# Effect of water regimes on germination of weed seeds in a Malaysian rice field.

ABSTRACT

The effect of different water regime treatments on the viability of weed seeds in direct-seeded rice field was evaluated. Five water regime treatments were used namely, continuous flooding condition until maturity, early flooding until 55 DAS (day after sowing) followed by saturated condition until maturity, early flooding until 30 DAS followed by saturated condition until maturity, continuous saturated condition until maturity, and continuous field capacity condition throughout the experimental period. Total weed seed population in soil sampled from March-May. The results showed that weed population dominated by broadleaved weeds (90625 seeds m-2), mainly Hedyotis corymbosa, Monochoria vaginalis and Ludwigia hyssopifolia, followed by sedges (34257 seeds m-2), mostly F. miliacea and Cyperus iria. The grasses, predominantly Leptochloa chinensis, recorded the lowest number in all water regime treatments (20647 seeds m-2). In soils sampled from September-November, sedges (53041 seeds m-2) mainly Fimbristylis miliacea along with broadleaved weeds (54624 seeds m-2), predominantly Monochoria vaginalis and Ceratopteris pteridoides, dominated in most of the water regime treatments, while grasses, mainly Leptochloa chinensis and Panicum repens, recorded the lowest number (24935 seeds m-2). Ten weed species, which were not observed in the field trials, were recorded from the same soils used in the weed seedbank study. The results showed that differences in water regime treatments did not significantly reduce the viability of weed seeds in the soil. However, a small reduction in seed viability (approximately 8%) was observed in soil samples during the September-November period.

**Keyword:** Weed seedbank; Water regimes; Seeds viability.