

Plant Diseases New or Rarely Found in North Dakota

By

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Six plant diseases new or rarely found in North Dakota were reported in 1947. These diseases may have occurred to a very limited extent in other years without attracting attention of growers and no samples were sent to the Experiment Station for identification previous to 1947. These new diseases may now be listed as diseases of minor importance, but some of them may in a short time become very destructive if allowed to go unchecked. This may especially be true of the new blight of oats.

A New Blight of Oats

A new blight of oats, caused by the fungus *Helminthosporium victoriae*, and more recently named the *Victoria blight*, caused some damage in the southeastern part of North Dakota. This new root rot disease, appears somewhat unlike the common root rot which has been observed to some extent in this region for a number of years. Infected plants are characterized by discolorations of the basal portion of the stem followed by a striping and reddening of the lower leaves. In latter stages the lower portion of the stem becomes brownish and semitranslucent and the nodes blacken with spores of the fungus. When the fungus reaches this stage of development the plant is weakened and many of them break over near the ground.

This disease is called the *Victoria blight* disease because it seems to develop most freely on the varieties that originated from crosses on *Victoria*. These are Vicland, Tama, Boone, Control, Cedar, Vikota, Forvic, Osage, and Neomsho. Fortunately some of the new oat varieties developed from crosses on *Bond* possess considerable resistance to the *Victoria blight*. These are Clinton, Benton, Bonda, Mindo, and Eaton. A few other resistant crosses which are being increased are Mohawk, Bonham, Zephyr, Andrew, and Shelby. It now appears that oat growers in this state may be obliged to change varieties in the very near future, selecting some one of the new varieties listed above. In view of the fact that so many resistant varieties are now or soon will be available it seems probable that the *Victoria blight* may never be able to cause very much damage in North Dakota.

Root-rot of Sunflowers

Another new disease is appearing on a new crop, the Sunflower. Beginning this year a number of growers have planted sunflowers to be harvested as a grain crop. The industry is new to this region and also the root rot disease which is being found on it. However, the disease is not new in other regions that have been growing sunflowers for a number of years. This root rot is caused by the fungus *Sclerotinia sclerotiorum*. The fungus is a vigorous growing kind which attacked the roots and the lower portions of the stems. It is a soil inhabited fungus not transmitted by the seed. Resting masses of the fungus (*Sclerotia*) develop in the pith and subsist there throughout the winter. Like other root rot diseases this one is difficult to control. At present crop rotation is used as a means of holding its development in check.

Spotted Wilt of Tomatoes

Tomatoes developed a new and minor trouble in 1947, the spotted wilt disease, caused by a virus. Only one case of spotted wilt has been observed and no serious damage from this disease is anticipated in the near future. Spotted wilt develops peculiar circular lesions on the fruits. The circles or half circles are scarcely more than one-half inch in diameter and have green centers. The circles enlarge in time and connect up with other circles resulting in large decayed spots on the fruits. Plants infected with spotted wilt should be destroyed immediately to prevent the disease from spreading to other plants.

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

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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.