

Violaceae (Violet Family) Key
Key to species in Newfoundland and Labrador
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- 1a. Plants stemmed (caulescent), with cauline leaves (and with or without basal leaves); flowers axillary, originating from leaf axils. **2**
- 1b. Plants stemless (acaulescent), with basal leaves only; flowers basal, originating from the caudex (top of the rhizome). **4**
 - 2a. Plants native, erect to spreading, with cauline and basal leaves; stipules of cauline leaves narrow, with a few slender teeth, to 2 mm long, towards the base; petals pale violet or lavender, uniform in colour, the spurred petal not yellow towards the centre nor marked with dark lines; spur 4–8 mm long; plants of calcareous or basic habitats (limestone barrens, basalt outcrops). ***Viola labradorica*** (Labrador violet)
 - 2b. Plants introduced, erect, with cauline leaves only; stipules of cauline leaves pinnately lobed (pinnatisect) at the base; petals bi- or tricolored, with cream, white, and/or blue, with the lower petal (lip) yellow towards the centre and marked with a few dark lines; spur 2–4 mm long; plants of disturbed habitats (lawns, roadsides, abandoned fields, etc.). **3**
- 3a. Flowers bicolor, petals cream or white, with the spurred petal yellow towards the centre; petals equal to or barely exceeding the sepals. ***Viola arvensis*** (field pansy)
- 3b. Flowers tricoloured, petals blue and white or two-toned dark and light blue, the spurred petal yellow towards the centre; petals 2–3 times longer than the sepals. ***Viola tricolor*** (Johnny-jump-up)
- 4a. Leaf blades lanceolate, elliptic, oblanceolate, to ovate; leaf bases tapering gradually to the petiole..... **5**
- 4b. Leaf blades ovate to cordate, with cordate leaf bases **6**
- 5a. Leaf blades lanceolate, narrowly elliptic, or oblanceolate, gradually tapering to the petiole (leaf bases attenuate); leaf blades 3–20 times as long as broad, to 2.5 cm wide. ***Viola lanceolata*** (lanceleaf violet)
- 5b. Leaf blades elliptic, oblong, to ovate, leaf bases gradually rounded to nearly cordate, the blade decurrent along the petiole; leaf blades 1.2–2.5 times as long as broad. ***Viola xsublanceolata*** (sublanceolate violet)
- 6a. Flowers with white petals. **7**
- 6b. Flowers with pale lilac to deep blue-violet petals. **9**

- 7a. Leaves glabrous; flowers 7–10 mm long, very fragrant, lateral petals bearded with a few hairs; plants of wet habitats. ***Viola macloskeyi*** (northern white violet)
- 7b. Leaves pubescent on one or both surfaces; flowers 10–15 mm long, scarcely or not fragrant, lateral petals beardless; plants of dry to moist forested or barren habitats. **8**
- 8a. Young leaves pubescent on both surfaces, or just on the lower surface main veins of mature leaves; blades reniform to broadly ovate; 2–5 cm wide, apices usually blunt (obtuse) to rounded; sinuses narrow to broad, basal lobes not overlapping; plants non-stoloniferous; usually growing on limestone (calcareous) substrates in Nfld. ***Viola renifolia*** (kidneyleaf violet)
- 8b. Young leaves pubescent on both surfaces, or only the upper surface of mature leaves with scattered stiff (strigose) hairs; leaves mainly ovate to broadly cordate; 2.5–10 cm wide; apices acute to acuminate, sinuses narrow, basal lobes often overlapping; plants stoloniferous, often forming colonies; plants of forested habitats. ***Viola blanda*** (sweet white violet)
- 9a. Leaves glabrous; flowers with a spur 1–3 mm long. **10**
- 9b. Leaves pubescent on one or both surfaces; flowers with a spur 2–7 mm long. **12**
- 10a. Plants stoloniferous, often forming extensive colonies, with 2–4 basal leaves; flowers very fragrant; petals pale lavender, grayish, or nearly white, veined with darker violet; lateral 2 petals slightly bearded; plants of alpine and northern areas. ***Viola palustris*** (alpine marsh violet)
- 10b. Plants non-stoloniferous, with 4–8 basal leaves; flowers not fragrant; petals dark blue-violet; lateral 3 petals densely bearded; plants of wet lowland areas and shores. **11**
- 11a. Bearding on lateral 2 petals of clavate hairs; lower leaf surfaces green; petaliferous flowers often much overtopping the leaves; sepals with lobed auricles 3–6 mm long; spurred petal 9–13 mm long, shorter than the lateral petals; plants of wet marshes, stream banks, and seepage areas. ***Viola cucullata*** (marsh blue violet)
- 11b. Bearding on lateral 2 petals of slender straight hairs; lower leaf surfaces often grayish-green to purplish- or bluish-green; petaliferous flowers equal to or somewhat taller than the leaves; sepals with unlobed auricles, 1–2 mm long; spurred petal 10–28 mm long, about equal in length to the lateral petals; plants of gravelly calcareous shores and moist areas of limestone barrens. ***Viola nephrophylla*** (northern bog violet)
- 12a. Leaf blades strigose-hirsute above, glabrous beneath; sepals lanceolate-ovate, acute, with entire margins; leaves with basal sinuses deep and nearly closed; inner

