The use of a biodegradable and a phenylpropanoid pathway inhibitor for combined control of water hyacinth. Shabani, Y.M. 1,* and Mohamed, Z.A. 1.* Plant Pathol. Dept., Agriculture, El-Manoura, Dakahlia, Egypt. The fungus Alternaria alternata isolate 5 (Ae5) is being developed as an effective mycoherbicidal against water hyacinth in Egypt. To improve its virulence, integration with 3, 4-methylenedioxytrans-cinnamic acid (MDCA), a phenylpropanoid pathway inhibitor which weakens the plants defense system, was explored. The severity of the disease induced by Ae5 increased when it was applied to water hyacinth plants pretreated with MDCA. Infection with Ae5 amplified the total phenol concentration in diseased water hyacinth leaves whereas MDCA reduced it. Plants treated with both Ae5 and MDCA contained a comparable level of total phenols to that in the untreated control plants. Phenol-storing cells were located in 3 places in the leaf within the adaxial epidermis tissue, above the abaxial epidermis and in the vicinity of the vascular bundles. Dimensions of these three types of cells were increased by infection with Ae5, decreased by MDCA treatment and, in the combined treatment, were similar to those in control leaves. Increased numbers of phenol-storing cells were found only in the region near vascular bundles of plants treated with either Ae5 or MDCA. (263)

Patch management of herbiocides-resistant wild oat (Avena fatua). Becker, H.J.1,* Hall, L.M. 1,* and Schuba, B.1 Agriculture & Agri-Food Canada, Sault, Ontario, SK. 1Alberta Agriculture, Food and Rural Development, University of Alberta, Edmonton, AB, 1 Prairie Farm Rehabilitation Administration, Melfort, SK. A study was conducted at a 64-ha Research Farm in Sellar, SK, to prevent seed production from herbicide-resistant wild oat. A 10-plot experiment was conducted with 4 treatments each replicated four times. Annual patch expansion was determined by seed bank sampling and mapping. All crop management practices were performed by the grower. Areas of treated patches increased by 25% over the 6-yr period, whereas untreated patches increased by 70%. Patch expansion was attributed mainly to natural seed dispersal or seed movement by equipment at time of seeding. Extensive seed shelf from plants in untreated patches before harvest or control of resistant plants by alternative herbicides minimized seed movement by the combine harvester. Although both treated and untreated patches were relatively stable over time in this cropping system, preventing seed production and seed in herbicide-resistant wild oat patches can markedly slow the rate of patch expansion. (206)

Toxicity of Rodeo and Avetta® tank mixes to juvenile rainbow trout. Kang, K.A.1, Carr, C.A.*, Smith, B.C. 1, Laboratory, F47. Grasley, J.M.* and Gran, C.E. 1 Washington Cooperative Fish and Wildlife Research Unit, University of Washington, Seattle, WA. School of Aquatic and Fishery Sciences, University of Washington, Seattle, WA. Efforts to utilize herbicides in aquatic environments have been hampered by concerns


comparing the suite of acoustic and physical data at each treated site with control sites. The first-year results have already contributed to refinements in treatments and monitoring. Evaluation of herbicide efficacy is critical to managing for-agers on various perennial weeds, including the highly complex aquatic environment of the California Bay-Delta. Maximizing results while reducing risks, impacts, and expenditures are critical to the development and robust analytic tools. The success of this new aquatic technology for quantifying herbicide efficacy in the Delta marks a significant leap forward in achieving this goal. (263)