

Bio-efficacy of New Herbicide Molecules in Wet Seeded Rice Culture in Sri Lanka

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Abstract

A multi locational field experiment was conducted by adopting randomized complete block design with 03 replicates during maha 2018/2019 at 09 locations to evaluate the bio-efficacy of 12 new herbicide molecules which are selective and broad spectrum in wet seeded rice culture. Plot size was 18 m². Bg 360 rice variety was used as the test variety. Plots were separated by using a 30cm bund where there was a separate inlet and separate outlet maintained for each plot. Herbicides were applied using a 16L Knapsack sprayer with flat pan nozzle. At 6 weeks after sowing, using a 36×36cm quadrat, weed samples were collected at 3 different places of each plot. Dry weights of the samples were measured after categorizing into grasses, sedges and broadleaves. Visual phyto-toxicity was recorded at 07 days and 14 days after treatment and final grain yield was also measured. Weed controlling efficacy (WCE) for each treatment was calculated. All data were analyzed by using SAS statistical software. The herbicides; Penoxulam 10% + Cyhalopop butyle 50% OD at the rate of 1.5-2 L/ha within 7-15DAS, Triafamone 100 g/L + Tefuryltrione 200g /L SC at the rate of 250-300mL/ha within 7-12 DAS, Oxaziclomafone 1.2% + Tefuryltrione 6% SC at the rate of 500mL/ha within 3-6 DAS, and Pretilachlor 36% + Bensulfuron methyl 4% WP at the rate of 1200g/ha within 5-8 DAS were showed more than 80% of WCE values and no phyto-toxicity effect after 15days after treatment were recommended to be further tested in pilot scale experiments at the rates tested.

Keywords: Bio-efficacy, Broad spectrum, Herbicide molecules, Wet seeded rice culture

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