

Growing potatoes in towers – Cindy Wise LCMGA

Growing potatoes in “towers” or structures designed to accommodate layers of growth, is a popular Internet and garden site recommendation. The allure of getting pounds of potatoes in a small space leads people to try this technique.

The process as described is simple: build a structure (wood, wire, a pot, etc) plant potatoes in the bottom, keep watered and fertilized, add soil as the plant grows and voila! Potato bounty!

The reality is often disappointing.



Potatoes originated in South America and breeding has resulted in hundreds of varieties that grow all over the world. There are early, mid and late season varieties that grow in almost every climate.

How potatoes grow

Seed pieces will produce a main shoot one to two weeks after planting. Rhizomes (a horizontal stem) begin to grow on the underground shoot at about the same time so it is important to plant deep enough (at least 6 inches) to allow for the rhizome development. Rhizomes grow horizontally and thicken at the tip to form a tuber.

Tubers form between 5-7 weeks after planting and occur at about the same time as flower formation. But some varieties never flower. The developing tuber competes with leaves and shoots for nutrients so it is important to supply adequate moisture and fertilizer during the tuber development and growth period.

Some potatoes make 5 or 6 close set rhizomes off the main stem which terminate in tubers that can be large because there are so few of them.

Other varieties grow over a longer season and can set potatoes further up the stem by producing new rhizomes typically up to a foot above the first rhizomes that form. These tend to produce relatively large potatoes and quite a few smaller ones.

Potatoes are a cool season vegetable but are sensitive to hard frosts. Cool, moist conditions favor the period when tubers are forming. The optimal range for shoot emergence is daytime temperatures of 68F-72F. The optimal range for tuber formation is mid 50F at night. Above 68F night temperatures tuber set is reduced and above 84F it is inhibited.

What does this all mean?

For growers in the Willamette valley daytime temperatures between 55F- 60F are the best time to plant. In the Eugene/Springfield area this translates to late March-early April when average daytime temperatures are between 55F-60F and night lows are between 36F-39F. Rainfall at this time of year averages between 2”-2.5” per month. This ensures an adequate moisture supply but planting in raised rows or raised beds is recommended to avoid rotting. You can cover the ground with plastic for a couple of weeks before planting to warm the soil and encourage it to drain well. Also consider covering the emerging plants with a row cover (either Remay or plastic) especially at night. This will help to protect against insect attacks as well as late frosts.

Choose a variety suited to growing locally for best results. For growing in towers choose a mid to late season variety (90-130 days or more.) Late season varieties continue to send out rhizomes and form their tubers later so you get the “layered” effect in a tower. But this also means you need to pay very close attention to the watering and fertilizing needs of the plant during the July-August higher temperatures. The wet/dry cycle of watering produces bumpy tuber formation. Potatoes like even, consistent moisture.

Watch for certified seed potatoes for sale at local garden centers. One pound of large potato seed stock may produce a yield of up to 10 pounds. One pound of fingerling potato seed stock may yield up to 20 pounds.

Cut the seed potato into egg sized pieces with at least three or more eyes per piece. Allow the cut side to seal over (it will have a smooth, dry surface) then plant in well amended, well drained soil. If planting in a tower or pot place 6 "of soil in the bottom then cover the seed pieces with 6" or more of soil. Space the seed pieces 12" apart. As the plant grows pile more well amended soil around the stem leaving the top 6" of the plant exposed. If planting in a wire bin you need to pile straw, leaves or sheets of newspaper around the edges to keep the soil from falling through the sides. Try to keep the tower no higher than 2'-3' as taller towers are difficult to keep evenly watered. Plants dry out more rapidly in the tower or pot method so it is important to monitor the watering closely.

Potatoes will do better in slightly acid soils around 6 pH. You may fertilize every two-three weeks with a balanced granular or liquid emulsion fertilizer. (NPK numbers roughly the same like 4-6-6.)

Harvest potatoes after the tops have died down. Dust the soil from the skins with hands and store in a cool, dry place.

Potatoes are broadly grouped according to the average number of days needed to reach maturity (when tubers reach an edible size.) Different growers will use different classifications. Here are a few:

- * Very early earlies (early, early summer) -- 75 days
- * Early (early summer) -- 90 days
- * Mid or maincrop—(mid-summer) -- 110 days
- * Maincrop to late maincrop (summer into autumn) -- 135-160 days

Varieties
(H-heirloom F-fingerling))

Mid – late season 80-100 days	Late season	Days to maturity
All Red	Russian Banana (F)	100-120
Catalina (true seed)	Bintje (H)	100-120
Chieftain	Butte	100-120
French Fingerling	Canela Russet	90-120
Gold Rush	Carola	90-120
Ida Rose	Desiree	95-100
Kerrs Pink (H)	Fingerling Salad	100-120
Kennebec	Green Mountain (H)	100-120
Purple Viking	German Butterball	100-120
Red Sangre	King Harry (H)	100-135
Rose Finn Apple	Purple Peruvian	110-135
Russet Burbank	Russet Norkotah	95-110
Yukon Gem	Yellow Finn	95-100

Sources

- Washington State: <http://potatoes.wsu.edu/varieties/blue-purp-vars.htm>
 Oregon State: <http://oregonstate.edu/potatoes/variety.htm>
 *Cornell Extension: <http://vegvariety.cce.cornell.edu/index.php> (extensive list)

Online sources of certified seed potatoes

- Seed Savers Exchange <http://www.seedsavers.org/>
 Johnny's Select Seeds <http://www.johnnyseeds.com/>
 Gurney's <http://www.gurneys.com/>
 Irish Eyes Seed <http://www.irisheyesgardenseeds.com/index.php>
 Heirloom Acres Seed <http://www.heirloomacresseeds.com/>
 Eagle Creek Seed Potatoes <http://www.seedpotatoes.ca/index.htm>

Certified seed can also be purchased at local garden centers. Call for dates of arrival. Seed potatoes usually arrive too early for planting so need to be held until the time is right.