

## Evaluation of Potential Allelopathic Effects of Fine Fescue (*Festuca rubra*) Accessions on Turf Weeds

**A** two year study was conducted in Ithaca NY to evaluate fine fescues (red and chewings) which were observed to inhibit germination and establishment of common annual and perennial weeds in turf.

Eighty fescue accessions were evaluated in the field under low to moderate mowing heights for their weed suppressive abilities and suitability as turfgrass. Over two growing seasons, five fescue accessions consistently provided excellent suppression of common turf weeds when established at similar planting densities while other accessions provided moderate to little weed suppression.

Laboratory studies were conducted to evaluate potential allelopathic interference of selected fine fescues. Fescues were established for

14 days before introduction of weed seeds in gel or sand bioassay systems. Curly cress and large crabgrass growth was strongly reduced with certain accessions which apparently produced bioactive root exudates. Using a capillary mat system to produce large quantities of root biomass, root exudates were collected from fescue accessions of interest.

The production of root exudate varies with accession; certain accessions corresponding to those most suppressive in field conditions also produced exudates exhibiting strong inhibition of seed germination. HPLC, TLC and MS techniques are currently being utilized to determine the chemical nature of the bioherbicides in active root exudates.

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## Program Spotlight

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Table 3. Mean root length comparison.

Treatment	Root Length (cm)
Sand/peat	12.1 a
Zeopro/full rate	24.0 b
Zeopro/half rate	24.8 b

*\*Note: Values followed by the same letter are not significantly different; values followed by a different letter are significantly different.*

*It may be necessary to use less Zeopro in the mix or only modify a smaller portion of the root zone (less than 12 inches) or pre-load less N on the CEC sites to reduce the potential for nitrate leaching.*