- margins of basal lobes often overlapping; spurs elongate, 4–7 mm long; *all petals beardless*. ***Viola selkirkii*** (Selkirk's violet)
- 12b. Leaf blades pubescent on both surfaces; flowers with ovate-oblong *obtuse* sepals with ciliate margins; leaves 2–10 cm wide, basal leaf sinuses open, basal lobes not overlapping; spurs short, 2–3 mm long; all petals pubescent, lateral petals and spurred petal densely bearded, upper 2 petals with a few scattered hairs.
..... ***Viola sororia*** (woolly blue violet)

Key to *Viola* Comparison Charts

- 1a. Plants stemmed, flowers arising from axils of alternate leaves. **Chart 1**
- 1b. Plants stemless, flowers all arising from leafless peduncles. **2**
- 2a. Flowers lavender, purple, or bluish..... **3**
- 2b. Flowers white. **4**
- 3a. Leaf blades, petioles, and peduncles glabrous..... **Chart 2**
- 3b. Leaf blades pubescent at least on one surface. **Chart 3**
- 4a. Leaves ovate, cordate, to reniform. **Chart 4**
- 4b. Leaves narrowly elliptic, oblanceolate, to narrowly ovate. **Chart 5**

Viola (Violaceae) Comparison Charts

Viola Chart 1 (of 5): Stemmed violets			
Species:	<i>Viola labradorica</i>	<i>Viola arvensis</i>	<i>Viola tricolor</i>
	Labrador violet	field pansy	Johnny-jump-up
Stems	creeping to spreading	erect	erect
Leaf Shape	ovate to cordate; stipules narrowly lanceolate, margins incised	ovate to lanceolate; stipules palmately lobed, with middle lobe oblanceolate and ± equal to leaf blade	
Pubescence	plants glabrous	lower leaf surface hairy, stipule margins ciliate	
Flowers	petals lavender to purple; all petals exceeding the sepals	upper & lateral petals white to pale yellow; lower petal yellow, darker yellow at the throat	upper 2 petals purple, lateral and lower petals white and/or yellow, occ. light blue; lower petal darker yellow at throat
Sepals	linear-lanceolate, acuminate, eciliate; all petals longer than the sepals	lanceolate, acuminate; hairy, margins ciliate; lateral petals equal to or shorter than sepals	triangular-lanceolate, acuminate, hairy, margins ciliate; lateral petals longer than sepals
Petals	lateral petals bearded; upper and spurred petal beardless		
Spur	long, 4–8 mm long	3–5 mm long	4–5 mm long
Capsule	broadly ellipsoid; seeds buff to brown	globose; seeds brown	ovoid to nearly globose; seeds tan
Habitat	native to NL; barrens on calcareous and basic rocks; rich meadows	introduced in NL; disturbed areas	

Viola Chart 2 (of 5): Stemless violets with purple or bluish flowers and with glabrous leaves			
Species:	<i>Viola cucullata</i>	<i>Viola nephrophylla</i>	<i>Viola palustris</i>
	marsh blue violet	northern bog violet	alpine marsh violet
Stolons	lacking stolons		stoloniferous
Leaf Shape	ovate-cordate, longer than broad ; apex acute to acuminate; lower surface green	broadly cordate to reniform ; apex obtuse to rounded; lower surface often greyish to purple	broadly cordate, reniform, to orbicular; apex obtuse to rounded
Leaf Pubescence	glabrous on both surfaces		
Flowers	not fragrant; often > taller than leaves; petals lavender to blue-violet, often darker near the white throat	not fragrant; petals deep violet , noticeably white at the throat	fragrant; petals pale lavender to grayish, white throat lacking
Sepals	lanceolate, acuminate ; margins eciliate	lanceolate to ovate, obtuse ; margins eciliate	lanceolate to ovate, obtuse; margins eciliate
Petals	lateral 2 petals with clavate hairs ; upper 2 petals beardless; spurred petal beardless, shorter than lateral petals	lateral 2 and spurred petals bearded with straight hairs ; upper 2 petals beardless	lateral 2 petals beardless to slightly bearded ; upper 2 and spurred petals beardless
Spur	short, 1–3 mm long		
Capsule	cylindrical-ovoid, green; seeds blackish	short-ellipsoid, green; seeds buff to olive-brown	ellipsoid, green; seeds buff or greyish
Habitat	streambanks, marshes, acidic sedge meadows	calcareous barrens, sedge meadows, & fields	alpine to subalpine wet meadows, exposed coastal meadows, often calcareous

