

# MEASURE AND MANAGE

## Sweet Potato Fertility Guide

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Soil testing is essential to determine fertility requirements. Sweet potato is a relatively heavy feeder of nutrients.

### pH

Optimum pH is 5.8 to 6.0. Liming maybe necessary on soils testing below 5.8 Use the buffer pH and AgIndex of the lime to determine the rates. The adjustment to pH is best done in the rotation crop a year ahead of time. This allows sufficient time for pH correction to occur. Fine lime may react in one month coarse lime may take a year or more.

### Phosphorus and Potassium Requirements (lbs actual per acre)

Rating	Low	Medium	High	Very High
Phosphorus	<b>180</b> <20 ppm	<b>120</b> 20 – 40 ppm	<b>60</b> 40 -60 ppm	<b>30</b> 60+ ppm
Potassium	<b>180</b> < 80 ppm	<b>120</b> 80-- 100 ppm	<b>60</b> 100 - 150 ppm	<b>30</b> 150+ ppm

Actual K rates may vary on Agri-Food Laboratories soil reports by CEC and determination of Target K and build factors.

A transplanting fertilizer is recommended such as 10-34-0 - 1 gallon in 150 gallons of water. Banding of the phosphorus fertilizer in bands 3 inches to the side and 3 inches below the roots is more effective than broadcasting. One half to two thirds of the potassium should also be banded or incorporated into the bed before planting. The remaining potassium (and Nitrogen see N recs\*) can be applied sidedress after the vines are 12 inches long ideally positioning a band on either side of the row. Additional potassium may be needed on sandy soils if leaching rains are experienced shortly after sidedress time.

### Magnesium, Sulphur, Zinc, Manganese, Boron

Soil tests will determine the need. Use the **Agri-Food Laboratories Complete Package plus Sulphur option.**

If the pH is low and magnesium is low; likely in sandy soil - use dolomitic limestone. If the pH is acceptable and the magnesium is low or the K:Mg ratio is high an application of 25 lbs of Magnesium from KMag or magnesium sulphate may be required. If sulphur is low, usually 10 lbs of sulphur is sufficient. Boron rates are typically 1 lb actual per acre. Zinc at rates of up to 5 lbs actual and manganese at 5 to 8 lbs depending on pH. If the pH > 5.6 use up to 8 lbs actual per acre.

**\*Nitrogen Rates**

Application rates of actual N range from 60 to 100 lbs per acre. One half to two thirds of the N should be applied in the band with the P and K. The balance can be applied with the sidedress banded potassium. If heavy leaching rains (> 2 inch rains) on sandy soil occurs after banding an additional application of 30 to 40 lbs actual N *may be* necessary.

Appropriate credits of N are necessary, especially if manure has been used. It is not advisable to follow alfalfa or clover in the rotation with sweet potatoes because of the risk of excessive N release which may lead to cracks, reduced quality and marketable yield.

**Plant Tissue Analysis**

Submitting the most recently mature leaf from 25 to 30 plants may be useful in assessing the merits of your fertilizer program. The following ranges at mid growth offer guidelines as to where the nutrient profile should fit.

<b>Nutrient</b>	<b>Range %</b>
Nitrogen	3.3 to 4.50
Phosphorus	0.23 to 0.50
Potassium	3.1 to 4.5
Calcium	0.70 to 1.20
Magnesium	0.35 to 1.00
<b>Micronutrients</b>	<b>ppm</b>
Zinc	20 to 50
Manganese	40 to 250
Copper	5 to 10
Iron	40 to 100
Boron	25 to 75

Assessment of the results in a holistic approach including variety, weather, irrigation, weather conditions at time of sampling, and management factors may help to determine nutrient modifications to the fertility program both in season and long term.

The information is intended as guidelines. Modifications are necessary based on experience, soil type, weather conditions and other site characteristics. A planned thoughtful approach a year ahead allows time to make necessary adjustments to assure success.