

Lettuce Growth Rates

investigations find heat unit accumulations not a reliable means of predicting harvest time

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Lettuce growth rates depend primarily on the month of planting.

Temperatures afterwards do not affect growth reliably enough to serve as a basis for possible predictions of the maturity date.

The system of utilizing temperature accumulations to predict maturity dates has been used successfully with apricots, peaches, grapes, peas, and sweet corn. Its application to the prediction of lettuce harvest dates was studied.

This system involves first the selection of a base temperature, for example, of 40°, 45°, or 50° F, depending on the

crop. It is assumed that this is the minimum at which appreciable growth of that particular crop takes place.

One method is to determine the average daily temperature, subtract the base temperature and accumulate the daily differences to obtain a total which is called degree-days. This summation of degree-days can be between planting and harvest in the case of an annual crop or between the blooming and ripening of a tree fruit.

When a crop is growing or maturing year after year always under the same seasonal conditions—as for example, late spring or early summer—the summation

of degree-days from planting or blooming to maturity usually is a fairly constant figure for any given variety of a certain crop.

Various modifications of the temperature summation system were applied to planting and harvesting data for lettuce crops grown from seed planted in the Imperial Valley in the fall. For four consecutive years the system was applied to data on Salinas plantings made between late November and mid-August. These data represent 40 commercial fields the first year; 81 the second year; 96 the third year; and 116 the fourth year.

The summations of degree-days did not give a constant total for plantings made in different months. The figures varied widely depending on the month in which the seed was planted. While temperature is an important factor in its growth, lettuce does not use a sufficiently constant total of heat units in reaching maturity for summations to be used as a means of predicting harvest dates.

Growers have learned from experience that if they plant lettuce on some particular date during a certain part of the year it usually will mature in about the same number of days every year. This was confirmed from the field records in Salinas for plantings made between March and August.

When lettuce is planted during the period from November through February, it may take considerably longer to mature in one year than in another. The late winter and early spring months of one year may be colder than those of the similar period in a following year. Thus there is a corresponding difference between the two years and in the number of days needed for the crops to be ready for harvesting. When the winter and early spring temperatures of one year and the following year are similar, the crops started during the winter months of each year require practically the same number of days to reach maturity.

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