Weed Management

Herbicide Resistance

Herbicides
- There is a wide range of herbicides available.
- 228 brands marketed by 58 companies in the Philippines
- 110 brands are used for rice
- Continuous use of the same herbicide in the same piece of land kills the susceptible weed species but allow tolerant ones to proliferate (weed shifts).
- Depending on the type of herbicides used (grass, sedge or broadleaved herbicides) uncontrolled weeds dominates in the later seasons.

**Herbicide resistance** is the inherited ability of a weed to survive herbicide application to which the general population is susceptible. One of the greatest threats in rice production is the development of herbicide resistance in weeds.

In the Philippines, *Echinochloa crus-galli* was found resistant to butachlor, propanil and cross resistance to pretilachlor. Populations of these resistant weeds species were found in Iloilo and Nueva Ecija (Casimero et al. 2005)

**Cross resistance**- A weed that has gained resistance to more than 1 herbicide with the same mode of action. Same or different families.

**Multiple resistance**- A weed that has developed tolerance to more than one herbicide brought about by different selection pressures.
Prevention and management of herbicide resistance

1. Use of herbicide when only necessary
2. Focus on reducing the selection pressure as a management practice
3. Rotation of herbicides with different mode of action
4. Rotate crops
5. Use of herbicide mixtures
6. Use of herbicides with short residual life
7. Use cultural measures
8. Control of weed escapes
9. Sanitation of equipment to prevent spread of resistant weeds
10. Scout the field for resistant weeds
11. Adopt integrated weed control practices
12. Adopt crop rotation

Herbicides to watch out for herbicide resistance

✓ Cyhalofop butyl – Clincher
✓ Bipyribac sodium – Nominee
✓ Bensulfuron methyl - Londax and combinations
✓ Metsulfuron + Chlorimuron – Almix
✓ Pyribenzoxim - Pyanchor
✓ Penoxulam – Rainbow and combinations, (Topshot)
✓ Fenoxaprop ethyl – Ricestar and combinations
✓ Fluazifop butyl - Oneide
✓ Cyclosulfamuron – Invest
✓ Ethoxysulfuron – Sunrice
✓ Glyphosate – 57 brands

Source:

Prostko EP and Culpepper AS. Extension Weed Specialists. The University of Georgia.