## B-03 Competitive nature of weeds and their effect on growth and yield of dry sown irrigated rice

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Weed infestation in rice significantly reduces the yield potential and quality of the crop. In Sri Lanka, 20% of the average grain loss is caused by weeds and is estimated as Rs.4,000 million / annum. A field experiment was conducted to study the growth and dry matter production of different types of weeds and their competitive effect at different growth stages on growth and yield of dry sown irrigated rice of the variety BG 500, a new plant type of 4 months age

group. Treatments with weed infestation period up to the 1st, 2nd, 3rd and 4th month and weed free period up to the 1st, 2nd, 3rd, and 4th month were included. A total of 663 weeds / $m^2$ was observed at the end of the first month. This increased b 5.9% during the second month and thereafter no increase was noted. Dry matter production of weeds increased by 316%, 72% and 20% at the end of the second, third and fourth months respectively, at the end of the second month 229 grass weeds, 324 sedges and 152 broad leaf weeds/$m^2$ were recorded. However the total dry matter production of grass weeds was found to be twice as much as the sedges and 5 times more than broad leaf weeds. When weeds were controlled up to the end of the first month, weed germination and their dry matter production were reduced thereafter by 51% and 72% respectively.

Regrowth of weeds after an initial weed control period of 2 months was very insignificant and did not reduce yield or an yield components. Weed competition up to the first 2 months significantly reduced the plant height, tiller number and leaf area index. Further, it also reduced the yield components such as panicle number/$m^2$, spikelet number and filled spikelet percentage. No reduction in yield or yield components was noticed when the weeds were controlled during the first 2 months. Weed competition up to the 1st, 2nd, 3rd, and 4th month reduced the grain yield by 9%, 16%, 32%, and 36% respectively. This reveals that the weed control up to 2 months is essential to obtain potential yield under dry sowing condition with new improved varieties.