

Alfalfa in South America

Daniel Basigalup^{1}, Ariel Odorizzi¹*

The objective of this paper is to provide an overview on the alfalfa situation in several South American countries in terms of cultivated area, forage yields, main uses and problems to solve.

Argentina: 3.2 million ha (7.9 million acres), 60% pure stands for milk, intensive beef, hay/silage and seed production and 40% in mixtures with temperate grasses for extensive beef production. Cultivars: > 120 from FD 5 to 10 are presently marketed. INTA conducts the National Alfalfa Cultivar Evaluation Network in 15 locations. Yields: from 4-5 MT DM ha⁻¹ year⁻¹ under semiarid and rain-fed conditions (3-4 cuts) to 24 MT DM ha⁻¹ year⁻¹ under irrigation (9-10 cuts). At present, there are two GE varieties deregulated. Hay exports in 2020: > 100,000 MT. Active and effective private and public breeding programs. Rotational grazing is widely used for beef and dairy.

Chile: 180,000 ha (445,000 acres), 70% in Central Region. Uses: as a winter supplement (green chop, direct grazing or pellets) for intensive dairy, intensive beef and extensive beef and sheep production systems. Yields: a) Irrigated Central Region: 25 MT DM ha⁻¹ year⁻¹ with FD 8-9 (up to 8 cuts); b) Central-South (rain-fed conditions): 5-13 MT DM ha⁻¹ year⁻¹ with FD 5-8; c) Patagonia (South): 18-21 MT DM ha⁻¹ year⁻¹ under rain-fed conditions; and d) Magallanes (Far South): 5-12 MT DM ha⁻¹ year⁻¹ with FD 3-4 cultivars.

Peru: 120,000 ha (296,400 acres), mainly on the coast. Alfalfa is grown from temperate to warm climates and altitudes from 1,500 to 3,000 m. Yields: a) cold areas (FD 4-5): 8 MT DM ha⁻¹ year⁻¹ (3 cuts); b) Irrigated coastal areas (FD 8-9): up to 32 MT DM ha⁻¹ year⁻¹ (11-12 cuts); c) Inter-coastal and Andean valleys: 12 MT DM ha⁻¹ year⁻¹ (FD 5-7 with 6-8 cuts) to 30 MT ha⁻¹ year⁻¹ (FD 8-9 with up to 11-12 cuts); and d) Puna (High Plateau): 7-10 MT DM ha⁻¹ year⁻¹ (FD 3-5 with 2-3 cuts). Uses: green chop or hay for cattle, horses, sheep, goats and rabbits. Cultivars: landraces and imported varieties (some).

Bolivia: 70,000 ha (173,000 acres) concentrated in the Central-West and SW valleys (2,000 -3,000 m altitude) and the High Plateau (3,000-4,000 m). Uses: green soiling for dairy (valleys) and direct grazing for beef and dairy (High Plateau). Yields: Valleys: 19 MT DM ha⁻¹ year⁻¹ with FD 7-9 and 7-8 cuts; High Plateau: up to 14 MT DM ha⁻¹ year⁻¹ with 3 cuts and FD 3-4 under irrigation.

Uruguay: 70,000 ha (173,000 acres), mostly on the West: 60% under direct grazing for dairy and intensive beef production, 30% for hay and 10% for silage or seeds. Main problems: soils with low P, acid pH, insufficient drainage and hard layers. Must inoculate with rhizobia. Uses: a) hay: FD 5-7 cultivars produce 8 MT DM ha⁻¹ year⁻¹ with 5-6 cuts; and b) grazing: FD 7-9 cultivars yield 12 MT DM ha⁻¹ year⁻¹. Cultivars: Crioula and Estanzuela Chaná are the most popular.

Brazil: 40,000 ha (99,000 acres), concentrated in the South. Great possibilities to expand the crop to the SE and Central-West. Main problems: lack of improved cultivars adapted to tropical conditions (low fertility soils & acid pH) and insufficient crop management knowledge. Mainly used cultivar (landrace) is Crioula (and its regional variants). Uses: hay and direct grazing for dairy and hay, and pellets for horses and pets. Yields: 10 to 23 MT DM ha⁻¹ year⁻¹ with 8-10 cuts and supplemental irrigation.

¹Instituto Nacional de Tecnología Agropecuaria (INTA), EEA Manfredi, Argentina.

*Corresponding author: basigalup.daniel@inta.gob.ar