

Pinus jaliscana Pérez de la Rosa

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PINACEAE (PINE FAMILY)

P. patula var. *jaliscana* (Pérez de la Rosa) Silba., *P. macvaughii* Carbajal
(Carbajal and McVaugh 1992, Silba 1985)

Jalisco pine, ocote, pino (Perry 1991)

Pinus jaliscana grows only in western Jalisco, Mexico (Carbajal and McVaugh 1992, Pérez de la Rosa 1983). Associate species are *P. oocarpa*, *P. maximinoi*, and *P. douglasiana* Martínez (Perry 1991).

Pinus jaliscana is a well-formed, fast-growing pine, 20 to 30 m in height (sometimes 35 m) and 50 to 80 cm d.b.h. (Carbajal and McVaugh 1992, Perry 1991). It grows at elevations from 850 to 1650 m in semitropical to tropical climates with annual rainfall amounts of 1000 to 1500 mm and mean annual temperatures of 22 to 26 °C (Pérez de la Rosa 1983). The best trees grow on deep, well-drained soils of granite origin (Perry 1991).

The wood is hard, strong, and resinous. It is used for general construction and fuelwood (Perry 1991).

Pinus jaliscana cones are oblique (sometimes markedly oblique), almost symmetrical, pendent, and tapered toward the base. Cones are 3 to 9 cm in length, 2.3 to 2.8 cm in diameter when closed (4 to 6 cm when open), and 35 to 60 g in weight. They are borne singly, in pairs, or sometimes in groups of three on slender, strong peduncles 10 to 15 mm long that are twisted downward. Cones are serotinous and persistent. Maturation is indicated when they change from green to brown in color. Cones mature in the second year and ripe cones begin to appear in November, but cones may remain closed for some years (Carbajal and McVaugh 1992, Pérez de la Rosa 1983, Perry 1991). Seeds are dark brown, 4 to 6 mm long, and about 4 mm wide. The seed wings are pale brown,

articulate, 10 to 17 mm long, and 5 to 8 mm wide (Pérez de la Rosa 1983, Perry 1991).

Cones are collected from the tree using pole-mounted pruners and cutters. Cones are dried by exposing them to the sun for 1 to 2 weeks; however, they must be protected from rainfall during the drying process. When cones remain closed on the tree for 1 year or more, their color changes to gray. When this occurs, one of the following methods may be needed to accelerate the opening of cones and collection of seed: placing cones in boiling water for 10 to 30 seconds, or placing them in a cone-drying kiln for 1 day at temperatures of 50 °C or less. Seeds are removed from cones by shaking in a large mechanical tumbler or shaker, or in a small manual shaker for small lots. Seeds are dewinged by rubbing or flailing, cleaned by air screen or floating in water, and should be dried before storage. Care must be used in processing with mechanical dewingers to avoid damaging the seeds. Seeds average 120,000 per kg (Perry 1991).

Seeds must be stored in dry, cool (4 °C), and airtight conditions. Seed pretreatment involves soaking them in water overnight before sowing. Seeds should be sowed at a depth of 0.9 cm in a light, sterile, and acid medium that provides good aeration and moisture. A temperature of 20 to 30 °C will provide acceptable germination. Like many other pine species, seedlings are susceptible to damping off, thus substrata must be sterile or watering with a fungicide may be needed.