Rice/Red Rice Interference Studies

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Replacement series experiments at four stand densities were conducted during the growing seasons of 1985, 1986 and 1987. At each stand density there were two mixtures and pure stands of Mars and red rice. Observations were made on a fixed number of plants from the center of each plot. Measurements on both types of plants included the number of panicles per plant, the number of florets per panicle, the portion of the florets that were filled, and the average weight of the filled florets. Since some plants failed to produce panicles the portion of plants that were reproductive was determined. Yields were calculated from these yield components.

Increasing the stand density of Mars from 50 to 400 plants m^2 resulted in a decrease in the number of panicles per plant and a decrease in the number of florets per panicle, but there was no significant effect on the portion of florets that filled nor the filled floret weight.

Increasing the stand density of red rice from 50 to 400 plant m^2 resulted in a decrease in the number of panicles per plant with some plants failing to produce panicles at the higher stand densities in two years and a decrease in the number of florets per panicle in two years, but there was no significant effect on the portion of florets that filled nor the filled floret weight.

In the case of Mars, increasing the percentage of red rice in the stand resulted in a decrease in the number of panicles per plant and, in some cases, a reduction of the portion of plants that produced panicles. There was also a reduction in the number of florets per panicle, but there was no significant effect on either the portion of florets that filled or the filled floret weight.

In the case of red rice, increasing the percentage of red rice in the stand resulted in a decrease in the number of panicles per plant and, in some cases, a reduction of the portion of plants that produced panicles. There was little or no effect on florets per panicle, portion of filled florets, or filled floret weight.

In all three years, the yield of Mars in mixtures was lower than would be expected if Mars and red rice were equal in ability to capture and utilize resources, whereas red rice yields were higher than would be expected. On the other hand, the yield of red rice in mixtures was higher than would be expected. In some cases, the yield of red rice in the mixtures was higher than red rice in pure stands, indicating that red rice competes with itself more than Mars competes with red rice.

Red rice's aggressive nature makes it one of the most competitive weeds in Louisiana rice fields. Higher seeding rates, with clean seed and cultural practices that assure a good stand will lead to a lower portion of the stand being red rice and a minimizing of the effects of the red rice on yield and quality.