

Critical period for weedy rice control in direct-seeded rice

ABSTRACT

On-station trials were conducted in MARDI Seberang Perai in main season 2004/05 and off-season 2005 to determine the critical period of weedy rice control in direct-seeded rice. This period generally consisted of two discrete periods, a critical weed free period and a critical time of weed removal. The Gompertz and Logistic equations were fitted to data representing increasing durations of weed control and weed interference, respectively. In the main season 2004/05, only weedy rice was allowed to grow in association with direct-seeded rice. Other weeds were controlled with selective herbicide applications. In the off- season 2005, mixed weeds including weedy rice were let to grow in association with direct-seeded crop. A period of weedy rice control lasting up to 53 DAS prevented a yield loss of more than 5% in main season 2004/05. However, weedy rice competition could cause 5% yield loss if it allowed to compete with direct-seeded crop until 16 DAS. Therefore, the critical period for weedy rice control was from 16 to 53 DAS. In off-season 2005, to prevent a yield loss of more than 5%, a period of weed free lasting 60 DAS is required and weed competition could cause 5% yield loss if it allowed to compete with directseeded crop until 12 DAS. It indicates critical period for weed control under mixed weed infestation from 12 to 60 DAS under 5% yield loss.

Keyword: Critical period; Direct-seeded rice; Gompertz and Logistic equations