ECHO Asia Seed Fact Sheet

Scientific name – *Capsicum frutescens*

English common name – chili pepper

Asian common names – (from Multilingual Multiscript Plant Name Database http://www.plantnmes.unimelb.edu.au/Sorting/Capsicum_frutescen s.html) -

- Burmese: nga yut thee, nil thee
- Chinese: la jiao, mi jiao, ye la zi, ye jiao zi
- Hindi: मिर्च mirch, लाल मिर्च lal mirch, lalmirchi, lankamirchi
- Laotian: mak phe kunsi
- Malay (Indonesia): lombok cabai, cabai merah, cabai rawit
- Malay (Malaysia): cili padi, lada merah, lada mira
- Nepalese: खुर्सानी khursani, रातो खुर्सानी ratô khursani
- Thai: Prik, พริก
- Vietnamese: Ớt

Varieties –

- **Karen:** Hot red peppers, 2-4 cm (0.8-1.6 in) in length
- **Hawaiian:** Milder peppers, 4-6 cm (1.6-2.4 in) in length
- **Tiny hot:** Very hot, very small peppers, 2-3 cm (0.8-1.2 in) in length

General description and special characteristics – *Capsicum frutescens* is a perennial growing to 1 m (3ft 3in) by 0.6 m (2ft). The flowers are hermaphroditic (have both male and female organs). It's believed to have been cultivated in Bolivia and Meso-America as early as the 16th century. This many-branched, shrubby perennial herb produces more fruit and requires less water and fertilizer than the sweet varieties. *C. frutescens* bears fruit that point upward and include varieties such as the Tabasco pepper, the Thai Bird Pepper "Prik Khi-nu," and the Barbados "Wirri-wirri" peppers. *Capsicum frutescens*, which is much more pungent than *Capsicum annuum,* is used in tabasco sauce, and other red chili pepper sauces/pastes. Sweet bell peppers, paprika, jalapenos, pimento, and other red pepper products come from *Capsicum annuum*.

Crop uses (culinary) – Chili peppers can be consumed raw or cooked, whole or minced. They are frequently dried and ground into a powder for use as flavouring. The fruit is up to 7.5cm long and 1cm wide. The seed may also be dried, ground and used as a pepper. Leaves are sometimes cooked as a potherb.

Crop uses (medicinal) – There are many varieties of chili peppers, characterized by the amount of capsaicin they contain in their tissue. When a pepper is eaten, the capsaicin found in the placenta irritates tissues in the digestive tract inducing perspiration, salivation, flow of gastric juices, runny nose and teary eyes. Capsaicin is used in ointments for sore muscles, shingles and psoriasis.

Other uses – Chili peppers dry well, although this renders them spicier than when fresh. Pepper "heat" is rated by the capsaicin content using "Scoville Units" to compare them. Habanero rates 100-400,000, Thai Bird Pepper 70-80,000, Tabasco 30-50,000, and Jalapeo 5-15,000 Scoville Unites. Consumption of chilies is being studied as a risk factor in kidney and gastric cancer, but some cultures eat chilies to alleviate stomach problems. Hot pepper sprays and smokes are useful in self defense, and have even been used as agents of torture.

Seasons of production – Optimum day temperatures for chili pepper growth range from 20 to 30°C, making cold seasons in the tropics the most promising season for growth. When the temperature falls below 15°C or exceeds 32°C for extended periods, growth and yield are usually reduced (AVRDC).

Length of production and harvest period – After about 3 months of growth, red pepper plants flower (Center for New Crops and Plant Products 2002) and fruit continuously as long as they live. Young plants coppice when cut or broken. Under continually favorable conditions, red peppers live about two years. They grow rapidly during the first year, far more slowly during the second, and finally dwindle and die.

Pollination – Chili pepper flowers are self-pollinating and insect cross-pollination is common.

Plant spacing – Space plants at about 45.7 cm (18 in.) apart.

Production methods – The ideal chili pepper seedling has 4–5 true leaves, is disease-free, stocky, and has no flowers. Use 1.5-m wide (furrow to furrow), 30 cm high raised beds which are prepared with a mixture of compost and/or NPK fertilizers. Rows should be spaced 55 cm apart, with 45 cm between plants within rows. Transplant in the late afternoon or on a cloudy day to minimize transplant shock. Furrow or drip irrigation is recommended; overhead irrigation should be avoided, as wet leaves and fruits promote disease development. Chili pepper plants cannot tolerate flooding and fields should be drained quickly after heavy rain. Each plant should be individually staked before flowering stage. Apply NPK fertilizer or compost during the growth (3 and 6 weeks after transplanting) and harvesting periods (every 2-3 weeks).

Environmental conditions for production – Chili peppers require full sunlight and a long hot season for growth. They respond well to mulches of leaves, compost or plastic, and regular irrigation. Peppers should be rotated seasonally and should not be planted following other Solanaceous crops (i.e. tomatoes, potatoes, or eggplant). They grow well in raised beds and in containers.

Soil requirements – Chili peppers grow best in a loam or silt loam soil with good water-holding capacity, but can grow in many soil types, as long as the soil is well-drained (AVRDC). Chili peppers tolerate a pH of 4.3 to 8.3.

Pests – Chili peppers are generally not prone to pests or disease, but if aphids are a problem, check the undersides of the leaves and growing branch tips. When a large aphid population is present, sticky "honeydew" appears on the lower leaves and fruit. If this situation occurs, wash with soapy water or apply a suggested insecticide. People who use tobacco should wash their hands with soap and water before handling pepper plants to prevent spread of tobacco mosaic disease. ECHO Asia has had some success using ash as an insecticide against aphids. Grow resistant varieties if possible.

Seed saving – For seed, cut mature fruits from the plant when firm and glossy and of good color. At this stage, peppers contain the highest vitamin A and C content, and have higher vitamin C than equivalent amounts of citrus. Mature colors vary from yellow to red to brown to purple. *C. frutescens* is red when mature. Remove seeds to be saved from fresh or dried fruit, then rinse in mild vinegar or bleach solutions to discourage seed-born pests and diseases. Dry seeds in moving air, then store below 40°F (4.4°C).

References -

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