

## **Critical period competition between *Fimbristylis miliacea* (L.) Vahl and rice (MR 220)**

### **ABSTRACT**

The establishment of the critical period of specific crop-weed interference is an important step in the development of effective and sustainable integrated weed management approach. *Fimbristylis miliacea* was allowed to compete with rice at different growth periods after rice emergence before removal by hand. In order to evaluate the onset of the critical period of weed removal, plots were left weedy for 14, 28, 42, 56 and 70 days after sowing, after which the weeds were removed and the pots maintained weed-free until harvest. To determine the end of the critical period, another set of pots were kept weed-free for 14, 28, 42, 56 and 70 days after sowing and subsequently weeds were allowed to grow until harvest. Full term weedy and weed-free treatments were included as controls for comparison. Grain yield reduction caused by increasing durations of *F. miliacea* competition was accompanied by high weed dry matter which simultaneously reduced rice straw biomass and number of productive tillers. Based on the predicted Logistic and Gompertz response curves, the critical period for controlling *F. miliacea* in direct-seeded rice was between 14-28 days after sowing.

**Keyword:** Critical period; *Fimbristylis miliacea*; Rice