STORED GRAIN PESTS

By
R. L. Post, Associate Entomologist

A survey of 30 grain elevators and farmer storage bins in an area bordered by Hillsboro, Mayville, Northwood, Cooperstown, Hannaford and Valley City was recently conducted by the Department of Agricultural Entomology. Samples of grain were taken from the top and at depths of approximately two feet from bins which had been undisturbed for some time. This inspection revealed the presence of grain mites and psocids. The grain mites were particularly abundant in barley with only a few book lice being found. Wheat had a trace to a few mites and more book lice in most samples. The book lice were so common in a few elevators that they formed a solid mass along the sides of bins and chutes. When present in large numbers these pests promote heating and sweating of grain and in some instances, an undesirable odor. Members of the grain trade have reported a dockage discount of 40 to 60 cents a bushel due to damage resulting from these pests, especially grain mites.

It is suggested that farmers examine their storage bins if they have been undisturbed for some time. A crusting and heating of the top of stored grains should be regarded with suspicion for the presence of psocids. However, an examination of the surface does not reveal the presence of mites as they usually are a foot or more below the surface of the grain. If examination reveals the presence of pale, yellowish-white mites which are just visible with the naked eye and which move slowly or psocids which are 1/25 of an inch long, control measures should be taken. This can usually be accomplished by turning the grain unless the infestation is too extensive and the general temperature of the grain and air too high. In that case fumigation must be resorted to. We have found that killing the insects by fumigation usually results in return of the temperature of the grain to normal.

The mild weather which has prevailed this fall has been a contributing factor in the increase of these stored grain pests and they have been reported all the way from Canada to Texas this fall. Farmers and elevator operators should be on the lookout for these damaging grain pests. They should make frequent inspections, especially where grain has been undisturbed for a few weeks.

The bins in country elevators and farm storage are usually of the wooden crib type, which are difficult to fumigate and owing to the nature of their construction, harbor many insects that infest grain placed in them for temporary storage.

If the bins are open at the top which is the usual condition, **calcium cyanide should not be used** and any of the heavier than air fumigants should be employed. Heavier than air gases, such as chloropicrin, the ethylene dichloride-carbon tetrachloride mixture, or the carbon disulfide-carbon tetrachloride mixture, can be used.

Commercial formulations are readily obtainable. The fumigant should be applied evenly over the surface of the grain.

Although heavier than air **carbon disulfide must never be applied alone due to its explosive nature.** It may be mixed with other chemicals as carbon tetrachloride or sulphur dioxide to reduce its fire hazard.

In using fumigants the operator should realize that any gas toxic to insects is also toxic to man and that it is essential to take every precaution to avoid exposure to fumigants. Before attempting to fumigate, the operator should familiarize himself with the safe methods of applying it, and the precautions necessary for its safe application. In no case should anyone enter a bin that is being fumigated either to apply a fumigant or for any other purpose.

The recommended dosages and details regarding the applications for control of stored grain pests is given in Farmer's Bulletin 1880, Control of Insect Pests in Elevator Storage. Farmers Bulletin 1880 and Farmers Bulletin 1260 on Stored Grain Pests may be obtained from the Information Department, NDAC, Fargo, N. Dak.

BEE INSPECTION

It has been the duty of the North Dakota Experiment Station entomologist to supervise the inspection and eradication of bee disease for the State Department of Agriculture and Labor. The main effort has been directed towards finding American foulbrood in colonies before it has had time to become widespread and to eradicate it by the most effective means available.

The work has been conducted in 28 counties of North Dakota during the past year. A total of 10,464 hives were inspected and 119 were found to have American foulbrood. These were destroyed in an effort to prevent further spread. A detailed report on the work is presented in the Biennial Report of the State Department of Agriculture and Labor for 1946-1948. (J.A.M.)