

# Sweetpotato: Production Practices

vegetables.wsu.edu

February 2022

## Authors:

Srijana Shrestha<sup>1</sup>  
Carol Miles<sup>1</sup>

<sup>1</sup>Washington State University

## Synopsis:

Sweetpotato production is limited in northern regions due to the perceived barriers of a short growing season and relatively cool summer temperatures. However, sweetpotatoes can be grown using black plastic mulch. This fact sheet provides general guidelines for sweetpotato production in this region.

## 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.

This material is based upon work that is supported by U.S. Department of Agriculture, National Institute of Food and Agriculture Hatch Project 1017286. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and are not meant to endorse any businesses or detract from any not listed.



Northwestern Washington Research and Extension Center

Sweetpotato (*Ipomoea batatas*) is one of the most nutritious root crops and ranks seventh in world food production after wheat, rice, maize, potato, barley, and cassava. In the United States, national average yield of sweetpotato in 2018 was 11 tons/acre and commercial production is concentrated in the warmer states such as North Carolina, Louisiana, California, Arkansas, Florida, and Mississippi. Sweetpotato production in the northern United States is limited due to the perceived barriers of a short growing season and relatively cool summer temperatures. Yet, recent studies have shown yield in northern regions can be greater than the national average when sweetpotatoes are grown with plastic mulch. Sweetpotato requires 90-120 frost-free days to grow and planting when soil temperature is  $\geq 65$  °F.

In a cultivar trial in Pennsylvania where all the entries were grown with black polyethylene (PE) mulch, the total marketable yields of the highest yielding sweetpotato cultivars ranged from 14-18 tons/acre (Duque, 2020). In another cultivar trial grown with black PE mulch in the cool climate and short growing season of Quebec, Canada, sweetpotatoes produced 11 tons/acre marketable yield (Wees et al., 2016). Similarly, in a sweetpotato cultivar trial grown with black biode-



Fig. 1. Sweetpotato production at WSU NWREC, Mount Vernon, WA in 2020.

gradable plastic mulch (BDM) in New Hampshire, the highest-yielding cultivars included Covington and Beauregard that produced marketable yields ranging from 13-22 tons/acre (Sideman, 2015).

The establishment stage of sweetpotato is the first 4 weeks after planting and is considered the most critical phase in the growing cycle because plant development during this time largely determines later plant growth and yield. Sweetpotato yields have the potential to be high in northern latitude regions due to the longer photoperiod during the growing season that increases growth of the storage roots. Thus, at high latitudes such as Mount Vernon 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, the yield of some sweetpotato accessions ranged from 14-26 tons/acre in 2020 (Fig. 1).

### **General field production methods in northwest Washington:**

**Spacing:** 12-15 inches between plants in a row.

**Plastic mulch:** Cover the bed with black plastic mulch to warm the soil and control weeds (Fig. 2).

**Fertilizer:** Apply several days before transplanting at the rate of 100 lb N per acre; that is, for each 20 feet of row, place ½ pound of 10-20-10 fertilizer evenly over the bed and incorporate into top 2-4 inches of soil.

**Irrigation:** First, measure the amount of time it takes to wet the soil to a depth of 6 inches in your garden/field. When the top 1-2 inches of soil is dry, irrigate for that specific amount of time to keep the soil moist up to 6 inches depth. Do not wet soil too much as this can cause root rot. Stop irrigation 1 week prior to harvest.

**Harvest:** Any time after storage roots are large enough, usually 90-120 days after transplanting. Use a shovel or fork for digging (Fig. 3). Minimize skinning and bruising the sweetpotatoes during harvesting (Fig. 4). Do not leave sweetpotatoes exposed to sun for more than 1 hour.



Fig. 2. Sweetpotato plants grown with black plastic mulch.



Fig. 3. Harvesting sweetpotato with a shovel.



Fig. 4. Harvested sweetpotatoes.