Sweetpotato: Slip Production

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Synopsis:
Slip production is the foremost primary step for successful sweetpotato production. This fact sheet provides a step-by-step process for successful slip production on a small scale.

Vegetable Horticulture Program:
Our program focuses on sustainable production systems and includes a wide range of projects such as screening new crops and breeding lines for suitability for production in Western Washington, testing new products such as soil-biodegradable mulch, and assessing production practices such as vegetable grafting.

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Sweetpotato production is limited in northern regions due to the perceived barriers of a short growing season and relatively cool summer temperatures. Yet, recent studies have shown sweetpotatoes grown with plastic mulch in northern regions produced greater yield than the national average (11 tons/acre) due to the longer photoperiod during the growing season. Thus, in areas such as Mount Vernon, WA where day length is 16 h on average in June and July, rapid growth during establishment of healthy transplants likely contributes to higher yields. In a preliminary study at Northwestern Washington Research and Extension Center, Mount Vernon, WA, the yield of some sweetpotato accessions ranged from 14-26 tons/acre in 2020. The keys to successful production are suitable cultivars, healthy slips, planting into warm soil, appropriate plant spacing, and maintaining warm soil throughout the growing season.

Slip Production

Sweetpotatoes are planted using slips, which are the plantlets that sprout from sweetpotato storage roots. Slip production is relatively easy and can be done on a small or large scale. One

Fig. 1. Slips growing from sweetpotato storage roots.

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sweetpotato storage root can produce about 20-40 slips depending upon the time you allow for growth (Fig. 1).

Slips are shoots with roots that are pulled from roots while vine cuttings are cut 1 to 2 inches above the soil line and have no roots (Fig. 2). Cuttings are more preferred for planting as the risk of soil-borne disease transfer is reduced. In this publication, we refer to cuttings as slips.

Fig. 2. Sweetpotato slips with roots (left) and cuttings without roots (right).

<u>For small-scale slip production</u>:

- Fill a flat with potting mix; add complete fertilizer @ 1 tablespoon per flat if not included in the potting mix
- Allow soil to warm prior to adding roots; temperature 80-85 °F is best for sprouting, can place flat on a heating mat
- Place roots in the flat without touching, lightly cover with potting mix
- Slightly moisten potting mix, do not overwater
- Cover flat with clear plastic box/dome but maintain ventilation
- Water flat to keep the potting mix moist
- Sprouting usually begins after 3 weeks
- When the slips are 8-12 inches long and have 4-8 leaves, cut the slip ½ to 1 inch above the storage root
- Slips can be planted immediately or held 2 -4 days at 57-64 °F before transplanting which will initiate root development and help the slips root faster. Slips can be held either vertical or horizontal and should be in the shade. Don't cut the plants when they are wet and make sure they are not packed too tight or there may be some rot from lack of oxygen. Don't stack slip boxes in a way that restricts air.
- Transplanting is most effective when soil temperatures are at 65 °F at a 4-inch depth for 4 days in a row

Number of slips required per 20 row feet:

- 12 inches in-row spacing: **20** slips
- 15 inches in-row spacing: **16** slips

Fig. 3. Overview of sweetpotato slip production.