Contouring

Nebraska Conservation Planning Sheet No. 1

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What is contouring?

Contouring is preparing the soil, planting and cultivating crops around a hill rather than up and down the hill. Contour rows run around a slope nearly on the level. The rows form hundreds of "small dams" to slow runoff.

A similar conservation practice called cross-slope farming involves establishing a row pattern that is not up and down hill and as nearly on the contour as possible. Although not as effective as contouring, cross-slope farming can be used to protect some areas.

How it helps the land

Contouring reduces sheet and rill erosion on sloping cropland. Farming sloping cropland on the contour can reduce soil loss by as much as 50 percent.

Cross-slope farming also reduces sheet and rill erosion but to a lesser degree than contouring.

Where the practice applies

Contouring is a conservation option on any cropland where sheet and rill erosion are a problem. Cross-slope farming can be used instead of contouring on slopes where contour farming is impractical.

Where to get help

For assistance in planning and establishing contouring and cross-slope farming on your farm, contact your Soil Conservation Service office. Ask SCS for a short video segment, "How to lay out contour lines and use field borders." It's part of a video series called "Conservation On Your Own" and will show you how to lay out your own contour lines.

Requirements of contouring

The lay of your land, or the shape and steepness of the slopes on your land, determines the row pattern of your contours. Your land may be

steep or irregular enough that you have more than one key contour line. That means that you may have two or more contour patterns in the same field.

To minimize soil loss, SCS requires:

- The key line does not exceed 2 percent slope within the contour row to avoid too steep or reverse grades.
- All tillage and planting operations are parallel to a key contour line.
- The grade of any row may vary up to a maximum of 3% slope, but that variance cannot occur on more than 100 feet of row length. That much variance is tolerated because of the difficulty of following a contour on steep, irregular shaped slopes.
- Maintaining ridges will make contouring more effective at controlling water erosion. Ridges can be in three categories: low, 1-3 inches; moderate, 3-5 inches; and ridge systems 6 inches or greater. Conservation plans may specify required ridge heights.

Applying the practice

This practice is considered applied when the row pattern meets the above requirements.

A hand level or a contour gauge, and a way of marking your contour lines are the only tools you need to lay out contours. You'll need a helper to set the flags for you. Follow this procedure to lay out contours in your fields.

Lay out the key contour line

- Test your hand level for accuracy. Look through the level with your right eye into a mirror. If the level is accurate, you should be looking at yourself in the center of your left eye with the bubble centered.
- On level ground, look through the hand level and find a spot on your helper that's the same height as your eye level.
- Go to the nose or saddle of the slope, walk downhill to a point that is slightly above the midpoint of the slope and place a flag in the ground. Have your helper stand by the flag.
- With your level and flags, walk about 50 feet (17 steps) around the hill. Turn around and sight in the spot on your helper you saw on level ground. Move uphill or downhill until the bubble is centered on the spot on your helper. Put a flag in the ground.
- Advance another 17 steps. Your helper should move to the flag you just set. Repeat the previous procedure until you reach the field border. To save flags, your helper could pull every other flag, leaving flags spaced every 100 feet.
- Return to your beginning point at the nose of the slope and repeat the procedure in the opposite direction until you reach the other field border.

Check the key contour line

- The line you have made with the flags is the key contour line. Follow the key contour with a pickup or tractor to make sure there are no curves too sharp to maneuver machinery.
- If you find a curve too sharp to be farmed, make an adjustment to one or more marker flags. ***Remember to check with your SCS office to see how much you can adjust the contour.***

Other considerations

- Laying out contour lines can go faster if you use two all terrain vehicles, instead of walking.
- A substitute tool for a hand level is a contour gauge. Drive your tractor or pickup to a level spot, and mount the gauge on a side window with the bubble centered. To improve gauge accuracy, avoid using short wheel base vehicles (tractors are best). Then drive to the field. When you get to the point where you want to begin your contour line, drive slowly around the hill, keeping the bubble of the gauge in the center. Have someone walk behind and place flags in the ground every 100 feet.
- If the slope is irregular, very steep, or longer than 250 feet, you may need to establish a second or third key contour line. If you don't establish more than one contour line, rows above or below the key contour lines may begin to run up and down hill at different points in the field.
- Where curves in contour lines are too sharp to farm, grass turnstrips may be needed for turn areas.
- Use field borders with contouring. You defeat the purpose of contouring if you plant end rows up and down hill. Instead, use a grassed field border as a turn row at the ends of your field. Field borders often qualify as set-aside acres. They're also good cover for wildlife. Be sure the field borders are wide enough to turn farm equipment.
- Use grassed waterways in areas where runoff concentrates. Never plant crop rows up and down the side of the waterway. Where grass waterways are established, contour rows should enter the grass area nearly on the level, but with a slight grade downhill to direct the water to the waterway.

Maintaining the practice

To avoid having to lay out a key contour line every year, it's a good idea to establish a permanent strip of grass along the key contour line.

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