In accordance with the Pest Control Products Act, pesticides must be demonstrated to be safe, effective, and to have a benefit or value prior to acceptance for registration for sale and use in Canada. Pest control products that are subject to registration include herbicides, PGR's, adjutants, insecticides, fungicides and anti-microbials. PMRA conducts a review of scientific data submitted in support of the proposed use claims and includes an assessment of the efficacy, crop tolerance, impact on rotational crops, resistance management strategy, and contribution to sustainability. Value assessment includes a determination of the lowest effective rate (LER) in terms of level, duration and consistency of control across a broad range of conditions. This avoids excessive dosages that may increase pesticide residues in food and result in increased exposure to applicators, bystanders, and the environment. LER provides a baseline for effective risk assessment and risk management decisions. LER also contributes to sustainable pest management objectives and mitigation of resistance development. A key initiative of PMRA regarding resistance management is the implementation of resistance management labelling which requires the addition of Mode of Action Groups and resistance management statements on the labels of commercial pesticides for agricultural uses. PMRA encourages submission of applications for reduced risk products under the reduced risk strategy. Recently Chondrostereum purpureum was registered for the inhibition of sprouting and regrowth of hardwood species in rights-of-way and forestry sites. Harmonizing efficacy data requirements with international regulatory organizations, such as EFSA, remains an ongoing objective.

FEDERAL NOXIOUS WEEDS: POTENTIAL PATHWAYS INTO THE UNITED STATES

In a typical year, agricultural inspectors and botany identifiers within the Animal and Plant Health Inspection Service (APHIS) and the Department of Homeland Security intercept and identify about 3,500 Federal noxious weeds. In the five years prior to April 2003, the most frequently intercepted Federal noxious weeds were onionweed (Aethopselus fistulosus), itchgrass (Rottboellia cochinichnensis), red rice (Oryza spp.), swamp morningglory (Ipomoea aquatica), giant hogweed (Heracleum mantegazzianum), turkeyberry (Solatum torvum), and dodder (Cuscuta spp.). Agricultural inspectors at the border find these Federal noxious weeds and others in various pathways, including passenger baggage, bird seed, human foodstuffs, plant and seed shipments for consumption and propagation, herbal medicine and dried flowers. Itchgrass seeds often hitchhike on railroad cars from Mexico; animated oaks (Avena sterilis) hitchhike with stones, tiles, and sheepskins from Europe and the Middle East. Cargo and conveyances containing Federal noxious weeds are returned to the country of origin, treated, or destroyed. Inspectors seize and destroy regulated plant material in passenger baggage.

SEED PRODUCTION POTENTIAL OF PREDOMINANT WEED SPECIES IN LOWLAND AND IRRIGATED UPLAND ECOSYSTEMS

Seed production potential of predominant weed populations needs to be taken into account when estimating the long-term impact of any crop management practices. Prediction of weed seed production under field conditions is essential to the successful adoption of crop management practices, which will give the idea about subsequent weed infestations ensuing from a well-stocked seed bank. Twenty-five plants in each weed species were selected randomly from the cropped fields of low land and irrigated upland condition and the number of seeds produced per plant and weed seed rain were calculated based on the no. of fruits and seeds per plant and number of plants per square meter. In low land ecosystem, between the two predominant grassy weeds, higher seed production potential was observed with Echinocloa colon (3,530 seeds / plant). But, Echinocloa crus-galli contributed for higher weed seed rain of 92,254 seeds / m². Among the two predominant broad leaved weeds, Ammania baccifera had higher seed production potential as well as weed seed rain recording 2,670 seeds / plant and 33,110 seeds/m². In upland irrigated condition, Triandema portulacastrum was the dominant weed closely followed by Parthenium hysterophorus. However the seed production potential was higher with Parthenium hysterophorus (10,130 seeds / plant). The higher seed production potential of Parthenium hysterophorus contributed for the highest weed seed rain of 2, 43,125 seeds / m².