ROOT RESERVES OF ALFALFA WITH SPECIAL REFERENCE TO TIME OF CUTTING AND YIELD

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Investigations concerning the best stage of harvesting alfalfa were started at Columbus in 1925 primarily to answer the question, "How many cuttings of alfalfa are best in central Ohio?" Since it is obvious that any effect of cutting treatments on later yields must be through the roots in some way, roots as well as tops were harvested in order to follow the changes in amount of roots as they occurred throughout the season.

Yields of both hay and roots were secured by harvesting carefully selected representative square yard samples, duplicated always, and, in 1925, quadruplicated. The roots were harvested to a depth of approximately 1 foot, but were not trimmed to length after being dug in the field. The alfalfa was cut five, four, three, and two times each season. The first cuttings were made at bud stage, very early bloom, nearly full bloom, and early seed stage, respectively. The last cutting was made on the same date for all stages of harvesting, and the intervening time was arbitrarily divided but resulted in cutting at very nearly the stages just mentioned for the different cutting treatments throughout the season. Four other cutting treatments were also followed in 1926, 1927, and 1928.

Yields from square yard plats which are reported as below 1,000 pounds per acre were of such very short alfalfa that much of it would have been lost by machine harvesting. Above 1,500 pounds per acre the square yard yields check very closely with field yields. The hay yields secured, and the corresponding yields of roots, are given in Table 1. The yields in 1926, 1927, and 1928 were from the same plats, sown in 1925; while the yields in 1925 were from plats in a field sown in 1924, but not continued after June 1926. Table 2 gives the June 1926 yields on the 1925 plats.

The hay data have been previously published and discussed (5), but the following practical points may be noted:

1. Cutting five times resulted in a total loss of stand from winter-killing on one series and a considerable decrease in yield the next year in the other. This system was impractical, even to secure extra quality hay.

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3Reference by number is to "Literature Cited," p. 602.