

Spotlight on Agriculture

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Maintain Sweetpotato Planting Materials: **CYCLES OF A NURSERY**



Sweetpotato is a popular crop among farmers and consumers of Northern Namibia. With the identification of sweetpotato varieties suitable for production in northern Namibia through the Root Crops Research Project, production under dryland conditions has become a reliable option. The demand for planting materials among farmers has risen annually since the availability of suitable varieties has become known. Planting materials of recommended varieties are currently maintained and multiplied at the primary nurseries on Research Stations. Nurseries serve to maintain planting materials through the cold season and then supply cuttings for production plantings.

The primary nurseries at



Research Stations are however not within reach of all interested farmers. Sweetpotato planting materials are also not suitable for transport over long distances and time. The need for the establishment of smaller secondary nurseries throughout the production area therefore becomes apparent. Such secondary nurseries can be maintained at any site where there are irrigation facilities for a small garden, such as Agricultural Development

Centres, or along the border rivers. Small nurseries throughout the production area aim at the ability of agriculturists to supply themselves and others with high-quality planting materials and be less dependent on cuttings from nurseries at Research Stations.



Due to Namibia's harsh agro-ecological conditions and the unique growth characteristics of sweetpotato, a specialised nursery maintenance cycle has to be followed. The cycle ensures that planting materials are maintained through the dry winter months and kept in a 'young' state which in turn optimises their production potential. The nursery cycle consists of three steps: production, winter nursery and summer nursery. The main functions of the respective steps in the cycle are production, possibly rainfed, on the field, maintenance of planting materials through the dry season in the winter nursery and multiplication of planting materials in the summer nursery.

PRODUCTION

The rainy season generally starts in December and may stretch to April. The normal time to plant rainfed sweetpotato is therefore December/January. Planting materials for production fields should be available from a nearby summer nursery.

MULTIPLICATION IN SPRING

Summer nurseries should be established at such time that cuttings from two - three-month old plants can be supplied at the beginning of the rainy season. The optimal time therefore to establish a summer nursery would be September. Those areas in northern Namibia where minimum temperatures of 20°C are reached earlier than in the southern areas after the winter are suitable for multiplication of planting materials in a summer nursery. Since one plant will give approximately eight cuttings at two months after planting, the size of the summer nursery needs to be only 1/8 of the planned size of the production field. Planting materials for the summer nursery are in turn taken from the winter nursery.

MAINTENANCE THROUGH THE WINTER

Sweetpotato grows and produces best at temperatures between 21 and 28°C. A minimum temperature of more than 20°C is required during days and nights for active growth. Although plants will survive at lower temperatures, their growth is very slow during the winter months. As sweetpotato is sensitive to frost, a light frost can destroy the foliage; the roots will however remain intact. Newly established plantings will not recover from frost, while well-established plantings will normally start to re-grow a few days after the frost damage has occurred. Therefore, in areas where there is a possibility of frost occurrence, winter nurseries have to be established at least two months before the coldest winter months. The size of the winter nursery in turn has to be only 1/8 of the summer nursery. This means that the winter nursery can be very small and needs only little water. Through multiplication in the summer nursery, large quantities of planting materials can however again be produced for production purposes.

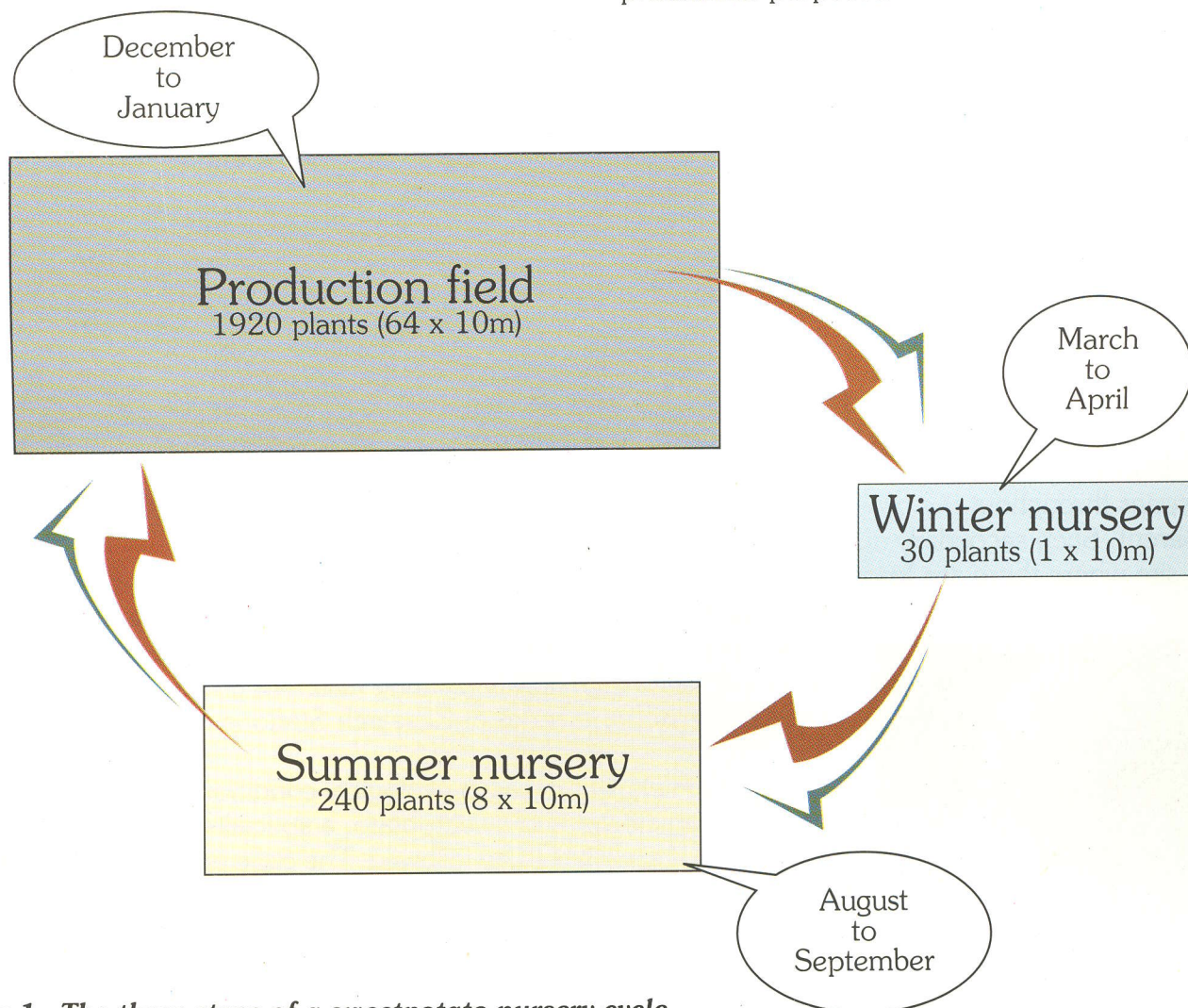


Fig. 1. The three steps of a sweetpotato nursery cycle. The ideal times of planting and relative sizes are indicated.