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REACTION OF WHEAT GENOTYPES TO INFECTION BY *ANGUINA TRITICI*

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Anguina tritici (Steinbuch, 1799) Filipjev, 1936 is an important parasite of wheat in some regions of the world including Iraq. The disease occurs in most Provinces of [redacted]

over each seed line. Inoculated lines were covered with soil to a height of 3 cm and watered with 250 ml of tap water. This method of inoculation produced the highest [redacted]

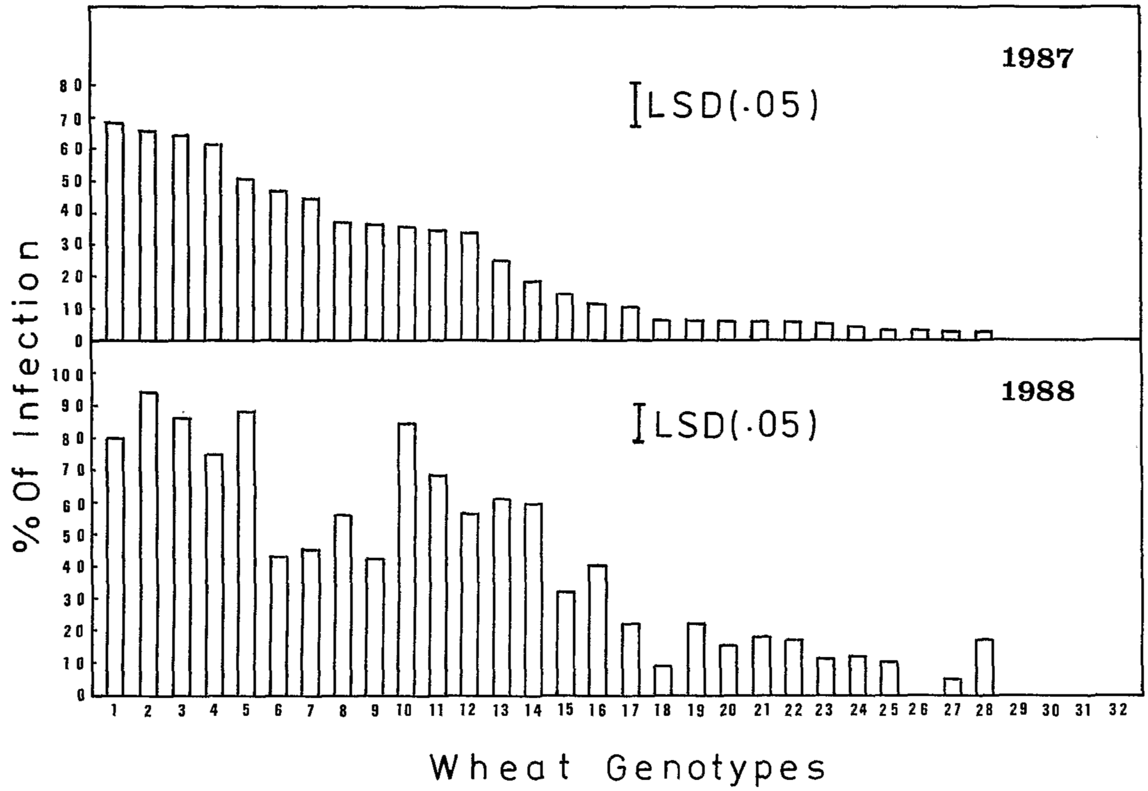

Fig. 1. Incidence of ear-cockle disease (% of infected plants) on 32 genotypes of wheat caused by inoculation whith second stage juveniles of *Anguina tritici* extracted from 0.1 g of seed galls. See Table 1 for explanation of genotypes names.

An interesting result of this work is that four genotypes, 342, 346, 347 and 352 (see Tab. 1) were highly resistant to infection by the nematode in two successive planting seasons (Fig. 1). These genotypes are hybrids (Saberbeg × Mexipak) irradiated with 400 r Nf at their F2 generation. A combination of mutagenesis treatments with hybridization is very effective for the induction of useful mutations (Savov, 1969; 1973). Furthermore, irradiation of hybrids at their earlier generation is among the most recommended methods to induce mutations (Konzak, 1956; Borojovic, 1979). However, gamma irradiation (13 000 r) render an originally highly resistant cultivar (Saberbeg) susceptible to *A. tritici* (Tab. 1, Fig. 1).

Variants with index no. 18-28 (see Tab. 1) showed an infection percentage below 10 % in 1987 test (Fig. 1). Furthermore, most of the genotypes tested showed similar reaction to infection by *A. tritici* in 1987 and 1988 tests. However, some of the test genotypes showed different reaction to infection. This is possibly due to their genetic unstability and/or environmental differences in the test seasons. It is worthy to note that a reduced percentage of infected plants was observed in 1987 experiment compared to 1988. This could be due to the relatively delayed sowing time and/or extreme weather conditions of 1987.

The variants resulted from Nf treatments which showed no nematode infection, want further screening and selection studies so that an *A. tritici* resistant cultivar can be developed.

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PHOTOSYNTHETIC RATE IN RICE AS INFLUENCED BY THE ROOT-KNOT NEMATODE, *MELOIDOGYNE GRAMINICOLA*, INFECTION

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The root-knot nematode, *Meloidogyne graminicola* Golden & Birchfield, 1968 is associated with loss in grain yields in rice and widely distributed in India (Prasad, Panwar & Rao, 1987). The symptoms of root damage by the nematode results in stunted and chlorotic plants (Rao, 1985). Reduction in chlorophyll a and b fractions (20 to 39.5 %) has been reported due to infection by this nematode (Rao, Jayaprakash & Mohanty, 1988; Swain & Prasad, 1988). In contrast a resistant variety, Udaya demonstrated a 43.5 and 24.3 % increase in a and b fractions of chlorophyll, respectively (Swain & Prasad, 1988). Reduction in photosynthetic rates of tomato and bean leaves due to root-knot nematode infection has

The temperature of the photosynthetic chamber was 30°. The photosynthetic rate per unit leaf area of infected and non-infected plants was compared. The % reduction in photosynthetic rate in each rice variety was calculated basing on the means of fifteen replications of infected and non-infected treatments.