

Cover Crop Studies for Montana and Wyoming

There is a continual demand by Montana and Wyoming Conservation District producers and USDA-NRCS field office personnel for the latest information on irrigated cover crop species/mixes. They are looking for answers to questions pertaining to improved soil health, reduced wind and water erosion, soil moisture management, reduced tillage and inorganic fertilizer, weed control through crop competition, the economics of implementing a new management system and the adaptability of cover crop species to local environmental conditions.

Thus, a replicated cool and warm season cover crop study is being established on a common sandy loam, row-irrigated site at the USDA-NRCS Bridger Plant Materials Center (BPMC) in southcentral Montana. The main treatment of the study will be 30 cover crop species and 12 mixes. Cover crop species include radishes, turnips, clovers, peas, vetches, beans, canola, flax, lentils, corn, safflower, sunflower, millets, and cereal grains. These crops will be evaluated for stand establishment, stand cover, weed specie and percentage of stand and forage yield. Also each agronomic operation, i.e., site preparation, planting, irrigation, herbicide use, forage harvest, etc., will be recorded for economic analysis.

In addition, diversity is lacking in the BPMC's crop rotations; they are planted between native Foundation forb/grass seed production rotations. Weed control is a big issue, i.e., broadleaf herbicides cannot be used to control a noxious weed (field bindweed) without affecting seed production in a perennial forb seed crop. The same scenario applies for grassy weed control (downy brome) in perennial grass seed crops. Adding cover crops to the rotations will hopefully help solve these issues and provide answers for native seed producers in Montana and Wyoming as well.

This project is part of a cooperative agreement between Montana NRCS and Montana State University's Northern Agricultural Research Center near Havre and Eastern Agricultural Research Center near Sidney. These two sites are dryland locations while the BPMC will give additional information under irrigated conditions. Replicated trials will be used to evaluate the adaptability, forage yield and quality, stand establishment and soil moisture utilization of different cover crop species and mixes.

Future research in 2013 will focus on various mixes of the cover crop species listed above, as opposed to individual species planted alone. In addition, seeding rates of some species will be increased to evaluate performance under irrigated conditions.

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