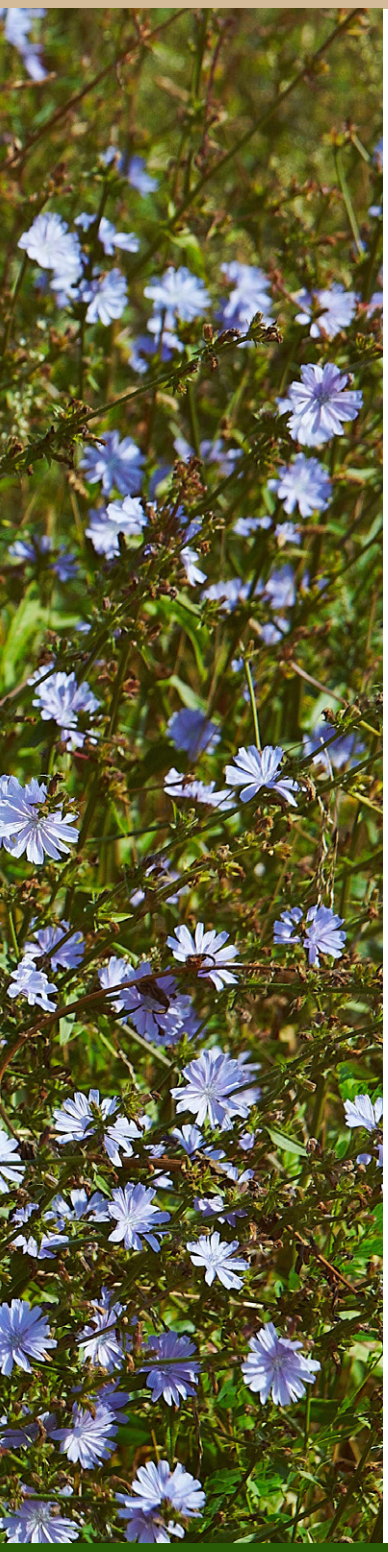
USDA United States Department of Agriculture

Illinois Grazing Manual Fact Sheet

SPECIES • ANNUAL AND ALTERNATIVE

Chicory



General Information

Forage chicory (Cichorium intybus L.) is a relatively deep tap-rooted perennial broadleaf cool-season herb that belongs to the sunflower family. Chicory produces leafy growth and if properly managed, is highly palatable and similar in nutritional value and mineral content to alfalfa or cool-season grasses. 'Wild' chicory, or the weed type, is commonly seen growing along roadsides and produces very low forage yields.

Chicory originated in Central Europe and has been grown in other countries for more than 300 years. Much recent breeding for improved forage characteristics has been done in New Zealand including development of the variety 'Puna', which has been marketed in the United States. Additional forage varieties include 'Forage Feast' and 'Lacerta'.

Adaptability

Chicory is suited to well or moderately well drained soils that have medium to optimum phosphorous and potassium levels and a soil pH of 5.5 or greater. Waterlogged, heavy clay soils tend to limit stand life.

Characteristics

Chicory has good seedling vigor and due to its relatively deep taproot tolerates drought conditions well. The taproot can be damaged by overgrazing, trampling, or frost heave. Chicory is a low-growing rosette plant with broad leaves in the winter, resembling dandelion. As temperatures warm in the spring, it produces large number of leaves from the crown. In the late spring, the year after establishment, a few flower stems begin to develop (or bolt) from the crown and the shoots will reach heights of 6 feet if not grazed.

Iowa State University trials show that Lacerta and Forage Feast were less winter hardy than was Puna. Lacerta and Forage Feast were more likely to 'bolt' in the seeding year, while Puna remained vegetative in the seeding year and bolted in subsequent years. Root and crown diseases caused Puna plants to die by about the 3rd or 4th growing season.

Establishment

A soil test is needed to determine fertility and pH levels. A firm, moist seedbed is needed for chicory, either seeded solo or in a mixture with grass or legume. Spring seedings have been the most successful, especially in areas of severe winters.

When seeding into a tilled seedbed, drilling is preferred over broadcasting. Good seed-to-soil contact is critical. No-till seeding of chicory into existing pastures has been successful, but proper management is needed to suppress the existing sod. If seeded solo, 3 - 5 pounds per acre planted

more ►

¼ to ½ inch deep should produce optimum stands. In mixtures, seed 2 - 3 pounds of chicory with amounts of the usual seeding rate of the other forage(s). Chicory is a non-legume and 35 pounds of nitrogen per acre should be applied at seeding. This amount can be reduced if chicory is seeded with a legume.

Management

Chicory is normally not grown in mono-culture (solo seeding) but is most often included in mixtures with grasses and legumes to add forage diversity, improve uniformity of growth during the grazing season, and have nitrogen 'fixed' by the legume.

If chicory is grown without a legume, 100 - 150 pounds of nitrogen per acre per year should be provided in split applications of 50 pounds per acre. The first application is green-up in early spring, then an optional application in early summer, and the third in early fall. Since nitrogen will stimulate stem growth, the forage yield increase must be weighed against the ability to keep chicory grazed so the stems do not bolt.

Spring seeded chicory can be grazed about 85 days after seeding but leave a 2-inch stubble. A rest period of 25 - 30 days between grazings is suggested. Forage production and persistence is optimized with rotational grazing.

After the seeding year, chicory will grow vigorously and will try to produce flowering stems (bolting). The rest period of 25 - 30 days mentioned above may need to be shortened, or grazing pressure regulated, or have additional mowing to prevent bolting, especially in the spring. Once bolting has occurred, production potential is reduced for the remainder of the grazing season or until the stems are mowed. Preventing bolting will extend the vegetative stage and forage productivity.

Yields (when chicory was solo seeded) in Illinois and Pennsylvania in the seeding year ranged from 2 - 3 tons of dry matter per acre; established stands produced 4 - 6 tons of dry matter per acre. Stands may last five years or more with good grazing management, but soil type, winter weather, and variety will be influencing factors.

Summary

Proper management is essential to obtain adequate yield, quality, and persistence from this unique forage crop. Additional research and experience will help identify varieties with reduced bolting and stand persistence.

Where to Get Help

For more information about chicory contact the local office of the Natural Resources Conservation Service (NRCS) or University of Illinois Extension.

Acknowledgments

Information in this fact sheet was adapted from a number of sources, including Penn State University, Kansas State University, Iowa State University and Forages: An Introduction to Grassland Agriculture, Volume 1, 6th Edition.