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Growth Performance of Lotus Plants Started With the Same Number of Growing Tips Together or Separated in Containers

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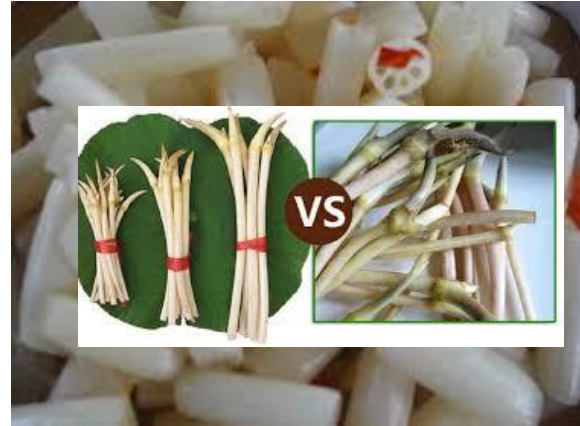
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Introduction

Lotus tubers are considered valuable food products in China and other Asian countries.



Introduction



Lotus roots can be used to make delicious soups and many other treats



Lotus industry in China

>\$1,000,000,000 value

>1,000,000 acres



Lotus in Kentucky

- Growing demand from Asian immigrants
- Potential interest from local population
- Imports from other states and countries
- Prices range from \$2-\$4/lb.
- Quality is poor due to long holding times for transportation and storage



Lotus in Kentucky

- KY production can meet local demands and supply to customers in Chicago, New York, Boston, and other cities where the Asian population is large and lotus production is limited by cold weather
- Kentucky climate supports lotus growth in ponds and containers.



Starting Lotus from Lotus Seeds or Seed Lotus

- Lotus seeds can be used to start new lotus plants but the resulting plants may be different from the plants that produced the seeds;
- Using Lotus tubers can produce new lotus plants that will have the same genetic characteristics of the starting lotus tubers;
- Each lotus tuber has multiple nodes with a main growing tip and each node may have a branch with a separate growing tip;
- Using tips of the branch may help to increase the number of seed materials to expand production and reduce the lotus tubers needed to be used for propagation;
- It is not clear whether the growth performance will be different among plants started from different parts of lotus tubers



Objective

To determine the growth performance of lotus plants started with either a branch lotus with 3 tips or 3 tips cut off a branch lotus in containers.



Materials and Methods

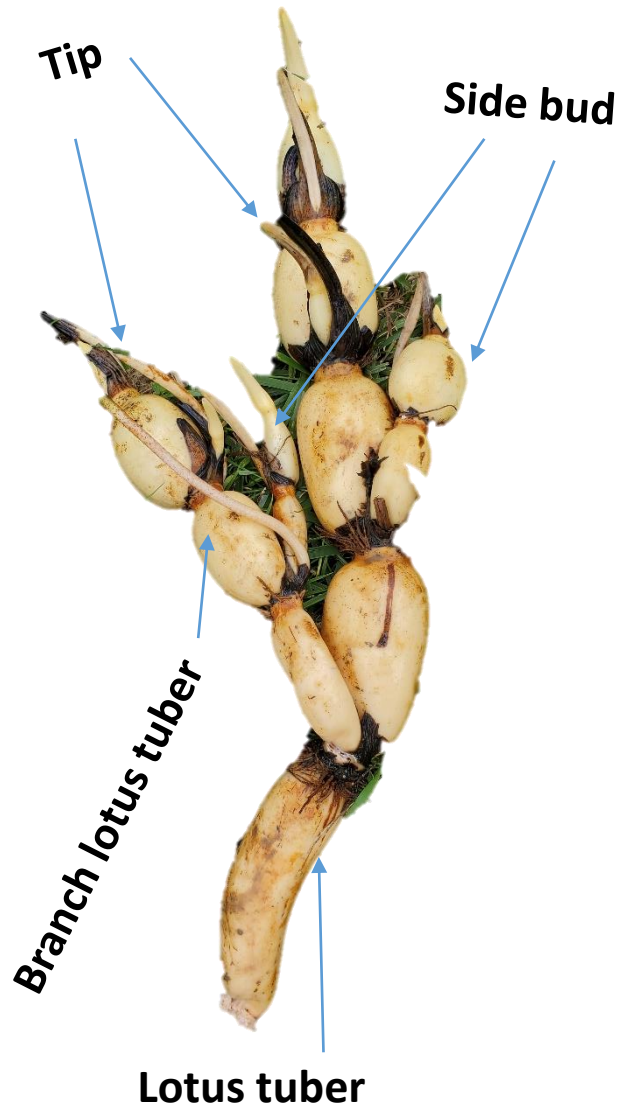
- 8 plastic containers (18-gallon volume) were filled with garden soil to 40 cm deep;
- Rain water collected from a barn roof was added to cover the soil to a depth 10 cm below the rim of the containers.



