New Herbicides and Plant Growth Regulators Announced at the Brighton Conference

The most recent British Crop Protection Council annual conference, commonly known as the Brighton Conference, was held November 12-15, 2001. The emphasis this year was on new crop protection products that will be brought to market. While performance in Europe is emphasized, plans for marketing crop protection products in North America are often discussed. Following are the herbicides and plant growth regulators that were announced this year.

**Azopirillum brasilense.** A representative from Eco Soil Systems, Inc., San Diego, CA, reported on the results of a series of field trials in southern California in which an application of *Azopirillum brasilense* was found to increase root mass of creeping bentgrass (*Agrostis palustris*), perennial ryegrass (*Lolium perenne*), and tall fescue (*Festuca arundinacea*). Treatments included a microbial stimulant, Lex, also from Eco Soil Systems, Inc. The presentation did not include any details about plans to take commercial advantage of this information.

**Pethoxamid.** Tokuyama Corporation, Japan, introduced pethoxamid for grass and broadleaf weed control in corn and soybeans. The presenter emphasized that the compound is in the acetamide chemical family, not the acetanilide chemical family. It appears to inhibit the biosynthesis of fatty acids. The data and information presented came from work conducted in Europe; no mention was made of work conducted in North America. Pethoxamid can be applied PRE or early POST in corn, and PRE only in soybeans at rates of 1.2 kg ai/ha (1.0 lb ai/A). Grass weeds controlled include barnyardgrass (*Echinochloa crus-galli*), large crabgrass (*Digitaria sanguinalis*), and a foxtail species (*Setaria viridis*). While, broadleaf weeds controlled include redroot pigweed (*Amaranthus retroflexus*), common lambsquarters (*Chenopodium album*), *Elytrigia repens*), and smartweed species (*Polygonum spp.*). Applied alone, foramsulfuron is used at 30 to 60 g ai/ha (0.03 to 0.04 lb ai/A) and the rate of iodosulfuron-methyl-sodium will be 1 to 2 g ai/ha (0.0009 to 0.0018 lb ai/A). Applied alone or as a premix, the foramsulfuron formulation will also include the safener isoxadifen-ethyl, at a ratio of 1:1. Isoxadifen-ethyl reduces the level of parent foramsulfuron that is translocated in corn. Crops sensitive to foramsulfuron plus isoxadifen-ethyl plus iodosulfuron-sodium methyl-include potatoes, cereals, oilseed rape, sugar beets, sunflower, soybean, cucumber, and tomato. The presenter reported that many crops can be safely planted into treated soil three months after application; however, a list of crops evaluated was not provided.

**Mesosulfuron-methyl.** Mesosulfuron-methyl (trade name Mesomaxx) will be marketed by Aventis CropScience for POST control of grass and some broadleaf weeds in wheat (winter, spring, and durum), triticale, and rye. It inhibits acetolactase synthase. It will be packaged with a safener, mefenapyr-methyl, which increases metabolism of mesosulfuron-methyl in tolerant plants. Even with the safener, barley (winter and spring) tolerance has not been consistently acceptable. Use rates of mesosulfuron-methyl will be 15 g ai/ha (0.013 lb ai/A), with the safener at 45 g ai/ha (0.040 lb ai/A). The safener does not appear to have an adverse effect on susceptible weed species. Species controlled include grass weed species important in small grain production in Europe such as blackgrass (*Alopecurus myosuroides*), windgrass (*Apera spica-venti*), ryegrass species (*Lolium spp.*), *Phalaris spp.*, and bluegrass species (*Poa spp.*). Broadleaf weeds controlled include those in the *Brassica* family such as volunteer oilseed rape. Crops evaluated for rotational safety included sugar beet (12-13 months), and peas and field beans (12-14 months). Other crops safety planted 12-14 months after application includes artichoke, corn (maize), potatoes, soybeans, sunflowers, and tomatoes. The authors did not indicate if any of these crops had been evaluated for crop safety at shorter intervals.