

Alfalfa in North America

E. Charles Brummer^{1}, Dan Putnam¹, Dan Sumner¹, Bill Matthews¹, Vern Baron², Marisol Berti³, Bill Biligetu⁴, Arvid Boe⁵, Kim Cassida⁶, Annie Claessens⁷, Dennis Hancock⁸, Brian Irish⁹, Rocky Lemus¹⁰, Doohong Min¹¹, Virginia Moore¹², Ian Ray¹³, Esteban Rios¹⁴, Jennifer Tucker¹⁵*

Alfalfa (*Medicago sativa* L.) is the most important harvested forage in North America. It is grown from the cold northern prairies to the searing deserts of Arizona and Mexico. Approximately 7 million hectares are grown in the US, 3 million ha in Canada, and 600,000 ha in Mexico. It is grown in many systems for hay, haylage, greenchop, or pasture; and intensive alfalfa production is typically in rotation with maize, high-value vegetables or other field crops. Nearly 100% of Mexico's production and approximately 50% of US and Canadian production is irrigated. All types of irrigation are used to produce alfalfa in the west, including center pivots, linear and wheel-line irrigation systems, and flood irrigation. Harvested alfalfa and grass hay/silage/greenchop is clearly the 3rd most important economic crop in the US, and sometimes alfalfa by itself is often 3rd in economic returns to farmers. However, this underestimates the economic value of alfalfa, which is in the end-product of milk and cream and cattle and calves, which produce a combined economic value of over \$100 billion each year in the US and are important foods for millions. A significant amount of alfalfa hay is exported from the western USA to Asia and the Middle East. Large hectareage of rangeland alfalfa in the western USA is not irrigated. Harvests range from 2 per year in northern areas to 9-11 cuts year in the desert southwest. Alfalfa seed is produced on approximately 140,000 ha in western US and Canada, and is a very specialized enterprise, with demanding practices. In addition to the economic value of alfalfa in North America, it contributes significantly to soil health, crop rotation, wildlife habitat, and biodiversity. The value of alfalfa to cropping systems and supporting grain and vegetable crop production, as well as to soil health, should not be underestimated.

¹Univ. of California, Davis; ²AAFC, Lacombe, AB; ³North Dakota State Univ.; ⁴Univ. of Saskatchewan; ⁵South Dakota State Univ.; ⁶Michigan State Univ.; ⁷AAFC, Ste. Foy, QC; ⁸USDA-ARS, Madison, WI; ⁹USDA-ARS, Prosser, WA; ¹⁰Mississippi State Univ.; ¹¹Kansas State Univ.; ¹²Cornell Univ.; ¹³New Mexico State Univ.; ¹⁴Univ. of Florida; ¹⁵Univ. of Georgia, Tifton.

*Corresponding author: ecbrummer@ucdavis.edu