EACH YEAR THOUSANDS OF ACRES OF ILLINOIS cropland are damaged by sheet-erosion—the removal of a thin, rather uniform layer of topsoil. This process is so gradual that many farmers and landowners do not recognize it, and consequently do nothing to prevent or control it.

Sheet erosion takes place on land slopes as gentle as 2 percent—practically flat land. The amount of soil lost from research plots on a 2-percent slope located at Urbana, Illinois, illustrates the extent of sheet erosion during part of the cropping season. During the 9-year period (1941-1949), an average June rainfall of 5.33 inches produced 1.08 inches of run-off and 4,052 pounds-per-acre soil loss where corn was planted up and down the slope. Less permeable soils—ones underlaid with tight clay—would probably have had more soil loss.

A simple change in farming operations to contour planting and cultivating can help control sheet erosion. Studies conducted on plots adjacent to those mentioned earlier show that contour planting and cultivating reduced the average run-off during June to 0.80 inches and soil loss to 2,591 pounds per acre—a 26-percent reduction in run-off and a 36-percent reduction in soil loss. In addition, corn yielded an average of 2.3 bushels more per acre on the contoured plots. Contour farming will save your soil as well as pay you a profit.

(Fig. 4)
Contour Plowing

In planning for contour farming, stake several guidelines around the slope. If they prove almost parallel, plowing and planting operations are regular. But most fields will have uneven areas between contour guidelines. The best plan is to plow back-furrows on the contour lines and work around them until about half the area is plowed; then plow the lands between, leaving dead furrows (Fig. 1).

Two methods of plowing uneven or point-row areas are shown in Fig. 2. Method 1 is used for the first contour plowing when a field is being planted to corn or soybeans. The chief advantage of this method is that it practically eliminates turning on plowed ground. Method 2 is used for the second plowing when the point rows are still visible. This method will locate the dead furrows on the contour-line back-furrows.

Take care to lift the plow in crossing grass waterways, and do not leave furrows up and down hill alongside the waterways. In plowing meadow, inexperienced operators should mark edges of waterways with a stake line or shallow scratch furrow far enough back to be erased in plowing and to form an irregular plowed edge.

Planting on the Contour

In preparing the seedbed and planting small grain and row crops, follow the same general plan as in plowing. If the field has been plowed before contouring was planned, then guidelines may be marked out for diskng, drilling, or planting. However, plowing on the contour gives best results in checking sheet erosion.

Before you start contour planting, you should give some consideration to the way the crop is to be harvested, especially if the corn is to be picked with a picker or soybeans are to be combined. Most machine operators like to have the point rows planted as shown in “A” of Fig. 3 so that they can be harvested last. To start planting, follow each contour line, using two planter markers at once, one above and the other below the line. Then plant from each side, using these marks as guides.
Suggested plan for plowing a field, using three contour guidelines. (Fig. 1)

METHOD 1

Plow around until unplowed land is about 2 rods wide in narrowest place.

Continue to plow around wider areas until only a 2-rod strip remains. Use it to turn on.

Plow out turn strip.

METHOD 2

Using point rows as guide, plow out irregular areas first. Start at this point.

When plowed areas join at narrowest point, plow right on thru, connecting the lands.

Continue plowing around land until strip is completed.

Two methods of plowing out point-row areas (A — A) in Fig. 1. (Fig. 2)

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A. Field is in a cultivated crop; point rows are midway between lines.

B. Field is in a cultivated crop; point rows end at next line below.

C. Point rows planted in small grain or hay crop.

D. "Key" line system, field in one crop; point rows at corners.

Four methods of contour-planting. These methods are also well suited for use with terraces (except D) or contour buffer strips. The strips, consisting of a small grain and a legume seeding or a hay crop, should be at least 20 feet wide along each contour line. (Fig. 3)

Locating Contour Lines

You can obtain assistance in planning and locating contour lines through your local soil conservation district, although anyone of average ability can learn to locate contour lines. Two people are needed—a levelman and a rodman—and the following equipment:

1. Hand level
2. Stakes
3. Hand axe or hatchet.

A level rod and target are helpful in locating contour lines, but are not absolutely necessary.
Before plowing an average slope, start at the top of the slope and measure the width of a land (not to exceed 200 feet) for each contour line. When only one contour line is needed, as on small fields or quite uniform slopes, the line may be located halfway down the slope. Set a stake and start leveling from this point (Fig. 4). For a target select a prominent point on the rodman's features that is the same height as the line of sight. (For more accurate work a level rod is used.)

The rodman paces 50 to 100 feet around the slope to Position 2, staying approximately on the contour. The levelman, standing in his original position, directs the rodman up or down the slope until he is on the same level or contour as the levelman. The rodman sets a stake at Position 2 (Fig. 4) and the levelman moves to this second stake. The rodman then moves 50 to 100 feet around the slope. This procedure is repeated until the line crosses the field. Thus no sights are longer than 100 feet.

After a line of stakes is set, one man walks along the line, moving the stakes to get rid of minor irregularities and reduce sharp turns. The object is to make either long, smooth curves or straight lines. A plow or some other tillage implement should then be used to mark the lines more definitely—a shallow plow furrow can be seen much farther than stakes.

Several contour guidelines about 100 feet apart should usually be staked on long or irregular slopes. If they prove almost parallel, only one may be needed, but in most cases several are required to keep all rows reasonably level. If only one contour guideline is used, or if the width between contours is too great for width of lands in plowing, lands of even width may be located on each side of the contour line. You can locate these lands by pacing or by
using a tape, wire, or rope to measure an even distance above or below the original contour line.

**Limitations of Contour Farming**

Contouring is easiest on fields sloping uniformly in one or two directions. It is usually impractical on fields of irregular topography with great variations in slope. These fields should be left in permanent sod or planted in row crops no oftener than once every 4 or 5 years. If gullies are to be checked, grass waterways must be established in all draws or drainageways that tend to erode.

A system of sound soil treatment and crop rotation, including grasses and deep-rooted legumes, must go along with contour farming. Even then, terracing or strip cropping may be needed for more effective erosion control.

To determine the various crop rotations and mechanical practices necessary to control erosion on your farm, see your farm adviser or soil conservationist. He has slope and practice limitations tables that will tell you the amount of soil you are losing each year.

**Terraces and Strip Cropping**

Contour farming frequently serves as the first step toward the use of terraces or strip cropping. Terracing or contour strip cropping will result in better erosion control, the terraced land being contour-plowed and planted with the terrace ridges as a guide. Strips of hay on the contour may serve as guidelines in strip cropping.

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