Materials and Methods

- 4 containers were planted with a branch lotus with 3 nodes each and each of 4 additional containers was planted with 3 growing tips cut off another branch lotus. Two containers of each group was started with 20 g of 10-10-10 for vegetables in the center of the container;
- Each container was fertilized with 6 g of 10-10-10 for vegetables from Southern State Cooperative monthly;
- The number of floating leaves, standing leaves, flower and seed pods were counted each week.
- Tubers were harvested in the end of Oct. 2021.





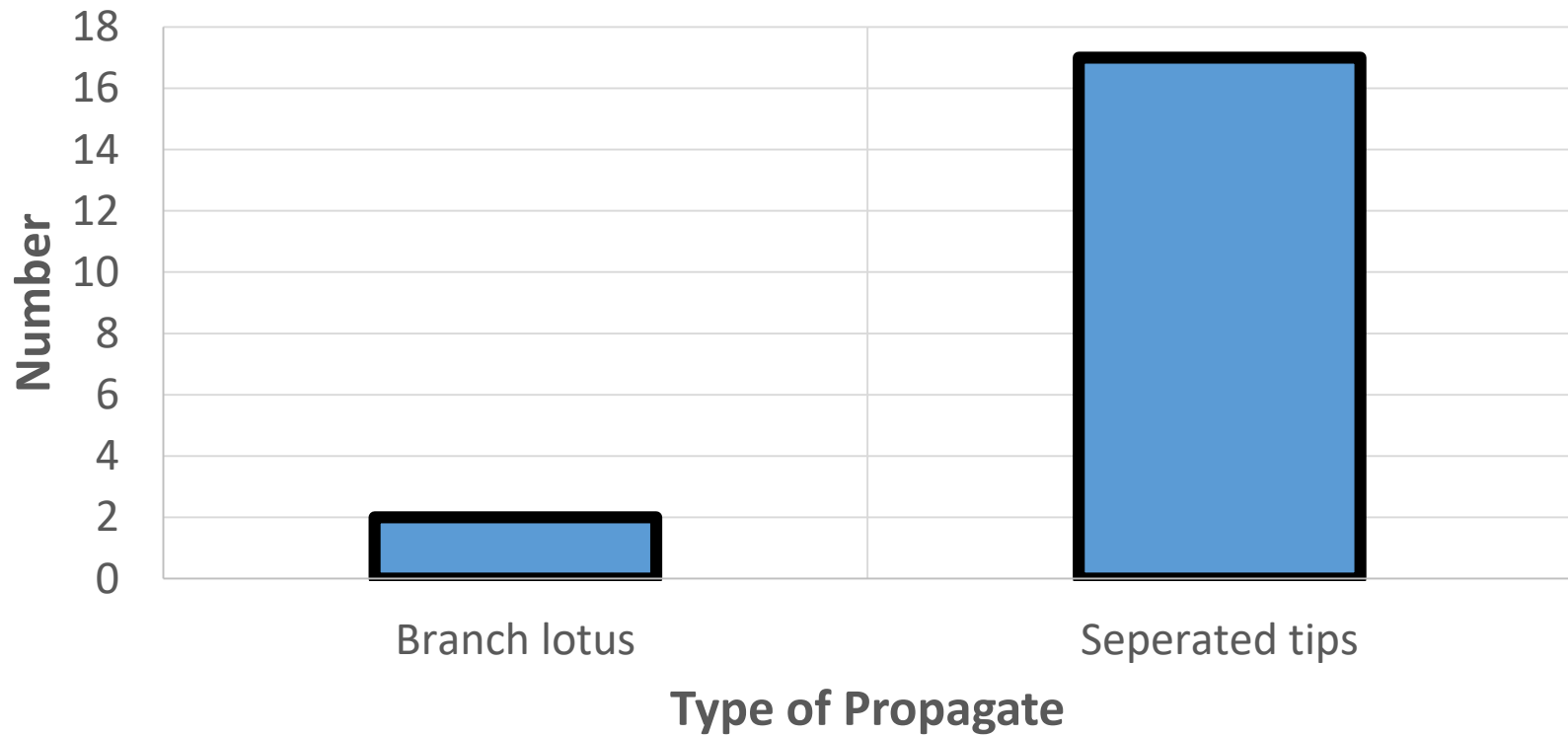
Parts of lotus used as propagates



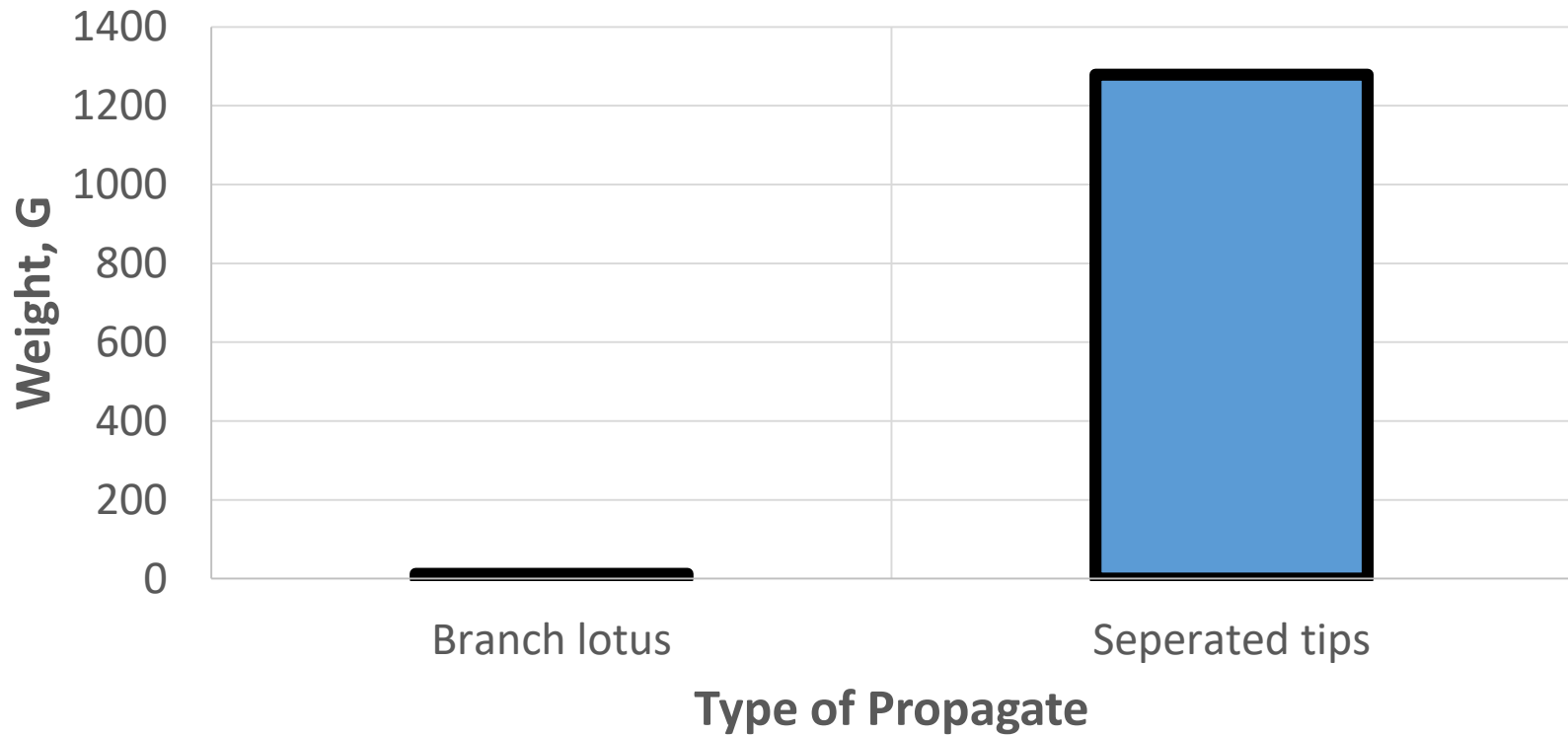
Results



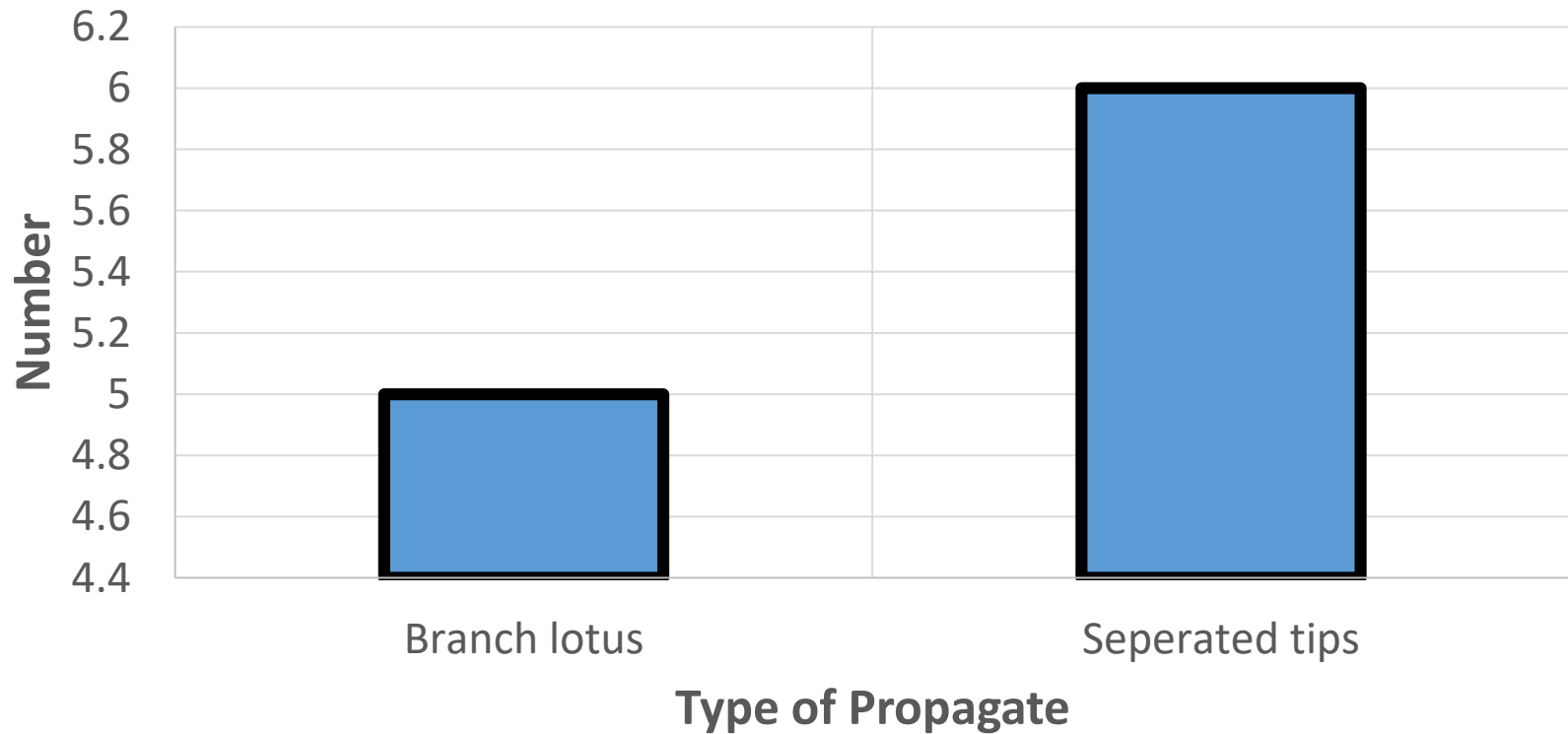
Number of Standing Leaves at the Peak of Growth



