

Forage Factsheet – Alfalfa

Species Name: Alfalfa - *Medicago sativa*

Alfalfa can have creeping or tap root systems. *Medicago falcata* is a yellow flowered tap rooted alfalfa with superior hardiness, but lower yield potential.

Tap-root type alfalfas have a narrow crown and a deep tap root with limited branching roots.

Creeping-root type alfalfas have a tap root and thick, spreading horizontal roots. Generally, the crown is wider and set deeper into the ground than tap root type alfalfas.

Origin: Europe, Middle East, Siberia

Longevity: 3-20 years. Creeping rooted alfalfa generally survives for long periods of time, but management has a significant impact on longevity. Cultivars have varying levels of winter hardiness and disease resistance, which is a major factor determining longevity.

Uses: hay, pasture, stockpiling

Optimal time of use: Cut alfalfa at 10% bloom to obtain the best compromise between yield and nutritional value. After cutting, alfalfa may be stockpiled to provide a source of fall grazing after the first killing frost. Grazing can begin at the bud stage. Do not graze to less than four inches (10 cm) tall.

Recovery after use: Alfalfa should be allowed to regrow to the bud stage before recutting or grazing. Avoid use for six weeks prior to killing frost to reduce winter injury.

Yield: On average, creeping-root type alfalfa tends to yield less than tap-root type alfalfa in wet areas and more in drier areas. Creeping-root type alfalfa yields approximately 3230 lbs/acre (3670 kg/ha) in the Brown soil zone, 6760 lbs/acre (7681 kg/ha) in the Dark Brown soil zone, and 5590 lbs/acre (6352 kg/ha) in the Black and Grey soil zones. Tap-root type alfalfa yields approximately 3130 lbs/acre (3556 kg/ha) in the Brown soil zone, 6249 lbs/acre (7101 kg/ha) in the Dark Brown soil zone, and 5590 lbs/acre (6352 kg/ha) in the Black and Grey soil zones.

Recommended initial stocking rates are 1.2 AUM/acre (3 AUM/ha) in the Brown soil zone, and 1.8 AUM/acre (4.0 AUM/ha) in the Dark Brown, Black and Grey soil zones.

Palatability/Nutritional Value: Alfalfa is highly palatable and can have crude protein levels as high as 21% and digestible dry matter levels of approximately 71%. Alfalfa causes bloat in livestock with the risk greatest during rapid plant growth.

Competitiveness: Alfalfa is competitive. Stand thinning due to winter injury or disease can lead to an increase in weeds. Creeping-root alfalfa can spread by developing new shoots from creeping rootstocks.

Winter Hardiness: Winter hardiness in alfalfa is highly variable, depending on the cultivar. Alfalfa can range from non-dormant (no winter hardiness) to very winter hardy. Generally, creeping rooted types are more winter hardy and stress tolerant than tap rooted types. Select the appropriate cultivar for the objectives of the stand. Management can have a large impact on winter hardiness.

Drought Tolerance: Alfalfa has a deep root system allowing it to access subsoil moisture more effectively than other forage species.

Erosion Control: Alfalfa has fair erosion control potential.

Ease of Establishment: Alfalfa establishes readily.

Suggested Mixtures: Crested wheatgrass, meadow brome grass, timothy, intermediate wheatgrass, smooth brome grass.

Salinity Tolerance: Alfalfa has fair salinity tolerance.

Flooding Tolerance: Alfalfa can withstand one to two weeks of spring flooding or waterlogged soils prior to spring growth.

Soil Texture: Alfalfa prefers well drained sandy, loamy or clay soils in all soil zones.

Acidity Tolerance: Alfalfa tolerates soil pH as low as 6.2.

Source: Saskatchewan Forage Council, 2007.
Dryland Forage Species Adaptation CD.

Management Considerations: Alfalfa responds well to fertilization with phosphorous, sulfur and possibly micronutrients. Avoid use (grazing or cutting) during the fall critical period (six weeks prior to frost). Select a cultivar adapted to the area and intended use of the stand. Inoculate alfalfa seed prior to seeding.