land and just covered by the early autumn shallow plowing which is mentioned above.

Spring Cultivation and Planting.

Plant as early as climate and soil will allow. In that area, previously mentioned, where sugar beets may be expected to do well, plant not later than May 1st. Early planted beets, as experience in other countries has shown, uniformly give both a greater yield and a higher content of sugar than those which are planted later.

Spring cultivation for planting must be shallow, the object being to prepare a seed-bed whose soil is reduced to the highest degree of tilth, resembling the surface soil of a well prepared onion bed. The exact method of working the land to attain this object will vary in different locations and soils as soils themselves and weather vary. For every soil, however, loosening the surface to a depth of three inches is an essential operation, after which, by the proper use at the right time, of the roller and harrow, a seed-bed, which is mellow, firm, moist and warm, can with little difficulty be prepared. The seed should be planted upon the same day, or as early after as possible, as the final preparation of the seed bed. Before planting and while preparing the seed-bed, commercial fertilizers containing the constituents phosphoric acid and potash, should be sown broadcast and worked into the soil of the seed-bed in its preparation. Hardwood ashes and superphosphate of lime (water soluble phosphate) may be used to furnish the above constituents. The quantities required, since soils vary in fertility and fertilizers in composition, may differ for every soil. Fifteen tons of beets with their tops require 300 lbs. potash, 60 lbs. phosphoric acid, and 155 lbs. of nitrogen. These figures may form the best basis for calculating the required quantities of fertilizers to be used in addition to the manure or residue of manure already in the soil. Nitrogen, which may be needed over and above that in the manure, can to advantage be applied in the form of a soluble salt as a top dressing after the plants are thinned. Lime, which may be obtained from sugar beet factories as a bye-product free, is essential in soils growing sugar beets.

Seed.

The choice of seed is a matter of very great importance. Under no consideration should an inferior variety or quality of seed be sown. Owing to the many good varieties of sugar beets, arising chiefly from selection and culture, it is not easy to name all. The Vilmorin Improved (Fig. 3) and the Kleinwanzlebener (Fig. 4) have been the most widely grown in America.

When the soil of the seed-bed has been reduced to a finely divided condition, it should be compressed by rolling, and upon the same day the seeds may be planted to a depth of one inch. Planting, therefore, is *upon the flat*, done either by hand or by drill at the rate of 16 pounds of seed per acre.

The best results in root and sugar content are obtained by a distance of 21 inches between the drills, and seven inches between the plants in the drill. At these distances, the ground becomes completely covered with the foliage, a condition which is very essential to a paying percentage of sugar. After planting, the land should be harrowed once lengthwise with the planting