

THE GENUS *SALVIA* (LAMIACEAE) IN THE VALLEY OF MEXICO

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RESUMEN

En la primera fase de un trabajo consistente de dos partes, se presenta una clave de las especies del género *Salvia* L. presentes en el Valle de México.

ABSTRACT

In the first of a two paper, a key to the species of *Salvia* L. of the Valley of Mexico is presented.

The genus *Salvia* L. is among the largest in the central Valley of Mexico as defined by Rzedowski and Rzedowski (1979). It is one of the most conspicuous elements of the flora with bright red and blue flowers.

A treatment of the genus for Flora Fanerogámica del Valle de México (Rzedowski and Rzedowski, 1979) was recently completed. Since the original treatment was in Spanish, it was thought to be a good idea to publish the English version of the key to these numerous species separately. A second part to this publication which is in progress deals with the systematic considerations of the species of *Salvia* from the Valley of Mexico.

1. Leaf-bases broadly cuneate to cordate to truncate, sometimes hastate, but not cuneate, angustate.
2. Leaves bullate to rugose above.
3. Leaves oblong-lanceolate, white-lanate beneath; calyx purple; corolla white. *S. leucantha*
3. Leaves oblong-ovate to deltoid ovate, white-tomentose beneath; calyx green to bluish; corolla blue.
4. Calyx glandular-villous *S. melissodora*
4. Calix villous, but not glandular *S. keerlii*
2. Leaves neither bullate nor rugose.
5. Leaves hastate; bracts oblong to lanceolate, rarely linear (1-4 cm x 2-5 mm), fairly persistent; corolla large, blue *S. patens*
5. Leaves not hastate; bracts neither oblong nor linear, of various sizes, persistent or not.
6. Bracts subtending flowers large to medium-sized (4-1 mm x 4-14 mm), persistent.
7. Verticils of flowers separated by 2-4 cm long internodes; bracts deltoid to rounded, acuminate, hirsute along nerves on back *S. hirsuta*
7. Verticils crowded into a dense cylindric inflorescence; bracts ovate, cuspidate, villous on back *S. hispanica*
6. Bracts subtending flowers large or small, of various shapes, early deciduous.

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8. Flowers red.
 9. Flowers less than 3 cm long.
 10. Calyx 4-8 mm long, 1.5-3 mm wide, lobes cuspidate *S. elegans*
 10. Calyx 7-16 mm long, 3-6 mm wide, lobes acuminate, not cuspidate.
 11. Petioles lacking in upper leaves; bracts when present with coiled acumen; lower lip of corolla less than 7 mm wide *S. pulchella*
 11. Petioles present in all leaves; bracts not coiled; lower lip of corolla 9-12 mm wide *S. microphylla*
 9. Flowers more than 5 cm long.
 12. Corolla with a pair of papillae on the inside towards the base *S. fulgens*
 12. Corolla without a pair of papillae on the inside towards the base . *S. gesneriiflora*
8. Flowers usually blue, sometimes purple or white, never red.
 13. Corolla more than 2.5 cm long.
 14. Calyx hispid, usually blue; leaves cordate; style glabrous *S. concolor*
 14. Calyx glabrescent or pubescent along nerves; leaves cuneate to sometimes cordate; style bearded *S. mexicana*
 13. Corolla less than 2.5 cm long.
 15. Stem with glandular pilose hairs.
 16. Stem decumbent; leaves glandular pilose on both sides; flowers ca. 1.5 cm long *S. oreopola*
 16. Stem erect; leaves hirtellous above; flowers 1.2-1.3 long *S. amarissima*
 15. Stem without glandular pilose hairs.
 17. Calyx glandular pubescent *S. gracilis*
 17. Calyx not glandular pubescent.
 18. Corolla more than 1.5 cm long *S. mexicana*
 18. Corolla less than 1.5 cm long.
 19. Corolla 1-1.2 cm long *S. polystachya*
 19. Corolla ca. 5.5 cm long *S. tilifolia*
1. Leaf-bases cuneate to angustate.
 20. Leaves bullate to rugose above; calyx purple; corolla white, occasionally blue *S. leucantha*
 20. Leaves neither bullate nor rugose; calyx green, rarely blue; corolla usually blue, sometimes red, purple or white.
 21. Pubescens on stem and petioles stellate *S. chamaedryoides*
 21. Pubescence never stellate.
 22. Flowers solitary, axillary; a low procumbent herb often rooting at nodes *S. axillaris*
 22. Flowers in verticils of 2-many flowers; plants generally erect, stem not rooting at nodes
 23. Leaves distinctly lobed *S. verbenacea*
 23. Leaves entire to crenate-serrate.
 24. Bracts (large or small) persistent, well into flower and fruit.
 25. Bracts 4-12 mm x 4-12 mm, rotund-ovate; leaves ovate; corolla blue *S. mocinoi*
 25. Bracts 2-3.5 mm x ca. 2 mm, ovate, lanceolate; leaves oblong to elliptic rarely linear; corolla white *S. reflexa*
 24. Bracts usually inconspicuous, deciduous at anthesis.
 26. Verticils of flowers crowded and approximate; internodes separating them not well-pronounced.
 27. Inflorescence terminal and axillary; petiole 0.4-5 cm long; leaves mostly ovate, sometimes elliptic *S. polystachya*
 27. Inflorescence always terminal; petiole 0.2-1.5 cm long; leaves broadly to narrowly elliptic.
 28. Inflorescence dense, 1-5 cm long, narrowed into a cone; petiole 0.4-1.5 cm long; leaves broadly elliptic, gland-dotted *S. stricta*
 28. Inflorescence dense, 1-5 cm long, cylindric; petiole 2-4 mm long; leaves narrowly elliptic, not gland-dotted *S. lavanduloides*
 26. Verticils separated from one another by long internodes.
 29. Basal leaves sessile (petiole less than 2 mm long).

