

Carum carvi L.

Standardized Common Name: Caraway

Family: Apiaceae (Umbelliferae)

Taxonomy: *Carum* includes about 30 species. *Carum carvi* is among five species native to Europe. It has been widely distributed through cultivation; for example, it is naturalized in North America.

Description: Biennial or annual herb. Stem erect, to 80(–150) cm high, branching. Leaves basal and alternate, with sheathing petioles; basal leaves to 20 cm long, 2–3-pinnately compound, overall shape oblong or narrowly deltoid; the stem leaves smaller, with pinnately compound stipules; lobes 3–12(–25) mm long, linear or ovate and pinnatifid; apices acute, cartilaginous. Inflorescences compound umbels, several per plant; peduncles often borne opposite stem leaves; umbels bractless or subtended by few linear or pinnatifid bracts; umbels usually without bracteoles; main rays 5–16, 2–40 mm long, conspicuously unequal in length within each umbel, spreading in fruit; flowers tiny, usually white, occasionally pink or red, 5-petaled. Fruit a schizocarp of 2 mericarps, (2–)3–4(–7) mm long, ellipsoid to oblong-ovoid, laterally compressed, connected by narrow commissure, glabrous.

Parts in Commerce: Fruits

Identification: See appendix for explanation of the technical terms pertaining to umbel fruits.

- Mericarps usually separated, or attached to carpophore only at apex; commissure constricted
- Mericarps 3–7 mm long, 1.5–2 mm broad
- Oblong-ovoid and curving, with convex dorsal sur-

face and concave commissural surface, somewhat banana-shaped

- Apex narrowed; calyx below stylopodium reduced to minuscule bumps or altogether absent, lacking conspicuous teeth
- Ribs 5, threadlike, yellowish to yellowish-brown; vallecular channels between ribs darker brown
- 1 vitta in each vallecule on dorsal side, 2 vittae on commissural face; vittae visible externally as dark longitudinal raised line down middle of each vallecule, often undulating
- Surface glabrous, without hairs or scales
- In cross-section of dried fruit, endosperm bluntly star-shaped (nearly rectangular in fresh or soaked fruit); vittae visible as dark spots in mericarp wall
- Odor aromatic
- Taste aromatic, pleasant, characteristic

Adulterants: Historical substitutes for *C. carvi* in commerce include *Cuminum cyminum* L. (Cumin) and *Aegopodium podagrarium* L. (Ash Weed, Goutweed), although confusion of cultivated material today is unlikely. Both of these are also sold in their own right for culinary and medicinal purposes, especially the former. The fruits of all three are sometimes of similar size, shape and coloring (although that of *Aegopodium* typically ranges from dark brown to nearly black). Several features, summarized in the table below, differentiate them; of these, odor and flavor are the simplest for those who are familiar with the material.

	<i>Carum carvi</i>	<i>Aegopodium podagraria</i>	<i>Cuminum cyminum</i>
Odor (crush fruit) and taste	Aromatic, pleasant, characteristic	Not aromatic	Aromatic, strong, characteristic
Size and shape	Commissural face of all mericarps concave; mericarps somewhat "banana-shaped"	Commissural face flattened; ribs less conspicuous; length <4 mm	Mericarps usually not separating; elliptical in cross-section, flattened along commissural face
Endosperm cross-section, in dried fruit	Star-shaped, with 5 rounded blunt projections	Rectangular or rounded, without grooves at dorsal face	Crescent-shaped
Hairs	Glabrous	Glabrous	With short scaly hairs visible especially on secondary ridges (easily worn off)
Calyx teeth at apex, below stylopodium	Absent or reduced to minute projections	Absent	Present, although easily lost in handling
Vallecular vittae	1 per vallecula	Numerous, but not persistent at maturity	1 per vallecula, compressed in cross-section

References:

Arenas Posada JA, García Martín F. Atlas carpológico y corológico de la subfamilia *Apioideae* Drude (*Umbelliferae*) en España peninsular y Baleares. *Ruizia*. 1993;12:1–245.

Cappelletti EM. Microcaractères de l'épicarpe des achenes de *Carum carvi* L. et de sa falsification *Aegopodium podagraria* L. *Pl Méd Phytothérap*. 1979;13:205–212.

Mihalik E. Taxonomy and botanical description of the genus *Carum*. In: Németh É, ed. *Caraway: the Genus Carum*. Amsterdam: Harwood Academic Publishers; 1998:9–33. Medicinal and Aromatic Plants—Industrial Profiles. Vol. 7.

Tutin TG. *Carum*. In: Tutin TG, Heywood VH, Burges NA, et al., eds. *Flora Europaea*. Vol. 2. Cambridge: Cambridge University Press; 1968:354.

Tutin TG. *Umbellifers of the British Isles*. London: Botanical Society of the British Isles; 1980. B.S.B.I. Handbook No. 2.

Youngken HW. *Text-Book of Pharmacognosy*, 5th ed. Philadelphia, PA: The Blakiston Company; 1943:627–630.

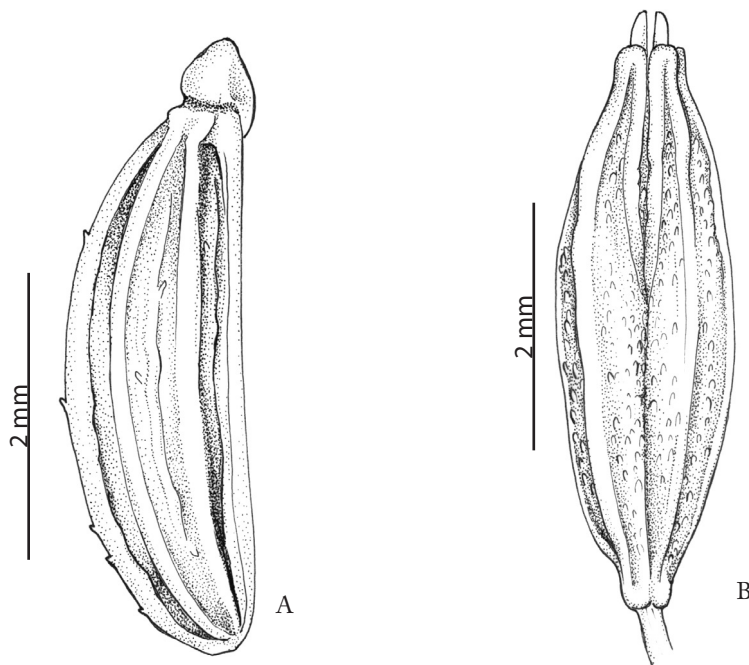


Figure 16: a, fruit of *Carum carvi*; b, *Cuminum cyminum*.