

## USING THE SLOPE MAP AS A BASIS FOR FARM PLANNING

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The almost universal pattern for laying out farms into fields has been that of a number of equal sized fields of rectangular or square shape. The fact that the topography of the field many times varied from level to slopes of as much as 15 per cent did not receive much consideration in planning for fence lines. Fields which were made up of various degrees of slope, usually could not be farmed so as to get a good profit from the soil and at the same time not lose the top soil by erosion. In making a good farm plan one should consider the capacity of the land to produce and still remain in place and maintain or improve in fertility. As a basis for a good farm plan the slope map provides information on field arrangement and selection of crops, as the greater the slope in length or per cent, or both, the greater the erosion hazard and the more crop protection necessary. The slope of the land gives a good indication of the amount of surface soil remaining or the amount that will be remaining if ordinary farm arrangement is continued.

The slope map of a farm is made by reading the slope of an area with a level such as the Abney Hand Level and sketching the area on a map of the farm. Usually 5 or 6 classes of slope are used, these being: Level (0 through 1 per cent), Gently rolling (2 through 4 per cent), Rolling (5 through 9 per cent), Rough (10 through 14 per cent) and Hilly (15 per cent or above). Each of the above classes is given a color and all of the like slopes are colored on the map in one color. Field arrangement is then made up to include like areas in the same system or rotation. The field arrangement can easily be determined by placing an outline map of the farm over the colored map and sketching in field lines. Fences will not always divide a farm into four equal and uniform shape and size fields, but they can be placed so that a series of uniform size fields with uniform topography can be included in one rotation.

The level land will stand a rotation with more cultivated crops and less meadow than will the next class in steepness. Likewise the level land will need less protection from mechanical measures such as terraces, contour farming and grass waterways than will the next class with greater slope.

**Using Slope Map.**—If such mechanical measures are used then a stronger rotation can be used on the areas with more slope. To illustrate, consider the field of 3% slope which without any protection would need to be served by a rotation such as, Corn, Small Grain, Meadow, Meadow. The same field, if contour farmed could stand to have a rotation with one more year of corn, or perhaps one year less of meadow.

The shape of fields can be planned so that the rows of crops can be on the level and not up and down the slope. Many times this can be accomplished by only moving one fence to run at right angles to the old line. In other cases fences may be on a curve or diagonal. In many cases long slopes can be divided by fences or strips of crops so that accumulation of large volume of water is hindered as much as possible.

Areas that are too steep can be arranged for pasture while those which are not convenient for pasture or are too steep for grazing can be set aside for tree plantings.

Using the slope map as a basis for planning and supplementing it with other points for consideration in planning make possible a plan which will make fullest use of the capability of the land and protect it from erosion. Without consideration of the slope of the land much needless waste of the top soil and surface water takes place. Certainly both the surface water and surface soil must be controlled if maximum production is to be secured. That slope map gives a sound basis for planning a farm so as to conserve soil and water.