with building paper or newspapers held by pieces of lath tacked over them. A suitable cover for the beans can be made from two thicknesses of canvas, blankets, or sacks with a layer of newspaper between them.

Small quantities of beans can be fumigated in barrels, drums, metal tanks, in milk cans, lard cans, or even in paper sacks. Covers are usually available for such containers or can be made by using the coverings described; or, in case paper sacks are used, the top can be twisted, folded, or tied.

2. **Make certain the temperature is high enough.**

It is a waste of time and money to fumigate if the temperature is below 60° F. Fumigations are most successful when the temperature is 70° F. or more.

3. **Pour the required dosage of propylene dichloride mixture over the beans.**

When beans are over four feet deep in a bin, about one-third of the fumigant should be poured through a piece of pipe or spouting thrust into the beans approximately one-half the way to the bottom. If the cover is not directly upon the beans, allow extra fumigant for space between the beans and the cover at the same rate as for the beans. One bushel equals one and one-fifth cubic feet. Small quantities of beans are most successfully fumigated when there is little space in the container above them.

4. **Cover tightly and keep closed 24 hours.**

Propylene dichloride mixture* is a non-inflammable liquid weighing 10 pounds to the gallon which when used in a tight container will kill weevils without injuring the germination or edibility of the beans.

The amount required is:

- 1 pound per 40 bushels of beans, or,
- 2 tablespoonfuls per bushel of beans

*See your County Agent or elevator operator for names of dealers who sell this material. Follow direction on containers if other fumigants are used.

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