

During December 1966 a relative root-knot index was taken in the entire field soon after cotton harvest. A trace to light nematode infection of only 3 degrees of galling was found.^{3/} There was no apparent reduction in yield of the 1966 cotton crop due to root-knot nematodes.

During December 1967, a relative root-knot index was taken on the second crop grown since crop rotation and fallowing. A moderate to heavy infection of 65 degrees of galling was found. The nematode population had built up rapidly during late summer and early fall when the cotton crop was near maturity, and only a light reduction in yield was apparent. This field will be planted again to barley and summer fallowed in 1968. If the field were again planted to cotton in 1968, heavy stand and yield reduction would be expected from the root-knot nematode.

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SOUTHWESTERN COTTON RUST

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Cotton rust occurred in damaging quantities in 1967 only in the southern part of Pima County and around Elfrida in Cochise County. A trace of rust was evident in most of the fields in the Safford area but little damage resulted.

After repeated testing in the greenhouse and in the field, a second fungicide has been cleared for use as a foliar spray in control of rust of cotton. It is a coordination product of zinc ion and manganese ethylene bisdithiocarbamate, and incorporates the better qualities of zineb and maneb fungicides.

In a search for tolerance or resistance to the rust fungus we have tested all of the species of Gossypium in greenhouse inoculation experiments. Several of the species showed a high level of tolerance, and from geneticists at various locations we obtained seed derived from interspecific crosses between tolerant species and G. hirsutum. Out of 2 of these interspecific backgrounds we have found occasional plants which are highly tolerant to rust. In cooperation with the Plant Breeding Department a program is underway to make use of this demonstrated tolerance to Southwestern cotton rust.

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^{3/} Percent galling converted to degrees: 0 = no infection, 1-25 = trace to light, 26-50 = light to moderate, 51-75 = moderate to heavy, and 76-100 = heavy to severe.