

POTATO

Production Principles and Tips

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Planting

1. Potatoes are normally propagated vegetatively. Tubers are cut into 1 1/2-2 oz. seed pieces (approximately ten seed pieces per pound of tubers). Each seed piece must have at least one eye.
2. Planting can be accomplished at various times, depending on location and climate:
 - Lower San Joaquin Valley - December to March, July to August
 - Stockton Delta - February to March, July to August
 - Sacramento Valley - February to March, July to August
 - Mountain Valleys - May
 - North Coast - April to June
 - Central Coast - March to June
 - Southern California – November to March, July to August
3. Potatoes can be affected by numerous viruses and other seed-borne diseases. Plant only certified seed.
4. Planting can be made into beds or on the flat, and then a bed made by throwing soil over the plants as they emerge; a final ridge-bed approximately 12 inches high should result. Row spacing can be 30 to 40 inches apart.
5. Spacing between seed pieces will depend on variety, age of seed, number of eyes per seed piece, and desired tuber size at harvest. A range of six to twelve inches is common. Thus, 1500 to 3000 lbs. of seed potatoes is needed to plant each acre.
6. Seed tubers should be warm (50-70°F) before cutting. If planting into warm soils, seed can be planted immediately. If planting into cool or hot soils, seed should be "suberized" at 50-70°F for two to three days before planting. Ideally, tubers should be just starting to sprout when planted.

Varieties

1. Several types of potato varieties are grown:
 - Russets - For multi-purpose
 - Reds - Mostly boiling or as "new" potatoes
 - Long Whites - Mostly boiling
 - Round Whites - Mostly frying
 - Specialty (yellow flesh, purple or red skin/flesh, others) - Varied uses
2. Current suggested varieties for new growers:
 - Russets - Russet Norkotah, Russet Burbank
 - Reds - Red La Soda, Cherry Red, Mazama, Modoc
 - Long Whites – CalWhite, White Rose
 - Round Whites (Chippers) – Atlantic, Chipeta
 - Specialty -Yukon Gold, Banana, Satina, Rosara
3. Variety selection should be determined by marketing plans.

Culture

1. Potatoes prefer very well-drained soil (e.g., loamy sand, sandy loam, high organic).
2. Potatoes have a shallow, sparse root system. Thus, they require relatively frequent light irrigation and a continual supply of nitrogen.
3. Potatoes are moderate-heavy users of nitrogen, moderate-low users of phosphorus, heavy users of potassium, occasionally need zinc or iron, and are moderately susceptible to high boron. They prefer slightly acid pH.
4. Weeds can be a problem since the soil is shaded only part of the growing season.
5. Potential diseases include Rhizoctonia (damping off), bacterial soft rot, early blight, verticillium wilt, potato leafroll virus, several mosaic viruses. Prevention through seed and site selection, crop rotation and proper soil and water management is the best control.
6. Insect problems can include wireworm, green peach and potato aphids, potato tuber moth.
7. Root knot nematode can seriously affect the tuber quality.
8. Many weed, disease, insect, and nematode problems can be avoided by rotating, planting potatoes in the same soil only once each three to five years.

Harvest and Postharvest

1. Potatoes will reach maturity in 110 to 140 days depending on variety, location and time of planting. Maturity is when vines are dead and skin on tubers is "set."
2. Water and nitrogen requirements decrease as maturity approaches.
3. Harvest can be accomplished when tubers are immature but must be marketed immediately and kept moist and cool.
4. Potatoes bruise easily, thus harvest procedures must be given equally high priority.
5. Ideal storage conditions are 32-34°F and 95% relative humidity. Air movement is desirable to facilitate uniform conditions.

Marketing

1. Marketing plans should be made before crop is planted, not after it is harvested.
2. Potatoes are perishable, bulky and require special storage conditions. Crop must either be marketed at harvest or appropriately stored.
3. Direct marketing opportunities exist, particularly for specialty varieties and organically grown crops.