- 30. Plant glandular hairy, viscid *S. riparia*
- 30. Plant not glandular hairy, not viscid.
- 31. Leaves elliptic. Stem with appressed-pubescent of reflexed hairs; raceme 10-15 cm long; calyx sericeous hairy *S. moniliformis*
- 31. Leaves lanceolate, oblong-lanceolate, sometimes linear; raceme 5-8 cm long; stem glabrous glabrescent, sometimes pilose to setose; calyx not sericeous hairy.
- 32. Upper lip of calyx not trifold; leaves usually in whorls *S. leptophylla*
- 32. Upper lip of calyx trifold; leaves never in whorls.
- 33. Leaves linear, venation indistinct *S. filifolia*
- 33. Leaves lanceolate to oblong lanceolate, venation distinct *S. laevis*
- 29. Basal leaves petiolate (petiole 0.5-12 cm long).
- 34. Stem glabrous or glabrescent; leaves rotund-ovate, fimbriate along margin towards the base *S. tiliifolia*
- 34. Stem variously hairy; leaves of various shapes.
- 35. Leaves rhomboid to rhombic-ovate; upper lip of calyx trifid; stem with subterranean tuber *S. prounelloides*
- 35. Leaves elliptic to ovate or deltoid; upper lip of calyx not trifid.
- 36. Young portions of stem, calyx and pedicel glandular villous *S. elegans*
- 36. Young portions of stem, calyx and pedicel not glandular villous.
- 37. Calyx less than 9 mm long, reflexed; pedicels recurved; leaves elliptic; stem stoloniferous *S. helianthemifolia*
- 37. Calyx 9-17 mm long, not reflexed; pedicels erect to spreading.
- 38. Flowers blue *S. mexicana*
- 38. Flowers red.
- 39. Nodes at base of petioles with a pair of glands; corolla less than 3 cm long, upper lip longer than lower lip *S. tubifera*
- 39. Nodes at base of petioles without a pair of glands; corolla up to 2.6 cm long, upper lip shorter than lower lip *S. microphylla*

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LITERATURE CITED

- RZEDOWSKI, J. and G. C. DE RZEDOWSKI, 1979. *Flora fanerogámica del Valle de México*, vol. 1. CECSA. México, D. F., 403 p.