

## **Geographical distribution of ALS inhibitor resistant paddy weeds in Gyeonggi and Gangwon provinces of Korea**

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### **[Introduction]**

ALS (acetolactate synthase) inhibitor resistant paddy weeds have caused many issues for weed management in Korean rice fields. The continuous use and heavy reliance on ALS inhibitors for paddy weed management has eventually made many paddy weed species more resistant to these herbicides. Gyeonggi and Gangwon provinces are located in the northern part of Korea and accounts for 16.7 % of rice cultivation area in Korea. It is assumed that herbicide resistance in paddy weeds may be continuously increasing and wide-spreading in rice growing area. Therefore, this study was conducted to investigate geographical distribution of ALS inhibitor resistant paddy weeds in the Gyeonggi and Gangwon provinces using paddy soil test.

### **[Materials and Methods]**

We collected paddy soil samples from 397 sites in paddy fields in Gyeonggi and Gangwon provinces in March and April. Soil samples were stored in a cold chamber maintained at 4°C until soil test. Soil test was conducted in plastic pots. Puddled soil placed in plastic pot was flooded with water and kept in a plastic house for 15 days after puddling to allow weeds to establish up to 3 leaf stage (for *Echinochloa* species), and treated with imazosulfuron + pyriminobac-methyl mixture at its recommended dose rate.

### **[Results and Discussions]**

As a results, we found ALS inhibitor resistant weeds including *Echinochloa* species, *Monochoria vaginalis*, *Lidernia* species, *Scirpus juncooides*, and *Cyperus difformis*. Based on this assay, we could visualize geographical distribution of ALS inhibitor resistant paddy weeds in the two northern provinces, Gyeonggi and Gangwon provinces, of Korea.

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