

268. *PILOCARPUS* SPP. (RUTACEAE) — Jaborandi

The eighth edition of the *Merck Index* lists pilocarpine hydrochloride (trading at \$13.00/oz. in November 1979) as a parasympathomimetic and topical mitotic and as an antidote for atropine. Pilocarpine is a cholimimetic alkaloid, used widely in treating glaucoma. It acts directly on cholinergic receptor sites, thus, mimicking the action of acetylcholine. Intraocular pressure is thereby reduced, and despite its short-term action, it is the standard drug for initial and maintenance therapy in certain types of glaucoma. Pilocarpine stimulates secretions in the respiratory tract, as well as gastric, lacrimal, salivary, and other glands, weakens heart action, accelerates pulse, increases peristalsis, and promotes uterine contraction. A single dose of pilocarpine may induce 250 to 450 g sweat. Small doses quench the thirst in fever or chronic renal ailments. Frequently used in hair preparations. In 1973 in the U.S., nearly four million (0.26% of total) prescriptions contained pilocarpine.⁹⁸

Used in asthma, baldness, Bright's disease, catarrh, coronary, deafness, diabetes, dropsy, intestinal atony, jaundice, nausea, nephritis, pleurisy, prurigo, psoriasis, rheumatism, syphilis, and tonsillitis.³² Induces sweat, salivation, perhaps even lactation. Leaf decoction applied externally to prevent baldness.

Tannic acid; volatile oils (including dipentene and other hydrocarbons). Three alkaloids prevail, pilocarpine $C_{11}H_{16}N_2O_2$, pilocarpidine, and isopilocarpine $C_{11}H_{16}N_2O_2$. Jaborine, in the leaves, may be antagonistic to pilocarpine. Pilosine, isopilosine, isopilocarpine, jaborandine, jaboric, and pilocarpic acid are also reported.

Toxicity — Leaves containing the teratogenic alkaloid pilocarpine are poisonous to cattle and donkeys. Jaborandi may irritate the stomach, causing nausea. An overdose may cause flushing, profuse sweating, salivation, nausea, rapid pulse, contracted pupils, diarrhea, perhaps even fatal pulmonary edema. The stomach should be evacuated and atropine given. The essential oil may be irritant to the skin. The oral LD_{50} of pilocarpine in rats is 911 mg/kg body weight.