

SPECIES: *Psilocybe cubensis* (Earle) Singer
= *Stropharia cubensis* Earle.
= *Stropharia cyanescens* Murr.
= *Stropharia caerulescens* (Pat.) Sing.
= *Naematoloma caerulescens* Pat.
= *Hypholoma caerulescens* (Pat.) Sacc. & Trott.



Figure 163 *Psilocybe cubensis* fruiting on cased grain.

STRAINS: Strains of *Psilocybe cubensis* are available from private and commercial stocks. The American Type Culture Collection, which sells cultures to educational organizations and research facilities, has stock cultures of several wild strains. Note that the strains listed below are only some of those that are presently circulating. There are many more. Some strains may originate from the same region but have features not in agreement with those described here.

Amazonian: Medium to large mushrooms on rye grain; thick whitish stems; tenaciously attached to the casing.

Ecuadorian: Medium sized mushrooms on rye grain; hemispheric caps; abundant primordia former; high yielding on compost; thin whitish stems; easily picked.

Matias Romero: Medium to large mushrooms on rye grain; early fruiter; thick whitish stems and tenaciously attached.

Misantla: Medium sized mushrooms on rye grain; thin yellowish stems; tall standing and easily picked.

Palenque: Large mushrooms on rye grain; high yielding; and easily picked.

COMMON NAMES: San Isidro; Cubensis.

GREEK ROOT: *Psilocybe* comes from the Greek root "psilos" meaning bald head and *cubensis*, a name Earle assigned to this mushroom because it was first recognized as a new species from specimens collected in Cuba.

GENERAL DESCRIPTION: A medium to large size mushroom having a cap that becomes convex to plane in age and is usually pigmented chestnut brown to deep yellowish or golden brown. The cap surface is finely fibrillose, sometimes covered with scattered, fugacious, cottony scales that soon disappear. The partial veil is membranous, well developed and typically leaving a persistent annulus on the upper regions of the stem. The stem is often longitudinally striate, powdered above the annulus and often covered with dense fibrils below. Flesh bruising bluish or bluish green. Its spores purplish brown in mass.

NATURAL HABITAT: Naturally found in horse and cow pastures, in dung or in soil enriched with manure. *Psilocybe cubensis* is a widely distributed species that is found throughout tropical and subtropical zones of the world and is common in the pasturelands of the gulf coast of the southern United States and eastern Mexico.

GROWTH PARAMETERS

Mycelial Types: Rhizomorphic to linear; whitish in overall color but often bruising bluish where injured.

Standard Spawn Medium: Rye grain. See Chapter III.

Fruiting Substrate: Rye grain; wheat straw; leached horse or cow manure; and/or horse manure/straw compost balanced to a 71-74% moisture content.

Method of Preparation: See Chapters III, V, and VI. Pasteurization achieved through exposure to live steam for 2 hours at 140°F. throughout the substrate. Straw or compost should be filled to a depth of 6-12 inches. Straw should be spawned at a rate of 2 cups/sq. ft.

Spawn Run:

Relative Humidity: 90%.

Substrate Temperature: 84-86°F. Thermal death limits have been established at 106°F.

Duration: 10-14 days.

CO₂: 5000-10,000 ppm.

Fresh Air Exchanges: 0 per hour.

Type of Casing: After fully run, cover with the standard casing whose preparation is described in Chapter VIII. Layer to a depth of 1-2 inches. The casing should be balanced to an initial pH of 6.8-7.2.

Post Casing/Prepinning:

Relative Humidity: 90+ %.

Substrate Temperature: 84-86 °F.

Duration of Case Run: 5-10 days.

CO₂: 5000-10,000 ppm.

Fresh Air Exchanges: 0 per hour.

Light: Incubation in total darkness.

Primordia Formation:

Relative Humidity: 95-100%.

Air Temperature: 74-78 °F.

