

dropped in a "pile row" with the left hand as it reaches to grasp the next stalk and the operation is repeated. This is the fastest of the four variations. The complete cycle required an experienced worker 120-thousandths of a minute.

A variation of this method, which results in leaving a longer root and thereby avoids some shattering, is performed in somewhat the same way. After the root is severed with the knife, which in this case is held at about a 45° angle, the stalk is lifted and turned over with the left hand. The right hand then trims with one cut the remaining part of the root, palms the knife and proceeds as in the previous method. This method took the same worker (not experienced in this procedure) a longer time (154-thousandths of a minute) but accomplished a neater job of root trimming. The method does overcome the chief disadvantages of the hand-knife method in that it reduces the amount of shattering resulting from the roots being cut or broken off too short and also eliminates cracking the ribs of crisp celery by bending it over as its root is being cut. Although this method is not in the most common use, it is probably the best of the four variations observed.

The other two variations follow the same procedure except that the hand-knife is not held in the palm of the hand, but is left in the ground. All the workers observed who were leaving the knife in the ground followed the procedure of carrying the knife back from 10 to 18 inches and sticking it upright in the soil after the root was cut. There is no explanation for this procedure other than that it is more or less a natural move which workers develop. Twenty-seven thousandths of a minute was lost in thrusting the knife upright into the ground each time a stalk was cut. A micromotion analysis of this method led to the development of an improved procedure. Workers were trained to release the knife the instant the root was cut. This left the knife thrust in the ground with the handle in position to grasp for the next stalk with a minimum of knife movements.

A crew of eight workers, who were all following the method of releasing the knife after thrusting it back in the ground, were trained to release the knife at the end of the cut. The workers accepted and used the new method.

In both Sanford and Sarasota areas the push-knife is used for cutting celery. This results in more divisions of labor in the field crew than where the hand-knife method is used. One of the chief difficulties with the push-knife is recruiting laborers