<p align="center">Viola Chart 3 (of 5): Stemless violets with purple or bluish flowers and hairy leaves</p>		
Species:	<i>Viola selkirkii</i>	<i>Viola sororia</i>
	Selkirk's violet	woolly blue violet
Stolons	stoloniferous	lacking stolons
Leaf Shape	broadly cordate; inner margins of leaf bases curve inward, often touching or overlapping	ovate to cordate; basal lobes divergent, not curving inward
Leaf Pubescence	hairy on upper surface , glabrous beneath; petioles and peduncles glabrous	hairy on both upper and lower surfaces; petioles and peduncles hairy
Flowers	not fragrant; petals lavender	not fragrant; petals pale to deep purple
Sepals	narrowly-lanceolate, acuminate; margins and auricles eciliate	oblong-ovate, acute to obtuse; margins and auricles ciliate
Petals	all petals beardless	lateral 2 petals beaded with straight hairs; upper 2 petals and spurred petal beardless or bearing few hairs
Spur	long, 5–7 mm long	short, 1–3 mm long
Capsule	nearly globose, purple-mottled; seeds pale buff	ovoid, purplish or purple-mottled; seeds buff to brown

Viola Chart 4 (of 5): Stemless violets with white flowers and cordate to reniform leaves			
Species:	<i>Viola blanda</i>	<i>Viola macloskeyi</i>	<i>Viola renifolia</i>
	sweet white violet	northern white violet	kidneyleaf violet
Stolons	stoloniferous		lacking stolons
Leaf Shape	ovate to cordate; apices acute to obtuse; basal lobes of mature leaves incurved, often overlapping	cordate to reniform, broadly acute to rounded; basal lobes divergent, not overlapping	cordate to reniform, obtuse to rounded; basal lobes straight to divergent, not overlapping
Leaf Pubescence	hairy at least on lower leaf surface, peduncles; upper leaf surface glabrate; petioles glabrous	glabrous on both leaf surfaces; petioles often bearing a few long hairs	hairy on lower or both surfaces, as well as petioles and peduncles
Flowers	flowers slightly fragrant	flowers very fragrant	flowers not fragrant
Sepals	lanceolate-ovate, acute; margins and auricles entire, eciliate	linear-lanceolate, blunt; margins and auricles entire, eciliate	lanceolate, acuminate; sepal margins entire, auricles ciliate
Petals	lateral 2 petals bearded	all petals beardless or lateral 2 with few hairs	all petals beardless
Spur	short, 1–3 mm long		
Capsule	ovoid, purple; seeds buff to olive brown	ellipsoid, green; seed becoming blackish	ellipsoid, purple; seeds warm brown
Habitat	moist, shady forests	wet habitats, alder thickets, shoreline	calcareous woods, ravines

Viola Chart 5 (of 5):
Stemless violet species with lanceolate to elliptic leaves

Species:	<i>Viola lanceolata</i>	<i>Viola ×sublanceolata</i> <i>(V. lanceolata x V. pallens)</i>
	lanceleaf violet	sublanceolate violet
Stolons	stoloniferous	
Leaf Shape	elliptic to oblanceolate; petioles often reddish near base	broadly elliptic to ovate, tapering to truncate at base; petioles green
Leaf Pubescence	glabrous	
Flowers	flowers fertile; petals white; peduncles reddish, glabrous	flowers sterile; petals white, peduncles glabrous
Sepals	lanceolate to ovate, acute to blunt; margins entire, eciliate	
Petals	all beardless	
Spur	short, 1–3 mm long	
Capsule	cylindrical-ovoid, green; seeds olive- brown	not developing
Habitat	wet, acidic soils, peatlands	

