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Effect of *Croton lacciferus* (Keppettiya) residues on germination and growth of selected paddy and paddy field weeds.

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Mulching has been practiced in our traditional rice cultivation from ancient times. *Croton lacciferus* (Keppettiya) (family Euphorbiaceae) is one such plant used for this purpose. The objectives of this work were to quantify the effect of *Croton lacciferus* leaf residues on germination and vegetative growth of selected rice field weed species and to determine the effect on popular rice variety BG 350. Mature leaves of *Croton lacciferus* were air dried and ground. Paddy field soil was used as the growing medium for weeds, *Echinochloa crus-galli* (Poaceae), *Ischaemum rugosum* (Poaceae), *Eclipta prostrata* (Asteraceae) and *Commelina diffusa* (Commelinaceae) and rice variety BG 350.

For the germination experiment twenty (20) plastic plates filled with growing medium were used for each weed species. From this, 10g of *C. lacciferus* residue (providing 2% w/w concentration) was added as a top layer to 10 plates. The other 10 plates were without *C. lacciferus*. These were allowed to decompose for 3 weeks. 500 seeds from each weed species and rice were soaked in water for 24 hours separately and were introduced to each pair of plates. Treatments were replicated 10 times. Germination of seeds was monitored every other day for 2 weeks. Final germination percentage, Mean germination time and the uniformity of germination were calculated. The comparison between treatment and the control was conducted using the two-sample t-test.

The growth experiment was carried out using 20 pots allocated for each species. Of this for 10 pots, 30g of *C. lacciferus* residues providing 2% (w/w) strength was added as a top layer on soil and allowed to decompose for 3 weeks. Another 10 pots without *C. lacciferus* served as the control. Two-week old weed seedlings raised from seeds from each weed species, rice and *Commelina diffusa* nodal pieces were introduced to pots and growth of plants was monitored weekly for 10 weeks. The growth parameters measured were the height, number of leaves, number of tillers (for monocotyledon species), number of branches, total length of branches. Dry weights of all the plants were obtained after 10 weeks. The results were statistically analyzed by two-sample t-test to compare the treatment and the control.

Rice variety BG 350 showed a significant reduction in final germination percentage and the Mean Germination Time of *Echinochloa crus-galli* was effectively delayed by the addition of *C. lacciferus* residues. The uniformity of