THE EFFECT OF GROWING CORN AND SOYBEANS IN COMBINATION ON THE PERCENTAGE OF DRY MATTER IN THE TWO CROPS

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During the past 9 years a series of experiments have been conducted at the Cornell University Agricultural Experiment Station for the purpose of studying the possibilities of the soybean as a silage crop in combination with corn. The results of these tests are being published as Station Bulletin 548, 1932.

The plan of the experiments required plantings which included two varieties of corn and two varieties of soybeans. The varieties of corn were Luce's Favorite, a heavy-producing medium-late corn generally suitable for silage production at the lower elevations in New York State (now very largely replaced by Westbranch Sweepstakes), and Cornell 11, a medium-early corn generally suitable for grain at the lower elevations and for silage at higher elevations. The two varieties of soybeans were Wilson, an indeterminate small-seeded variety, and Medium Early Green, a determinate large-seeded variety, now largely displaced by non-shattering equally productive smaller-seeded varieties.

These two varieties of corn and the two varieties of soybeans were grown separately in three-row blocks and in combination in three-row blocks, and in addition the soybeans were grown in single rows and in three-row blocks between three-row blocks of corn (Fig. 1). This arrangement gave an opportunity to compare under very similar conditions several combinations of the two crops on a minimum of land.

In connection with these experiments it was necessary to take many shrinkage samples, since the value of silage is very largely dependent on total dry weight. The purpose of this paper is to report the effect of growing corn and soybeans in combination on the percentage of dry matter in the two crops.

In the corn and soybean work, shrinkage samples of about 40 pounds green weight were taken and weighed immediately after cutting before loss of moisture took place. These samples were then dried to constant weight at 180°F in a large drying kiln. This practice does not eliminate all moisture, but for the purposes for which the samples were used it is essentially moisture free, since all samples are dried to an extremely low uniform moisture content. The general practice in this kind of work is to calculate the average percentage dry matter of the several shrinkage samples taken from the different series of the same thing. The percentages of dry matter used in this paper, however, are individual determinations and include only those which can be paired, one sample taken from a plat where the crop was grown alone, the other where it was grown in combination.

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