THE EFFECT OF SOIL CONDITIONS AND TREATMENT
ON YIELDS OF TUBERS AND SUGAR FROM THE
AMERICAN ARTICHOKE (HELIANTHUS
TUBEROSUS)\(^1\)

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The American artichoke (Helianthus tuberosus),\(^3\) which is native to the eastern half of the United States, has considerable potential value as a cultivated crop. Although closely related to the sunflower, the artichoke differs in that it produces tubers as the principal harvested portion. Improved cultivated varieties bear comparatively large tubers clustered near the main root in contrast with wild forms of artichokes which produce small tubers on long stems. The tubers are formed during late summer and autumn, and will store perfectly over winter when left in place in the field.

Artichoke tubers have been used rather extensively for both human food and feed for livestock in France and other European countries for at least a hundred years. Although attention has been directed to the artichoke occasionally in America, its poor storage qualities after harvest have impeded its adoption as a standard crop plant. Nevertheless, the tubers have been recognized locally as a valuable vegetable, and farm experience has substantiated the records of their high feeding value for hogs, dairy cows, and other livestock. Artichoke tubers are also an exceedingly important potential source of levulose sugar. Because of its superior sweetening value and high preservative effect as compared with ordinary cane sugar, levulose sugar has a high potential value in industry and commerce. Development of methods for factory-scale production of levulose from artichoke tubers, will permit exploitation of the crop for levulose manufacture. The present increasing use of artichoke tubers for human food as a vegetable warrants reports of tests on certain cultural practices which are of importance in growth of the crop.

Artichokes are credited with a very wide range of adaptation to both soil and climatic conditions. However, there are certain specific conditions that permit comparatively high yields of tubers and of inulin from which levulose is manufactured. More complete information on such conditions is necessary for profitable production of the crop.

EXPERIMENTAL PROCEDURE

The experiments reported herein were conducted with the improved white variety obtained from T. W. Wood & Sons at Richmond, Virginia. The tubers were cut and planted with a potato planter in early May in rows 3 feet apart.