EVALUATION OF ALLELOPATHIC POTENTIAL OF MIKANIA (*Mikania micrantha*) ON WEED GROWTH

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Extended Summary

A study was undertaken using the funds of SAURES to evaluate the allelopathic effect of mikania on different weeds both in kharif and rabi season. Soil from wheat field in Kharif season, whereas that from the T. aman rice field was collected after the harvest of wheat and rice, respectively. Mikania application at 0,2,4,6,8 and 10% by sundry weight of soil was tried using earthen pots. Fresh chopped mikania was mixed with the 5 cm top soil of the pot and field capacity was set and the weed seeds retained in the soil were allowed to germinate and grow. At different growth stages, data on plant number and dry weights of each species of weeds were taken. Weed species, number and dry weights of all the species varied depending on the growing seasons. Both number and dry matter of all types of weeds increased up to 60 DAS and afterwards those decreased in kharif season, whereas the number and dry matter increased up to the last sampling (130 DAS). The growth was vigorous in kharif season compared to that in rabi season. In kharif season, nutsedge, joina and papri dominated whereas in rabi season anguli was dominating. In kharif season, treatments had significant effect on number and dry matter of above ground, root and total dry matter weight of untsedges, joina and papri. In most of the case, the untreated treatment had the highest number and the lowest dry weight, whereas the 10% mikania application treatment had the lowest number and highest dry weights. Treatments had also significant effect on plant number and dry weights of panilong, graminaceous weeds, diocot weeds. But the effect was not consistent. In robi season, a few weeds were seen to grow compared to those of kharif season. Nutsedges, anguli and chapra dominated in the rabi season. In rabi season, in contrast to the kharif season, the treatments did not have significant effect on individual weeds, but had effects on total number of weeds and weed weights showing increased values with increasing mikania concentrations up to 10%. Both in kharif and rabi seasons, in most of the cases mikania application from 4% to 10% rate did not show significant differences. So, 4% mikania application could be applied to control

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nutsedge, joina, papri in kharif season, whereas anguli in rabi season.

However, allelopathic effect was seemed to exert effect during germination of weed seeds and probably after the incorporated mikania benefited weed plants probably providing more nutrients to the weed plants after having been decomposed leading to vigorous growth of the remaining weed plants. In this situation, although number of weed plants could be reduced by incorporating mikania into soil, the absence of any crop plants i.e. lack of completion created environment congenial to vigorous weed growth. In the rabi season, however, the effect was obscure, probably during the germination of the weed seeds, there occurred drought which leaded to the degeneration of allelopathic effect of the incorporated mikania.