

# Sweetpotato: Curing and Storage

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## Synopsis:

Curing sets the skin, heals wounds and bruises, and enhances flavor. Proper curing is required for successful storage of sweetpotatoes.

## 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.

## Curing

Only properly cured sweetpotatoes can be stored successfully. Curing is a wound-healing process where a protective cork layer is formed over the root surface. As this layer forms, a waxy material 'suberin' is produced by the root's outer cells and is deposited on the root surface. The cork layer and suberin combined act as a barrier to microorganisms and excessive moisture loss. Curing enhances flavor as starch gets converted to sugar during this process.



Fig. 1. Setting up a curing chamber for sweetpotatoes.

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For small-scale growers, sweetpotatoes can be cured as following:

1. Set up a curing chamber:
  - A curing chamber can be made with a PVC pipe frame covered with clear plastic and set on a bench in the greenhouse
  - Do not cover the chamber tightly with plastic, leave a gap at the bottom to allow air circulation, as shown in Fig. 1
  - Place a humidifier inside the chamber to maintain humidity at 80-90%
2. Prepare the sweetpotato roots for curing:
  - Start curing the same day as harvest
  - Allow the sweetpotato surface to dry then shake or brush off any soil
  - Do not wash the roots
  - Place sweetpotatoes in plastic crates to place in curing chamber (Fig. 2)
3. Ideal conditions for curing sweetpotatoes:
  - Maintain 80-90 °F temperature, 80-90% relative humidity, and proper ventilation
  - Place kraft paper over the top of the crates to absorb any moisture and to prevent water condensation on roots (Fig. 3)
  - With these conditions, sweetpotatoes can be cured in 7 to 10 days
  - These exact conditions are hard to establish at home, so select a site that comes close to these conditions and cure for longer (2-3 weeks). Properly cured sweetpotatoes will feel firm

## Storage

- Properly cured sweetpotatoes can be stored for six months or more
- After curing is complete, sweetpotatoes should be stored at 55-60 °F temperature and 80-90% relative humidity (Fig. 4)
- Remove plastic covering from the PVC frame that was used for curing and cover the frame with black fabric
- Below 55 °F, chilling injury occurs while above 60 °F, sprouting occurs
- At home, cured sweetpotatoes can be wrapped in newspaper or a paper bag and stored in a cool closet or unheated storage room or garage



Fig. 2. Sweetpotatoes in plastic crates ready to go into curing chamber.



Fig. 3. Sweetpotato crates covered with kraft paper to prevent water condensation on root surface.



Fig. 4. Storage of sweetpotato on a bench in the greenhouse.