Effects of fertilization on the production of lotus tuber in containers

Changzheng Wang and Lingyu Huang

School of Education and Consumer Science

College of Agriculture, Communities and the Sciences

Kentucky State University

Frankfort, KY 40601

Lotus tuber is popular food item among Asian immigrants. There is no producers to supply this product in Kentucky. The supply provided from foreign imports is not fresh and of low quality. Our preliminary study proved that Kentucky climate supports the production of lotus plants. The objective of this study was to determine the effects of fertilization on the growth performance and production of a lotus variety selected for tuber production. Four levels of fertilization rates were tested in an experiment with 24 plastic containers (18-gallon volume). Half of the containers were provided with 30 g of a 10-10-10 fertilizer for vegetables from Southern State Cooperative. The containers were filled with garden soil to 40 cm deep and rain water collected from a barn roof was added into the containers to cover the soil to a depth 10 cm below the rim of the containers. One root tuber was planted into each container on May 1, 2019. Four levels of the same fertilizer mentioned above (7.5 g, 15 g, 22.5 g or 30 g) was applied to each container after at least one standing leave had grown up in June and July. The number of floating leaves, standing leaves, and flowers were counted each week. At the end of the experiment, lotus tubers were harvested from each container. Number of leaves reached the peak in August and died out toward the end of September. Production of lotus tuber was higher for containers supplied with the initial 30 g fertilizer but with no additional fertilizer application. Than those with additional fertilizer applications. Containers without the initial supply of 30 g fertilizer tended to have higher yield of tubers. These results suggest that initial supply of fertilizer to the containers may support tuber production without the need of later addition of fertilizers during the growing season.