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## **Utilizing Cover Crops to Stabilize and Reclaim Previously Irrigated Cropland**

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### Abstract:

Drought, competition, urban growth, declining ground water levels, and evolving water laws and policy are contributing to decreasing supplies of irrigation water available to farmers in the Western US. Faced with less available irrigation water, farmers are often forced to temporarily or permanently dry-up and fallow previously irrigated land. Abruptly halting irrigated crop production on fields that have been intensively managed for decades results in several negative consequences: Residual soil nutrients threaten water quality; weed infestations are generally high and compete with perennial grass establishment; wind and water erosion can be significant due to loss of crop cover; and compaction and salinity can initially limit the non-irrigated crop and restoration planting choices. Utilizing cover crops may bridge the transition from irrigated production to dryland or grassland production or provide an interim solution to weed and soil management while waiting for irrigation water restoration. Colorado State University Extension is establishing cover crop recommendations for producers who need to assume dryland production or establish grasses into formerly irrigated fields. Demonstrative cover crop trials are utilized to develop and test best management practices to transition from an irrigated cropping system to dryland or grassland management without irrigation water. Beginning in 2006, we established cover crops including small grains such as barley, winter wheat and triticale; hay millet, sorghum and sorghum-sudangrass forages; and the legume hairy vetch on fields that abruptly lost irrigation water. Although plant establishment was difficult due to sandy soils and below average precipitation, transect and biomass results showed increased weed suppression, decreased bare ground from crop cover and plant residue, and improved soil tilth after two years of cover crops.

### Impact Statement:

Initial results from this work show cover crops provide a viable source of soil cover and residue to reduce erosion, suppress weeds and uptake nutrients for restoration of previously irrigated land. Weed suppression allowed proportionate increases in cover crop biomass with decreases in weed seed and biomass production. This work has generated much interest from the cooperating farmer and surrounding land owners.

Category: Rural Environmental Protection

Type of Presentation: Poster Presentation