

WEED CONTROL OPTIONS DURING JUNE BERRY ESTABLISHMENT. Harlene M. Hatterman-Valenti and Paul G. Mayland, Assistant Professor and Research Specialist, North Dakota State University, Fargo, ND 58105.

Field trials were initiated near Absaraka on a Spottswood sandy loam and near Prosper, ND on a Bearden-perella silty clay loam, respectively to evaluate cultural and chemical weed control methods during juneberry establishment. Juneberry seedlings (*Amelanchier alnifolia* L. var. 'Martin') were transplanted June 4 at each location. Chemical treatments consisted of pendimethalin at 1.85, linuron at 1.12, and trifluralin at 1.68 kg ai/ha, respectively. All herbicides were applied prior to transplanting with trifluralin also receiving mechanical incorporation immediately after application. Cultural treatments consisted of black landscape fabric (polypropylene with a polyester blend), black and white plastic (6 mill), ground flax straw (10-15 cm depth), wood chips (10-15 cm depth), mechanical cultivation (rototiller), and a rye cover crop that was planted approximately 15 days prior to transplanting. All cultural treatments except the rye were applied the day after transplanting.

Visual evaluations of crop injury indicated that treatments did not injure juneberry. Timed hand weeding of plots approximately 6 weeks after transplanting indicated that all treatments required less time to weed compared to the untreated control. At Prosper, plots treated with landscape fabric, black plastic, flax, wood chips, and linuron took the least amount of time to weed while at Absaraka, plots with rye and trifluralin took longer for weed removal than other plots. Common purslane was the most prevalent weed at Absaraka followed by redroot pigweed, common lambsquarters, green foxtail, and yellow foxtail. Weed populations were more evenly distributed at Prosper than at Absaraka with yellow foxtail the most prevalent, followed by barnyardgrass, common lambsquarters, green foxtail, redroot pigweed, and common purslane. Black landscape fabric, wood chips, and linuron were the most consistent treatments to reduce weed numbers and dry weight at Absaraka while at Prosper, all treatments except rye, pendimethalin, and trifluralin had similar low weed numbers and dry weights.

Granular matrix sensors and thermistors installed in each treatment at a 15 cm depth, 15 cm from one juneberry stem following weed removal. Plots with poor weed control such as rye and trifluralin became drier than plots with wood chips, flax, landscape fabric, or black plastic. An exception occurred with white plastic. This treatment was consistently as dry as the weedy plots due to weed growth under the plastic. Flax and wood chips moderated soil temperatures more than other treatments with lower average temperatures during July through August and higher average temperatures during September and October.