

Patterns of resistance to AHAS inhibitors in *Limnocharis flava* from Malaysia

ABSTRACT

Limnocharis flava (L.) Buchenau is among the most problematic rice weeds in Malaysia and is also reported to have developed multiple resistance to AHAS inhibitor bensulfuron-methyl and synthetic auxin 2,4-D. In this study, resistance across different AHAS inhibitors was characterised in a *L. flava* population infesting rice fields in Pulau Pinang, Malaysia. Dose-response experiments were conducted to determine the level of resistance to sulfonylureas, imidazolinone, triazolopyrimidine, and pyrimidinyl-thiobenzoate. Cross-resistance across different AHAS inhibitors was observed in the resistant *L. flava* population, exhibiting a high level of resistance to bensulfuron-methyl, while exhibiting a moderate level of resistance to metsulfuron-methyl and a low level of resistance to pyrazosulfuron-ethyl and pyribenzoxim. However, all resistant *L. flava* individuals were still sensitive to imazethapyr, penoxsulam and bispyribac-sodium. Based on the results, it is likely that resistance to AHAS inhibitors in *L. flava* is conferred by target-site resistance mechanisms.

Keyword: Acetohydroxyacid synthase; Herbicide resistance; Perennial weed; Rice; Sawah flowering rush.