DETERMINING YIELDS ON EXPERIMENTAL PLATS BY THE SQUARE YARD METHOD

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Under certain conditions it is sometimes necessary or desirable to determine yields on experimental plats by harvesting a number of very small apparently representative areas. Theoretically, harvesting and computing yields of the entire plats would be the most satisfactory way of determining yields. Under certain field conditions, however, it may be practically impossible to obtain accurate results from large plats. The lodging of grain and forage, the uneven stands due to winter killings, burning during the jointing stages of grain, unpreventable losses occurring during harvesting and threshing, and losses incident to weathering are some of the more serious difficulties met with when the entire plat is harvested. In carrying out cooperative demonstration work on grains or forage with farmers it is often desirable to use a number of square yards for computing yields from plats or fields. It is highly probable that some, if not all, of these difficulties can be eliminated by the use of a number of square yards for the determination of yields on large plats.

REVIEW OF LITERATURE

Arny and Garber (1), working with fertilizers on cereals, conclude that nine rod rows from tenth-acre plats gave practically as accurate indications of the value of fertilizer treatments as did harvesting the product of the entire plats. The rod-row method may be used to advantage in determining yields of grain where facilities are lacking for harvesting and threshing accurately the products of the entire areas. Arny and Steinmetz (2), in a later study with fertilizer applications to cereals at University Farm and at eight sub-stations located in different parts of Minnesota, found that yields determined from four or five systematically distributed square yard areas removed from plats one-tenth acre in size or less, from a relatively uniform crop, may be confidently substituted for that from the entire plat. They also found that yields from uniform stands determined by 10 square-yard areas systematically distributed may not be as accurate as yields determined from entire plats.

Kiesselbach (3) studying the methods of eliminating experimental error in comparative crop tests found that the results from 20 systematically distributed quadrats may be safely substituted for the yield of the entire plat.

MATERIALS AND METHODS

Data from yields obtained on plats and by six square yards on varieties of winter and spring wheat, barley, and oats grown at Uni-

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