

## **A comparative study of vegetative and reproductive growth of local weedy and Clearfield® rice varieties in Malaysia**

### **ABSTRACT**

The movement from transplanting to direct seeding has brought weedy rice problems in Malaysia's rice granary areas. Weedy rice (*Oryza* spp.) is very difficult to control compared to other weeds due its close genetic relationship to the cultivated rice (*Oryza sativa* L.), therefore it cannot be controlled with conventional rice herbicides. Recently, a new technology for controlling weedy rice in rice fields which is known as Clearfield® Production System has been introduced by discovering the combination of herbicide imidazolinone and resistant trait containing variety. Two cultivars have been released by Malaysia known as MR 220CL1 and MR 220CL2 which were derived from crosses between CL1770 from Louisiana State University with a Malaysian local rice variety, MR 220. The objective of the study is to understand the growth patterns (vegetative and reproductive) of four different weedy rice morphotypes and two variants of Clearfield® rice in Malaysia. Weedy morphotypes were observed being significantly taller in all growth stages compared to Clearfield®. Tillering abilities of weedy morphotypes were not different from Clearfield® variants except for WR4 at 60 days after seeding (DAS). Flowering and maturity periods observed in weedy morphotypes were ranged widely where all weedy morphotypes flowered 10 to 20 days later than the Clearfield® rice varieties. Understanding all these morphological and physiological characteristics of weedy rice is useful to improve the weedy rice management and good agricultural practices for better control of escaped weedy rice in the Clearfield® planting areas.

**Keyword:** *Oryza sativa* L.; *Oryza* spp.; Imidazolinone; MR 220CL1; MR 220CL