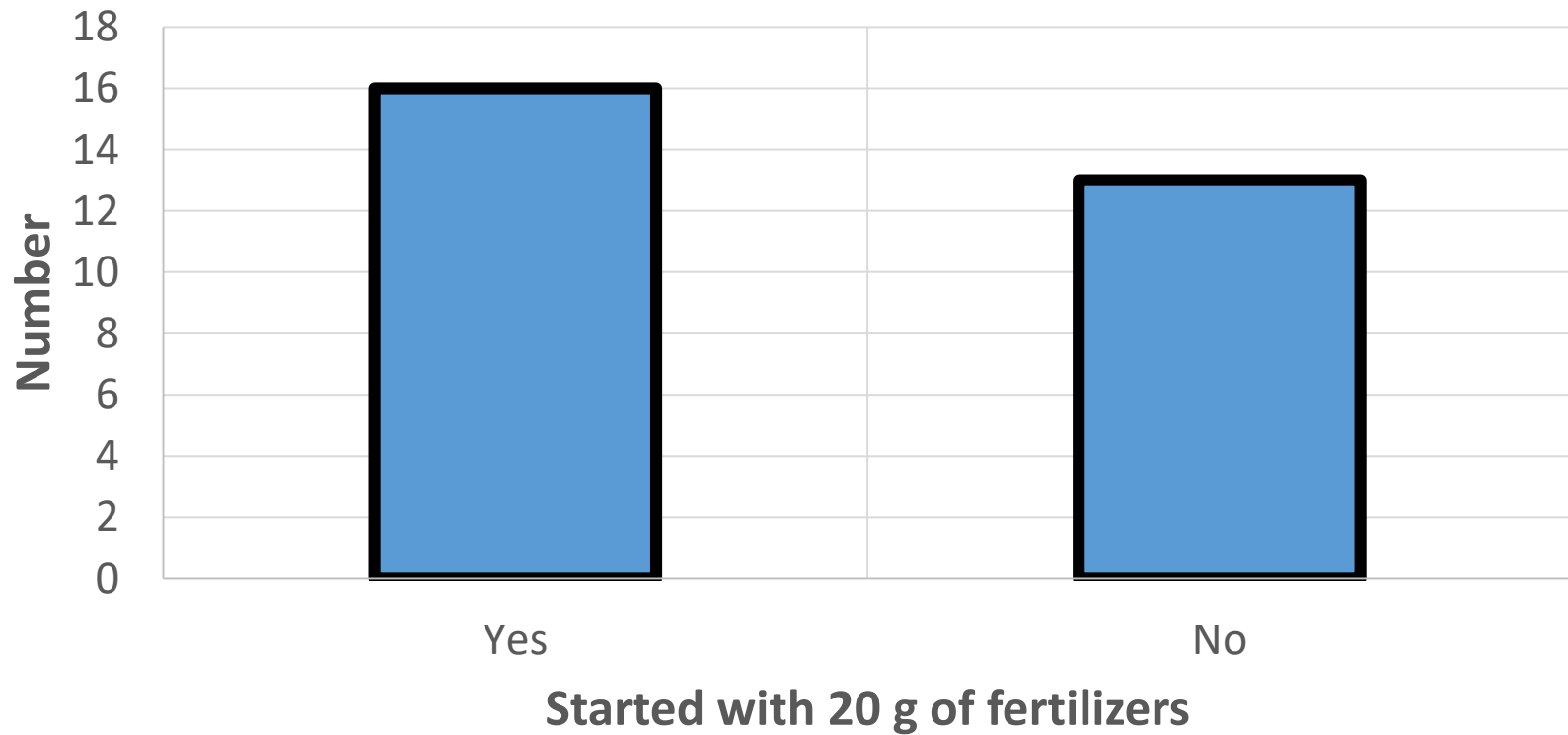
Weight of Harvested Tubers



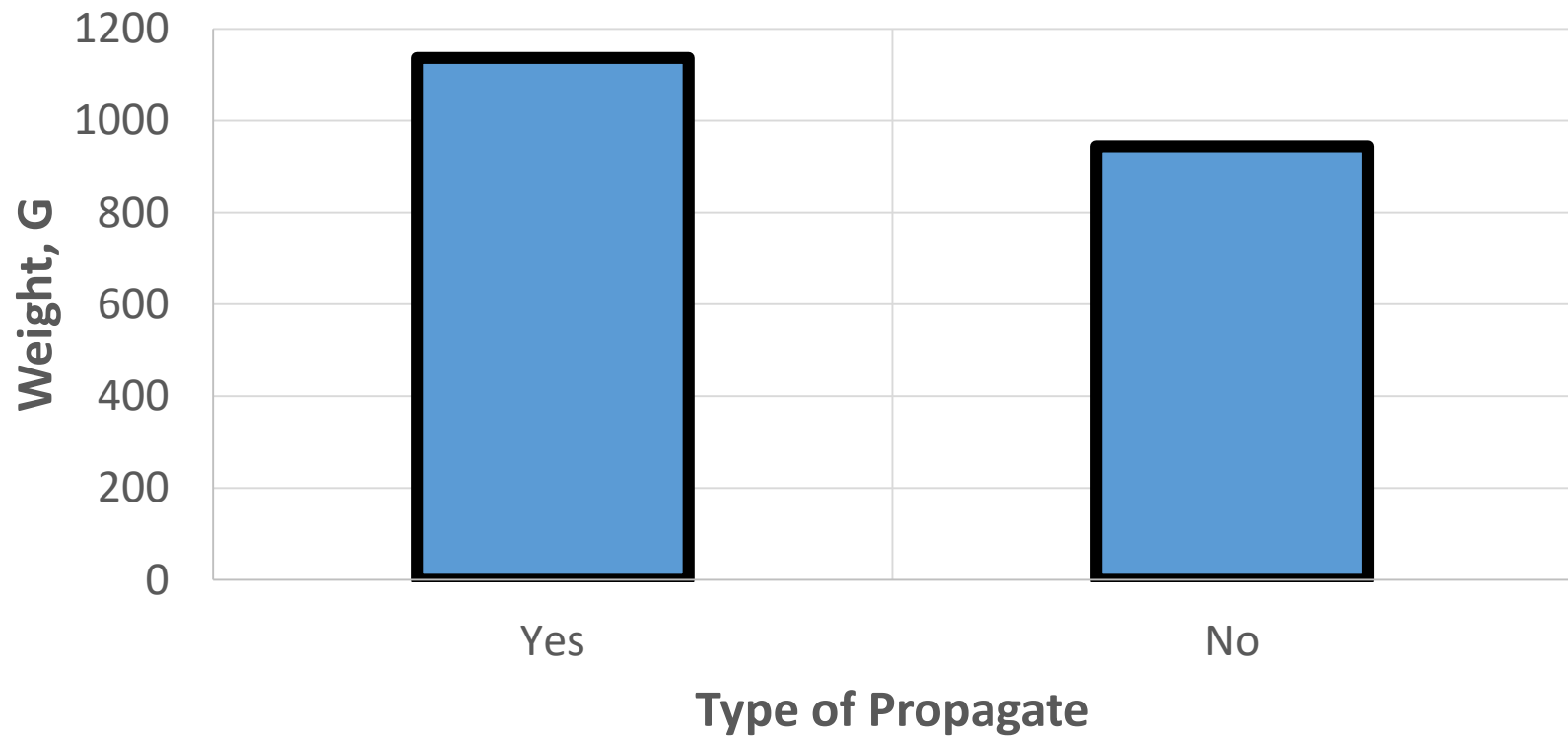
Number of Propagates Produced



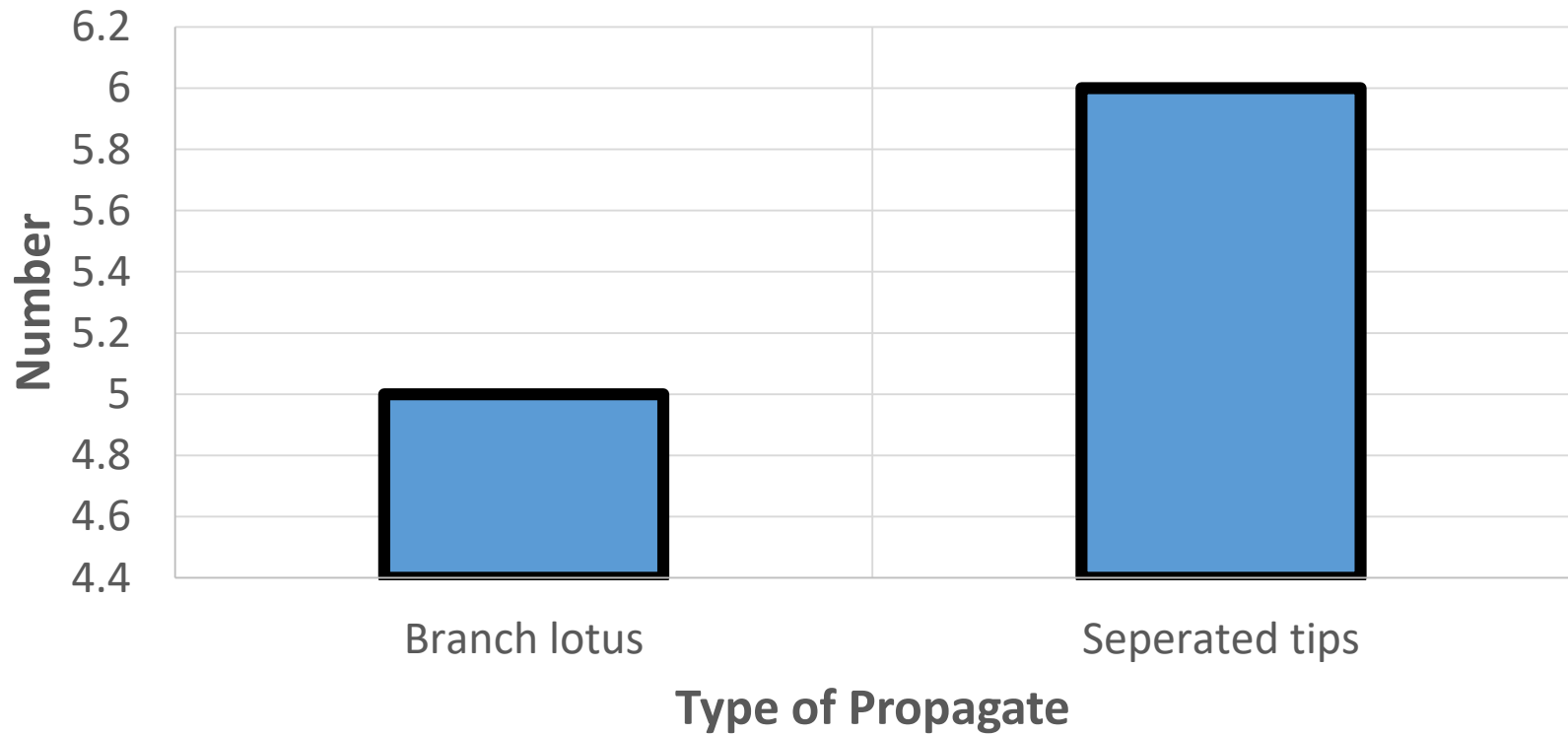
Number of Standing Leaves at the Peak of Growth



Weight of Harvested Tubers



Number of Propagates Produced



Summary

- These results suggest that growth tips cut off the original lotus tuber grew better than growth tips not cut off the original lotus tuber.
- Including some granular fertilizers at the planting time helped lotus plant grow during the growing season.

