We lack experience of clear environmental harm from current GM plants. Therefore risk assessment of GM plants relies on postulating harms that can be realistically and causally linked to the novel trait. This requires consideration of three questions. 1) What is environmental harm? 2) What are measures of harm? 3) What are the criteria for degrees of harm?

Environmental harm is derived from protection goals that underpin most legislation. Those protection goals relate to values and policies, rather than scientific facts. For example, harm to organisms or biodiversity in a risk assessment usually distinguish between desirable species (eg rare and endangered species) from undesirable species (eg the cotton bollworm), which are designated as pests, weeds or pathogens. In addition, the type of receiving environment can affect those values. In Australia, increased soil nitrogen availability is often considered beneficial in agriculture, but not in natural areas where native plants have adapted to historically low nitrogen levels.

Often environmental harm is not sufficiently described in legislation for use in risk assessment and must be derived from other sources. The Australian approach is to derive these values from international and national standards and guidance. In particular, advanced weed risk assessment methodology, which has been adopted by FAO, provides an explicit set of generic criteria for defining environmental harm from plants. In addition, the extensive use of this methodology on non-GM plants provides guidance on a variety of measurement endpoints that can be used to assess the type and importance of potential harm from GM plants.

This presentation will describe how weed risk assessment methodology has been adapted for defining and assessing potential environmental harm from GM plants in Australia.

Keywords: environmental harm, weed risk assessment, regulation