

Corn Silage Contest

Procedure for Estimating Corn Silage Yields

A. The steps for estimating corn silage yields in the field are as follows:

1. Locate 15 sample rows at random over the area from which the yield is estimated. *It is important that these samples be located at random to avoid any tendency to select the better spots for individual sample rows.* Make certain that the random sampling covers all sections of the field.
2. Using a steel tape or measured length of heavy cord, measure a 25-foot section in each sample row. Collect the following information on this 25-foot section:
 - a. Count the number of stalks, and record on the field data summary sheet.
 - b. Cut three stalks at random from each sample section. Before sampling, decide which stalks are to be cut; for example, choose the 5th, 10th, and 15th. Always cut three stalks.
3. Measure the average row width, and record on the field data summary sheet.
4. Combine the 45 stalks cut from the 15 sample row sections. Weigh and record the weight of these 45 stalks to the nearest 1/10 pound. Milk scales are satisfactory for weighing; divide sample if necessary.
5. Take a sample for percent dry matter determination by following one of the two methods outlined below. Plastic bags and mailers may be obtained from the local extension agent.
 - a. If the field is being harvested at the time of yield estimation, take a regular forage sample from the wagon, preferably as it is being unloaded.
 - b. If the field is not being harvested, select 10 stalks of corn at random from the 45 and run them through a forage harvester or cut by hand into 1/2- to 3/4-inch lengths. Prepare this sample as for forage testing, and send it to the Forage Testing Laboratory at Virginia Tech. Be sure that the plastic bag is tightly closed to prevent moisture from escaping. A minimum of 1 pint is needed for testing.

B. Once the field procedure is completed, the following steps should be performed to calculate information required on the field data summary sheet. All calculations should be carried to two decimal places.

1. Find the total number of stalks in the 15 sample 25-foot sections.
2. Calculate the total number of stalks per acre by multiplying the total number of stalks in the 15 sample sections by the appropriate conversion factor (row width) from Table A. (total sample stalks) x (row width factor) = (total stalks per acre)

$$\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}} .$$

3. Determine the average green weight of each of the 45 stalks:
lbs. total green weight = average lbs. per stalk

$$\frac{\text{\# of stalks weighed}}{45} = \underline{\hspace{2cm}} \text{ average lbs. per stalk.}$$

4. Determine the green weight of silage in 375 feet of row (15 samples times 25 feet, as determined in Step 1):
(stalks in 375 feet) x (average lbs. per plant) = (lbs. total green weight in sampled 25-foot sections)

$$\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}} .$$

5. Determine the green weight per acre:
 (lbs. from 375-foot sample) x (row width factor) = lbs. green weight per acre

$$\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}} .$$

6. Calculate yield per acre:
 (% TDN as fed) x (lbs. green weight per acre) = lbs. TDN per acre

$$\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}} .$$

TABLE A

Factors for Calculating Stalk Numbers and Green Weight per Acre from 375 Feet of Sample Row

Row Width	Conversion Factor	Row Width	Conversion Factor
42	33.19	28	49.78
40	34.85	26	53.61
38	36.68	24	58.08
36	38.72	22	63.36
34	41.00	20	69.70
32	43.56	18	77.44
30	46.47		