

BRONZE WILT SYMPTOMS
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Abstract

In 1995 bronze wilt appeared in a small number of fields in Missouri. In 1998 it appeared in many fields. In 1999 it was found only in rare instances. The predominant symptoms were bronze leaves, absence of squares, red stems, reduced plant size, rugose leaves, wilting and finally death. In 1999 the disease appeared later in the season. The predominant symptoms were red stems and leaves. Usually the plants had squares. It was very difficult to distinguish the symptoms from drought stress. Drought stressed plants were also stunted, had red stems and wilted. Spider mites also caused reddening of the leaves. These late appearing symptoms appear to have had little effect on the lint yield.

Introduction

In 1995 bronze wilt appeared in a small number of fields in Missouri and caused little economic damage. Bronze wilt was found in Louisiana in 1997. In 1998 many fields in Missouri and the Southeast had severe infestations of bronze wilt in mid-July. In 1999 it was found late in the season in Tennessee and only in a few fields in Missouri. Symptoms appear to vary considerably between years and locations. Damage late in the season has much less affect upon the yield than that incurred in July.

Description of Symptoms

An early symptom was a bronze tint on the fully expanded leaves in the upper part of the plant; however, this is not always present. The upper leaves sometimes had a rugose appearance, which is a raised rough appearance to the areas between the midribs of the leaf. Squares were totally absent and sometimes full size bolls would abort. Usually plants that do not have squares are taller than neighboring plants since there is no sink for the photosynthate produced and it is diverted to the stems. This is the case with insect damage. However, the bronze wilt plants are smaller than the neighboring plants. The stems were abnormally red. They resembled the stems of plants that had been sprayed with MSMA or DSMA. Death of some of the infected plants would occur in severely infested fields shortly after flowering. Wilting would occur but the stem would be white in the center unlike plants infested with verticillium wilt where a brown stem is found.

In 1999 symptoms were very different than in 1998. The symptoms appeared later in the season, in September instead of July. The diseased plants were severely wilted and had reddened leaves. However squares were present. The leaves were warm to the touch. Stems were red in color. It was difficult to distinguish between drought stressed plants and the bronze infested plants. Plants with spider mites had reddened leaves very similar to those with bronze wilt. Some infested plants had a darkened area just below the epidermis at the juncture of the branch and main stalk. It could be found by very carefully cutting away the bark to reveal the darkened layer.

Bronze leaves are not always a good indicator of the disease. Plants can have bronze leaves and a fortnight later; no symptoms of the disease are apparent.

References

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