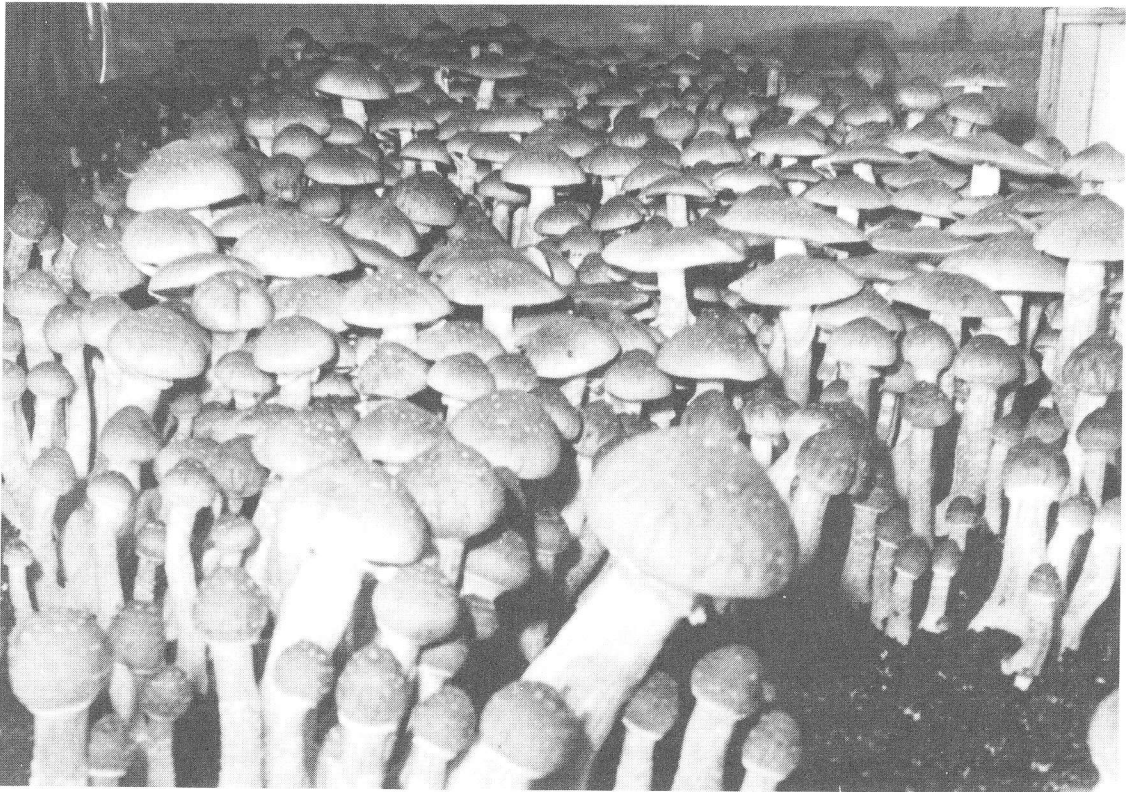


Figure 164 *Psilocybe cubensis* fruiting on cased straw.

Duration: 6-10 days.

CO₂: less than 5000 ppm.

Fresh Air Exchanges: 1-3 per hour.

Light: Diffuse natural or exposure for 12-16 hours/day of grow-lux type fluorescent light high in blue spectra at the 480 nanometer wavelength. (See Chapters IV and IX).

Cropping:

Relative Humidity: 85-92%.

Air Temperature: 74-78 °F.

CO₂: less than 5000 ppm.

Fresh Air Exchanges: 1-3 per hour.

Flushing Pattern: Every 5-8 days.

Harvest Stage: When the cap becomes convex and soon after the partial veil ruptures.

Light: Indirect natural or same as above.

Yield Potential: Average yields are 2-4 lbs./sq.ft. over a 5 week cropping period. Maximum yield potential has not been established.

Moisture Content of Mushrooms: 92% water; 8% dry matter.

Nutritional Content: Not yet established.

Comments: One of the easiest mushrooms to grow, this species fruits on a wide variety of substrates within broad environmental parameters. As a primary and secondary decomposer, *Psilocybe cubensis* fruits well on untreated pasteurized straw and on horse manure/straw composts transformed by microbial activity. Sterilized grain typically produces smaller mushrooms than bulk substrates. Given the numerous substrates that support fruitings, *Psilocybe cubensis* is well suited for home cultivation.

Psilocybe cubensis cultivation was unheard of twenty years ago. Today, this species ranks amongst one of the most commonly cultivated mushrooms in the U.S. and soon the world. This sudden escalation in interest is largely due to the publication of several popular guides illustrating techniques for its culture.

Psilocybe cubensis is a mushroom with psychoactive properties, containing up to 1% psilocybin and/or psilocin per dried gram. The function of these serotonin-like compounds in the life cycle of the mushroom is not known.

Genetic Characteristics: Basidia tetrapolar (4-spored), forming haploid spores (1N); heterothallic. The mating of compatible monokaryons often results in fruiting strains. Clamp connections are present. See Chapter XV.

For further information consult:

Oss, O.T. and O.N. Oeric, 1976. "*Psilocybin: Magic Mushroom Grower's Guide*". And/Or Press, Berkeley.
