For More Information

Check with your local USDA Service Center providers:

- *Natural Resources Conservation Service*
- *Conservation District*
- *Farmers Home Administration*

Contact your Cooperative Extension Service office

Check these Web sites:

- *www.usda.gov/drought*
- *http://droughtmonitor.unl.edu*
- *http://www.extension.org/pages/64730/drought-resources-content*

Other Tip Sheets

- *Water Conservation Tips for Stretching Water on Crops & Soils*
- *Water Conservation Tips for Stretching Irrigation Water*
- *Water Conservation Tips for Stretching Water on Pasture & Range*
- *Crop & Irrigation Management During Drought*

To download these tip sheets go to:

http://www.ut.nrcs.usda.gov/farmers.html

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Water Conservation Ideas for Dryland Farmers in Utah

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Crop & Tillage Ideas for Conserving Moisture

Dryland Vulnerable

If drought persists, conditions will be very severe for wind and/or water erosion on Utah's dryland. Steps must be taken to protect the soil and conserve valuable moisture. Leaving mulch on the soil surface with a conservation tillage system is your best protection.

Surface mulch from previous crop residues retards runoff, increases absorption and percolation, and greatly reduces evaporation.

Wheat-fallow studies show the value of retaining stubble on the soil surface.

Colorado research shows chemical weed control (no till) conserved an average of 9.3 inches of water in the soil profile each fallow year. Wheat yields averaged 45.3 bushels per acre. In comparison, stubble mulching with tillage implements stored only 6.8 inches of water and yields dropped to 38 bushels.

In Oregon, tests revealed water storage in the soil profile under undisturbed wheat stubble was 87 percent. When stubble was plowed, only 64 percent of the water was retained.

The following suggestions can help you conserve soil moisture and reduce soil erosion on dryland.

Tillage Tips for Dryland

►Leave as much straw on the surface as possible. Last year's stubble will be needed to control erosion.

►Use chemicals for weed control whenever possible. Follow label for best results.

►Delay spring tillage until absolutely essential to kill weeds or volunteer wheat.

►Do not use turn plows or one-way discs.

►Use chisels or sweeps for the first necessary operation.

►Reduce the total number of tillage operations.

►Keep tillage shallow.

►Rod-weed only when needed to control weeds; once, not more than twice unless it rains.

►Over-tillage destroys crop residues and dries out the soil.

►Seed on contour to slow runoff.

►Install terraces to hold water runoff.

Residue Needed to control Erosion

Small grain residues are very effective in controlling soil erosion. Leaving 30 percent residue cover on a field can reduce erosion by as much as 65 percent. Standing stubble is more effective for wind erosion control than flat stubble.

Emergency Tillage for Wind Erosion Control

A dense cover of growing plants or plant residue is the best protection against wind erosion. But when plant cover is not adequate or is depleted, other methods of controlling wind erosion are needed. Emergency tillage is commonly used to provide temporary protection.

The purpose of emergency tillage is to break up the smooth surface of a bare field into rough clods that resist the force of wind.

Listers, duckfoot cultivators, and chisels are most commonly used for emergency tillage. Their effectiveness depends to a great extent on soil texture and moisture content, depth of tillage, speed of travel, spacing between toolhead carriers, and the kind of toolhead.

Tillage generally should be at right angles to the direction of the most frequent erosive winds.

Tillage at a speed of 3.5 to 4 miles per hour is most effective.

Solid listing is the best method for emergency tillage of sandy or sandy loam soils.

Chiseling generally is the best method for emergency tillage of medium-textured and fine-textured soils. Chiseling can be solid or in strips.

August 2012
This publication provided as a service to Utah farmers and ranchers by the Utah state office of the Natural Resources Conservation Service
125 South State Street, Salt Lake City UT 84138
For further assistance contact your county NRCS field office listed in the phone book under USDA.