

# The Prickly Pears ( *Opuntia* spp., Cactaceae).

## Abstract

The prickly-pears (*Opuntia* spp., Cactaceae): a source of human and animal food in semiarid regions. Russell, CE and Felker, P. 1987. *Economic Botany*. 1987, 41: 3, 433-445.

Literature on the uses of *Opuntia* spp. is reviewed. The genus *Opuntia* appears to have its centre of genetic diversity in Mexico where it is widely used as fodder, forage, fruit and a green vegetable. In SW USA, *Opuntia* spp. can be both weeds and valuable forage plants.

During droughts propane torches known as 'pear burners' are used to singe the spines off cactus pads so that they can be eaten by livestock. Although spineless *Opuntia* varieties can be consumed directly by domestic livestock, they are extremely susceptible to herbivory by wildlife. The Cactaceae can be 4- to 5-times more efficient in converting water to DM than the most efficient grasses. Some *Opuntia* strains grow rapidly with fresh fruit yields of 8-12 t/ha year, and DM vegetative production of 20-50 t/ha year.

The Tamaulipan biotic province of South Texas and northeastern Mexico is a semiarid to subhumid environment. Local ranchers maintain that 3 or 4 out of 7 years will be drought years from the standpoint of obtaining a grass crop on rangelands. This unpredictability creates problems for range management that frequently result in rangelands being severely degraded by overgrazing.

Large sums of money are frequently spent to convert coastal plain and chaparral into grassland that can be maintained only for limited periods. Stocking rates based on the estimated forage production of the introduced grasses generally use the average rainfall estimate, which is not predictable for the anticipated growing season.

In the light of the known variability of the precipitation regimen, we believe that prickly-pear should be included in any range management scheme in the Tamaulipan biotic province and similar areas of

the world. During favorable forage production years, these cacti - protected from herbivory by their spines - would sequester minerals and water while producing carbohydrates and vitamins, which could be made available during drought years more economically than alternative feeds by burning off their spines.

In South Texas, prickly-pear (e.g., *O. lindheimeri*) is widely known as an emergency drought feed for cattle. In drought periods when grasses have been overgrazed or have become senescent, this cactus remains succulent and green, with a normal complement of vitamins and carotenoids (precursor to vitamin A). During the drought of the 1950s in Texas, prickly-pear was held in high esteem by cattlemen.

We suggest that prickly-pear can be grown as a fodder crop on land presently deemed marginal for other crops (e.g., maize and sorghum) because of its greater water-use efficiency. This fodder can be of either the spiny or spineless varieties. As an alternative to burning off the spines with a brush harrow, harvested spiny pad

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