THE ADAPTATION OF CORN TO CLIMATE

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RECENT investigations demand a revision of the prevalent idea that seed corn brought from a distance will not produce so abundantly as local varieties. It has been widely recognized that a change in latitude brings about a marked difference in vegetative growth and time of ripening because of the alteration in the relative length of day and night. The assumption has been that this change generally works adversely. It has also been assumed that a change in longitude, since it does not alter the length of the period of daylight, produces little effect except when it means a change to deficient summer rain. Nevertheless, the prevalent opinion throughout the principal corn-growing states has been that when seed is planted at distances of more than a few hundred miles east or west of where it was grown it will not do so well as varieties which have long been grown locally.

This widely held idea seems at first sight to be supported by practical experience. Seed from the North Atlantic states will not produce as much grain or forage in Ohio or Ontario as the best native sorts. Ohio and Ontario seed, in turn, usually does not give as good performance as the home-grown sorts in Illinois or Wisconsin. Local varieties from these latter sources, in turn, usually fail in Kansas, Nebraska, and the Dakotas, unless the season there is unusually favorable, as one of the writers well knows from his own sad personal experience in Kansas. Examples of this kind could easily be multiplied.

Other lines of evidence give partial support to the prevalent idea, but introduce elements of doubt. Recent experience in testing hybrid types of sweet corn in Connecticut furnishes an example. These hybrids have been developed from inbred strains of varieties that originated many years ago in southern New England, or nearby regions, and have always been grown there. In this section these varieties produce remarkably fine yields of well-formed, attractive ears. The best of the crosses derived from them are even more productive and attractive in ear formation. When seed of these new hybrids is sent to Maryland, Ohio, or Michigan, the reports are seldom favorable. Occasionally some types do fairly well, but not enough better than local varieties to justify extensive use. Invariably the reports from Illinois, Missouri, and Kansas indicate almost complete failure every year. It is hopeless to try to grow sweet corn from New England in those sections. The leaves begin to roll early in the season even when the soil is well supplied with moisture.

On the other hand, when the new hybrids are tested in certain other places, they do well. From central New England, New York, and some parts of Pennsylvania the reports are often favorable. Some Connecticut hybrid sweet corns have been grown for canning for

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