

Myricaceae (Wax-Myrtle Family) Traits & Keys

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Myricaceae Traits

In our province, the Wax-Myrtle Family (Myricaceae) is represented by just 2 species: *Myrica gale* (sweet gale) and *Morella pensylvanica* (northern bayberry). Sweet gale is widespread throughout Newfoundland and Labrador, while northern bayberry has a distribution restricted to few locations: either on sandy substrates in southwestern Newfoundland or serpentine (ultramafic) substrates in western Newfoundland. Both species share the following traits:

- Low shrubs with nitrogen-fixing bacteria in their root nodules, which enables them to survive in nutrient-deficient habitats.
- Leaves are alternate, simple, deciduous, and aromatic when crushed; petioles are short (1–4 mm long); stipules are absent.
- Leaf blades are usually oblanceolate, with narrow, tapering bases, and blunt to rounded apices that often bear a few small teeth above the middle of the blade.
- Golden-yellow resin dots (spherical glands) occur on both leaf surfaces; they are sparsely or moderately distributed on the upper surface, and densely distributed on the lower surface. Resinous glands also occur on stems and floral structures.
- Flowers are unisexual with several flowers arranged in dense, sessile catkins less than 2 cm long. Male (staminate) and female (pistillate) catkins are usually borne on separate shrubs (plants dioecious).
- Sepals and petals are absent. Individual flowers of the catkins are subtended by scaly bracts; staminate flowers have 3–5 stamens; pistillate flowers have a single superior ovary of 2 fused carpels, 2 sessile stigmas, and 2–4 fleshy bracteoles (small bracts) that are fused (adnate) to or surround the ovary, and are persistent in fruit.

Key to the Myricaceae	2
Myricaceae Comparison Chart.....	2
References	3

Key to Myricaceae Species in Newfoundland and Labrador

- 1a. Leaves dark green to bluish-green, to 6.5 cm long × 0.5–1.5 cm wide; blades usually oblanceolate, occasionally obovate, firm at maturity; margins entire in the lower half to two-thirds, with 1–7 (usually 3–4) small teeth on each side of the upper portion of the blade; catkins emerge from lateral buds at the tip of 1-year-old branches; male flowers are each subtended by a stiff, brown, concave bract, longer than the stamens; the fruit is a lenticular (lens-shaped) achene; adnate (fused) to the sides of the fruit are 2 ovoid, fleshy, buoyant bracteoles that aid in water dispersal. ***Myrica gale*** (sweet gale)
- 1b. Leaves yellow-green to bright green, to about 8 cm long × 1.5–3 cm wide; blades elliptic, oblong, oblanceolate, or obovate, slightly firm at maturity; margins often entire or with 1–3 small teeth on each side of the upper half of the blade; catkins emerge from lateral buds on 2-year-old branches; male flowers are each subtended by an ovoid bract shorter than the stamens; the fruit is a spherical drupe, with a pebbly, white to bluish-grey, waxy surface; dispersal is mainly by birds. ***Morella pensylvanica*** (northern bayberry)

Myricaceae Comparison Chart

Genera:	<i>Myrica gale</i>	<i>Morella pensylvanica</i>
	(sweet gale)	(northern bayberry)
Plants	low shrubs, to 1.5 m tall in our area.	low shrubs, to 2 m tall in our area.
Branches	brown to purplish-black, dotted with golden yellow resin glands, and moderately to sparsely pubescent with short white hairs; immature green stems are moderately hairy and glandular	year-old branches reddish-brown; older branches grey or greyish-brown ; hairs and glands are sparse or absent on older woody stems; immature green stems are densely hairy and glandular
Leaf Blades	oblanceolate or obovate, firm ; aromatic when crushed	oblong, elliptic, oblanceolate, or obovate , less firm than leaves of <i>Myrica gale</i> ; aromatic when crushed
Leaf Size	1.5–6.5 cm long × 0.5–1.5 cm wide	about 2.5–8 cm long × 1.5–3 cm wide
Leaf Apex	rounded or obtuse	rounded or obtuse, often short-apiculate
Leaf Base	tapering (cuneate)	tapering (cuneate to attenuate)

Leaf Margins	flat to barely revolute; entire below the small teeth near the apex; teeth 1–7 (usually 2–4) on each side , often in the upper third of the blade, occas. extending lower on the blade	flat to barely revolute; often entire, or with 1–3 small blunt or apiculate teeth on each side , usually in the upper half of the blade
Upper Leaf Surface	bluish green, dull ; glabrous to sparsely hairy, with short white hairs and moderately covered with small, spherical, golden-yellow resin glands	yellow-green (when young) to bright green, often shiny ; minutely pubescent with short white hairs and with relatively few, scattered, small, spherical, golden-yellow, resin glands
Lower Leaf Surface	paler green, moderately covered with small, spherical, golden-yellow resin glands and sparsely to densely hairy with short white hairs	paler yellowish-green, densely glandular, with small, spherical, golden-yellow, resin glands ; densely pubescent on the midrib with short white hairs
Staminate Flowers	stamens usually 3–5 per flower; individual flowers subtended by an ovate, reddish-brown, shiny, deeply concave bract, longer than the stamens and with a few hairs at the tip of the bract	stamens usually 3–4 per flower; individual flowers subtended by an ovate, green to brownish bract, shorter than the stamens
Pistillate Flowers	individual flowers subtended by ovate, reddish-brown bracts; the ovary is lenticular and vertically compressed; bracteoles of pistillate flowers 2, ovate, fused to the sides of the ovary	individual flowers subtended by ovate, green bracts; bracteoles of pistillate flowers 4, surrounding but not fused to the ovary, forming a cupule around the fruit, the surface covered with numerous papillae (small rounded bumps) at maturity
Fruits	achene flattened, with 2 buoyant, spongy, ovoid bracteoles fused to the sides of the achene, 2.5–3 mm long wide	drupes spherical, hard, 3.5–5.5 mm across, the surrounding cupule with numerous rounded papillae coated with a white to bluish-grey layer of wax ; older persistent fruits are black and lack much of the waxy coat
Habitat and Range	throughout NL; mainly in marshes , also in bogs, forested fens, pond borders, and barrens	restricted to sites in western Nfld. on ultramafic (serpentine) substrates, or on sites in swNfld. with sandy soils

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