

## Risk assessment for off-site migration of pesticides in the ORIA

Rai Kookana of CSIRO carried out a risk assessment for commonly used pesticides in the ORIA. For this he used the Pesticide Impact Rating Index (PIRI). PIRI is a tool that integrates a number of factors into account to assess the impact of a given pesticide under the local conditions. The current assessment was carried out for four land uses, namely, sugarcane, hybrid seeds, melons and fruits. The following factors were considered in this assessment.

1. Pesticide use rates (application rates, frequency of application) – Thanks to Dick Pasfield and Lou Cook.
2. Their toxicity to fish and waterflea.
3. Pesticide properties (persistence, sorption)
4. Soil conditions (texture, organic matter content etc.).
5. Water input (rainfall and irrigation).
6. Others (e.g. topography, buffer zones, etc.).

The results from the assessment for off-site migration potential (low, medium, high) for the 4 landuses is given in the following table.

Landuse	Higher risk	Moderate Risk	Low risk
<b>Sugarcane</b>	Atrazine, Ametryn Diuron Isoxaflutole	Chlorpyrifos 2,4-D	Fluroxypyr Glyphosate
<b>Hybrid seeds (sorghum, maize, sunflower)</b>	Atrazine Thiodicarb Pendimethalin Endosulfan	Chlorpyrifos, Cypermethrin,	Trifluralin Glyphosate
<b>Melons (rockmelons, watermelons, pumpkins)</b>	Endosulfan Trichlorfon Chlorpyrifos Mancozeb Cypermethrin	Fenarimol Carbaryl Chlorothalonil Bupirimate	Imidacloprid
<b>Fruits (bananas, mangoes, citrus)</b>	Mancozeb Chlorpyrifos	Propiconazole	Glyphosate

To test the validity of the above assessment, samples of tail-waters will be tested over next six months for various pesticides. Duncan Palmer has already collected samples from sugarcane land use, which is current being analyzed in CSIRO laboratories in Adelaide.

Rai Kookana