

## Iowa *Solidago*

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Adapted from keys in Yatskievych, G. 2006. Steyermark's Flora of Missouri Volume 2. Missouri Botanical Garden Press; Voss, E.G. and A.A. Reznicek 2012. Field Manual of Michigan Flora. University of Michigan; Kaul, R.B., D.M. Sutherland, and S.B. Rolfsmeier. 2006. The Flora of Nebraska. School of Natural Resources, University of Nebraska-Lioncoln; Semple, J.C, and R.E. Cook. 2006. *Solidago*. In: Flora of North America Editorial Committee, eds. 1993+. Flora of North America North of Mexico. 21+ vols. New York and Oxford. Vol. 20

- 1a. Secondary inflorescences a terminal ± flat-topped (or somewhat domed to convex) corymbiform inflorescence; heads solitary or in small clusters at the branch tips
  - 2a. Disc and ray corollas white or less commonly pale cream-color.....*S. ptarmicoides* (upland white goldenrod)
  - 2b. Disc and ray corollas yellow
    - 3a. Leaves relatively narrow, blades linear, narrowly lanceolate, or narrowly oblanceolate, more than 10 times as long as wide, glabrous, margins entire; stems glabrous below the inflorescence .....*S. riddellii*  
(Riddell's goldenrod)
    - 3b. Leaves relatively broad, blades broadly oblanceolate to elliptic-obovate, ovate or oblong-elliptic, less than 3 times as long as wide, densely hairy, margins crenate or serrulate (subentire); stems densely short hairy.....  
.....*S. rigida* (rigid goldenrod)
- 1b. Secondary inflorescences either consisting of axillary clusters, or if terminal then elongate and racemose or pyramidal panicles; heads usually oriented upward and singly or in small clusters along the branches
  - 4a. Secondary inflorescences consisting of axillary clusters, or if terminal then the inflorescence narrow with small clusters of heads or spikelike branches in leaf axils along the main stem, the branches not arching with heads oriented in several directions
    - 5a. Stem glabrous below the inflorescence; upper leaf blade surfaces glabrous or sparsely puberulent
      - 6a. Basal and proximal cauline leaves tapering to a long petiole with a sheathing and clasping base, blades oblanceolate, 5 to 15 times longer than wide; plants in wetlands.....*S. uliginosa* (swamp goldenrod)
      - 6b. Basal and proximal cauline leaves tapered to a petiole, leaf bases not clasping, blades broadly ovate, broadly elliptic-ovate, oblanceolate, elliptic to obovate, 1.5 to 6 times longer than wide; plants in prairie, woodland or forest, clearly not a wetland
        - 7a. Leaf margins of basal and lower leaves entire to shallowly serrulate or crenulate, leaves mostly 4-5 times longer than wide; cypselae glabrous; secondary inflorescence typically dense, compact, broadly cylindrical, and paniculiform, consisting of axillary clusters or more commonly strongly ascending and racemiform branches.....*S. speciosa* (showy goldenrod)
        - 7b. Leaf margins of basal and lower leaves sharply and distinctly serrate, leaves mostly 1.5-3.5 times longer than wide; cypselae moderately to strongly strigose; secondary inflorescence open, diffuse, narrowly cylindrical and paniculiform, consisting of short axillary clusters, short axillary racemiform branches that do not exceed the subtending leaf bracts, and terminal racemiform clusters
          - 8a. Basal and lower cauline leaves the largest and longest, the leaves progressively reduced in size distally; stem ± straight.....*S. sciaphila* (cliff goldenrod)
          - 8b. Basal and lower cauline leaves smaller than the longest ones, which occur a third to a half of the way up the stem; stem tending to zigzag between upper nodes.....*S. flexicaulis* (zigzag goldenrod)
    - 5b. Stem pubescent below the inflorescence (strigulose, puberulent, hispid, or villous); upper leaf blade surfaces pubescent (scabrous, strigulose, hispid, or villous)
      - 9a. Basal and lowermost cauline leaves usually withered by flowering, middle and upper leaves clearly 3-veined; disc florets 3-8; cypselae sparsely strigillose;.....*S. mollis* (soft goldenrod)
      - 9b. Basal and lowermost leaves persistent and present at flowering, middle and upper leaves 1-veined; disc florets 6-12; cypselae glabrous.....*S. hispida* (hairy goldenrod)
  - 4b. Secondary inflorescences ± a terminal pyramidal panicle, the lower branches arching with heads mostly oriented upward

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- 10a. Cauline leaves (at least the main ones) “triple-nerved,” i.e., with a pair of elongate, lateral veins arising below the middle of the midrib that are distinctly stronger than other lateral veins, ± parallel with the leaf margins, and present for over half the length of the blade
  - 11a. Axis, branches and pedicels of the secondary inflorescence glabrous....*S. missouriensis* (Missouri goldenrod)
  - 11b. Axis, branches and pedicels of the secondary inflorescence sparsely to moderately and distinctly pubescent
    - 12a. Stem glabrous all of its length below the inflorescence, rarely with a few scattered, spreading, short hairs .....*S. gigantea* (giant goldenrod)
    - 12b. Stem pubescent all or most of its length
      - 13a. Involucres mostly 3.1-4.6 (-5) mm long; ray florets 10-16, ray corollas 3.0-4.0 mm, disc corollas 3.0-3.5 mm; pappi 2.5-3.5 mm; mid to distal cauline leaves minutely serrate to entire ...*S. altissima* (tall goldenrod)
      - 13b. Involucres mostly 2.0-3.0 mm long; ray florets 6-12, ray corollas 2.0-3.0 mm, disc corollas 2.3-2.7 mm; pappi 1.8-2.2 mm; mid to distal cauline leaves evidently serrate.....*S. canadensis* (Canada goldenrod)
- 10b. Cauline leaves with a distinct midrib but the other weaker veins ± pinnate, not triple-nerved
  - 14a. Stems moderately to densely pubescent with curved to spreading hairs, sometimes becoming less dense toward the stem base; plants in upland, non-wetland habitats
    - 15a. Stems and leaves densely pubescent with minute (0.1-0.3 mm) mostly curved hairs; leaves surfaces dull green (grayish); plants of dry grassland, prairie, open woodland .....*S. nemoralis* (gray goldenrod)
    - 15b. Stems and leaves moderately pubescent with longer (0.5-1.5 mm) mostly spreading hairs; leaf surfaces clear green; plants of upland savanna, woodland or forest.....*S. ulmifolia* (elm-leaf goldenrod)
  - 14b. Stems below the inflorescence glabrous or sparsely pubescent with mostly spreading hairs; plants in wetland habitats.....*S. patula* (rough-leaf goldenrod)