

Cabbage Yellows

Cabbage yellows developed in 1947. This disease has occurred in other years although it was not reported before at the Experiment Station. Yellows is caused by the fungus *Fusarium conglutinans*. Plants affected with yellows lose their lower leaves and as the season develops the disease advances upward. In time practically all of the leaves deteriorate leaving a bare stem with a small clump of dead leaves at the very tip of the plant. The fungus is soil inhabiting and difficult to control. However, there are a number of resistant varieties which may be grown if the disease becomes troublesome. These include: Marion Market, Globe, All Head Select, and Jersey Queen. Very probably there are other varieties which possess considerable resistance to yellows. When resistant varieties are not grown cleaning up the litter and keeping the garden in a sanitary condition along with rotation to other grounds will help control yellows.

End-rot of Squash

Squash developed a new end-rot disease caused by the fungus *Mas-crosporium*. The fungus attacks the young squash at the blossom end. The young fruits are small and may decay in the late season. Control measures for this disease have not been worked out. Although it is believed that only a few of the varieties commonly grown in this region are susceptible. It has not been reported on Buttercup and some of the other favored varieties.

A Fungus on Strawberry

The strawberry has a number of diseases more or less destructive. This year a few specimens covered with the fungus *Spumaria alba* were sent in. The *Spumaria* fungus is not parasitic; that is, it does not derive its nourishment from the strawberry plant but uses the plant to support the fungus growth. It develops on the leaves and stems in a thick black mass covered with a whitish cap, and may smother the plants. The masses of fungus found on the leaves may be as much as one-half inch thick consisting largely of a mass of spores. No control measures have been developed for this fungus growth, although it seems probable that if the foliage of strawberry plants were kept covered and protected with a fungicide, such as Bordeaux Mixture, the *Spumaria* fungus would be repelled.

There is need for a constant look out for new diseases on cereals, fruits and vegetables. The appearance of new diseases such as these illustrates the ever changing problems with which growers of food crops must deal.

SPRAYING ALFALFA WITH DDT For CONTROL OF LYGUS BUGS

By

J. A. Munro, Agr. Entomologist

During the past summer Mr. James A. Flaa, Sargent County Extension Agent, requested suggestions on controlling injurious insects in an alfalfa field owned by Mr. W. B. Wyckoff, Havana, North Dakota. Lygus bugs were reported as the main pests endangering the developing seed crop. The plants were in bloom at the time.

Some concern was expressed about the danger of destroying the beneficial pollinating insects if an insecticide was applied. It was decided, however, that this danger might be avoided by making the application in the evening, after honeybees and other beneficial insects had left the field for the day. A spray consisting of 4 pounds of 50% DDT wettable powder to 100 gallons of water was recommended per acre.

It was suggested that a portion of the field remain untreated to serve as a check for comparison and that seed production records be taken in both areas.

Following the harvesting of the seed crop, Mr. Flaa reported as follows:

"Mr. Wyckoff sprayed 20 acres of alfalfa with the DDT as recommended and allowed 10 acres to remain untreated. The spray was not applied until after sundown to prevent injury to the pollinating insects.

"Mr. Wyckoff harvested 2800 pounds of clean alfalfa seed from the 20 acres which has been sprayed, but only 180 pounds of clean seed from the 10 acres which had not been sprayed."

This represents 140 pounds of alfalfa seed per acre from the treated area, as compared with 18 pounds per acre from the untreated area. This is clear cut evidence of the value of controlling injurious insects, and would indicate that application of the spray after sundown may have had no harmful effect on the pollinating insects.

INSPECTION AND REGULATION of HORTICULTURAL AND FOREST NURSERIES

By

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Inspection and Regulation of Nurseries: The service of certifying nurseries, while regulatory in function, enables the Experiment Station to keep in close touch with insect and disease problems particularly as affecting trees and shrubs and is a required service to the public and the nurserymen. The nursery inspection program is by law established in the N. Dakota Agricultural Experiment Station and the entomologist serves as the representative of the Director in carrying out the provisions of this law.

During the past year the department has inspected and certified a total of 37 nurseries, two of which are operated by the USDA at Mandan and one by the State School of Forestry at Bottineau. The remainder are privately owned nurseries.

In connection with this work in 1947 a state-wide survey was conducted to determine the situation with reference to elm diseases. This work was done in conjunction with the inspection of nurseries and other related travel by members of the department. The survey failed to reveal the presence of Dutch elm disease or Phloem necrosis;—two serious diseases of the elm especially in eastern states. The results of this survey are of particular value in certifying shipments of elm nursery stock to California, inasmuch as California has established a quarantine against all elm stock liable to carry either of these diseases. Recently this information was the basis for special certification on a shipment of 500 young elm trees grown in North Dakota and shipped to California.

Another recently established quarantine by California refers to the European corn borer. Inasmuch as this insect occurs in North Dakota and there is no intrastate quarantine on it, California regulations require shipments of ear corn to be subject to the heat treatment (168° F. for two hours) or fumigated with Methyl Bromide (2 pounds per 1000 cubic feet) for 6 hours at 70° F. or above. Other California quarantines which affect North Dakota shipments relate to Colorado potato beetle, greenhouse white fly and grape phylloxera. Shipments of nursery stock destined to Canada require an official inspection immediately prior to shipment and an official certificate to this effect.