Chili Peppers

info sheet

Chili Peppers

Chili peppers (*Capsicum annuum*) are a warm season crop that is highly sensitive to frost and requires a long growing period (60-100 days from transplanting depending on variety). Chili pepper fruit can either be harvested at an immature stage (green) or at maturity (generally red). The color change between green and mature fruit can vary between 15 to 35 days. Cooler temperatures can affect flavor, pungency, and color. Chili peppers are sensitive to moisture stress and consistent moisture throughout the growing season is important to maximize quality and yield. Although peppers can be grown in greenhouses, precautions need to be taken against disease development in this environment.

Climate and Soil

Temperature	Frost tolerance	Water needs	Tolerance to waterlogging	Drought tolerance
Optimal Conditions: Day: 23-29°C; Night: 15-20°C Germination: 20-30°C. Pollination: 16-32°C. Impaired Growth: Day <15°C. More tolerant to high temps than other solanaceae (e.g. tomato, eggplant, etc.).	None - sensitive to frost at all growth stages.	Furrow irrigation most common and water requirements range from 7,000 to 12,000 (m^3/ha). A regular water supply improves growth and yield.	Not tolerant. Waterlogged plants will defoliate and suffer from root diseases, especially *Phytophthora capsici*	Medium. Deep tap root reduces impact. but moisture stress at pollination can result in poor fruit set and quality, and at early fruit growth induces blossom-end rot

Humidity tolerance	Wind tolerance	Soil needs	Nutrient requirements
Low – leaf foliar diseases will rapidly develop in warm and wet environmental conditions.	Fair to poor.	Well drained soils. *Sandy*: earlier planting and quicker yields, *Medium texture*: later planting but often more productive	Rates depend on soil test results: **N**: High, from 100 up to 280 kg/ha **P**: Moderate to high: 90 to 224 kg/ha P_20_5 **K**: Typically not limiting, but if needed: 56 to 168 kg/ha K_20

Production, Harvest and Postharvest Practices

Planting	Usually transplanted in spring. Row covers can protect seedlings from pests and temperature variation. Direct seeding is uncommon, but possible with adequate soil temperature and moisture. Although mulches with drip irrigation will drastically improve yields and reduce weed problems, most is produced using furrow irrigation
Varieties	Many types and varieties. Mostly self or open-pollinated. Landraces are commonly used. Varieties differ in shape, color, pungency, flavor and tolerance to growing conditions.
Spacing	Transplant or direct seed on raised beds with single or double rows, having 30-45 cm spacing between plants. Single rows: about 75 cm apart. Double rows: beds about 150 cm apart with rows on each bed 60-100 cm apart. Each system provides approx. 25,000-45,000 plants/ha
Site selection and Field Preparation	Slightly sloped field is best to achieve most efficient use of furrow irrigation water. Till to develop best seed bed prior to planting. Soil pH: 6.0-6.8
Time to harvest	Depends on variety. 50 - 100 days after transplanting.
Length of harvest	Depends on variety and desired harvest. Many varieties are grown exclusively for green fruit, while others are grown for mature color only. About 1-3 harvests per week for 3-6 weeks.
Expected yields	2-5 t/ha, depending on variety. World average: 9 t/ha
Harvest	Hand harvest by cutting fruit stem. Fresh market: Cool down immediately after harvest to 7.5-10°C if possible and provide high relative humidity. Cooling to any lower temperature will improve longevity. Processed: Fruit allowed to stay on plant until dry or harvested at mature stage and sun dried (e.g., dehydrated fruit, powder, flakes, etc.).
Storage	2-5 weeks. Shelf life varies between varieties and storage temperature and humidity conditions. Deterioration often results from moisture loss. Subject to chilling injury below 5°C.
Pests and diseases	Weeds, insects, nematode, and viral/fungal/bacterial diseases are all problematic

Prepared by Alan Walters (Southern Illinois University) and Curran Hughes (UC Davis) 2012.

References: Rubatzky, V. and M. Yamaguchi. 1997. World vegetables: principles, production and nutritive values. Second edition. Chapman & Hall. New York, NY.
Chile Pepper: Vegetable Research and Information Center: http://vric.ucdavis.edu/veg_info_crop/pepper_chile.htm

For more information visit: http://ip.ucdavis.edu

Copyright © UC Regents Davis campus, 2012. All Rights Reserved.