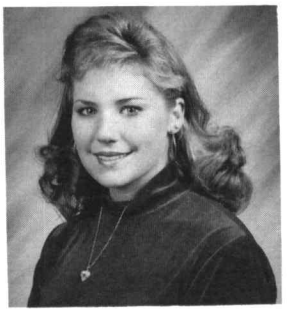

The Significance of Prickly Pear on South Texas Rangelands

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Hot, dry, almost desert conditions—south Texas rangelands. In the middle of summer it can seem almost uninhabitable. In the dead of winter it can appear as barren as a desert. Rainfall in this part of Texas is sporadic at best. Occasionally conditions can be lush and green, a ranchers' dream. But generally speaking, it doesn't last long. What kind of native plant life grows in this kind of environment? Mesquite trees, various brushes, hearty native grasses, and the cactus. The most abundant variety of the cacti is prickly pear. This almost indestructible plant can be a blessing to south Texas ranchers in times of drought and hard winters. Area wildlife depends on it for survival. And lately, it has been used for human consumption.

Prickly pear is a group of cacti consisting of jointed, flattened stems called pads. These fleshy pads enable the prickly pear to store water and withstand long periods of drought. There are about 25 different species of prickly pear all belonging to the genus *Opuntia*. Propagation of the plant can be in the form of cloning. That is, each pad, if broken away, can form a new plant that is genetically identical to the original. Prickly pear may also reproduce from seeds that are produced in the fruit, or tunas, of the plant. As the tunas, or "pear apples", are eaten by livestock and wildlife, the seeds are passed through the digestive system. The new plant from seeds will not be identical to its parent, but may have the genetic make up of two plants, and therefore small variations in the new plant may be seen.

Prickly pear may be found in varying densities in almost every part of Texas except the north east, and it covers an area of approximately 54 million acres. This is an area approximately the size of Utah. Prickly pear is often viewed as a "mixed blessing" in Texas. In the sheep and goat producing areas of Texas, mainly the Edwards Plateau region, this cactus is viewed as a problem. It is not an advisable feed source due to the many health problems associated with its consumption. Ulceration and infection of the lips, tongue, gums, palate, and gastrointestinal tract are symptoms from ingesting the spines. The seeds of the tunas may also cause rumen impaction which results in death. When a more desirable forage is not available, the sheep and goats begin eating the prickly pear. The economic loss is felt greatly by ranchers in this region.

However, south Texas cattle ranchers tell a different story. In times of drought or hard winters, ranchers must rely on the prickly pear to feed their cattle. Prickly pear is considered an effective emergency feed and has been used for more than 150 years by ranchers in Texas and northern Mexico. While there are several different methods of feeding prickly pear, it is absolutely necessary that the spines are singed from both sides of the pads. It is important to only singe the spines and not cook the pear. Cooked pear is just as detrimental to cattle as not burning the spines completely, as it may cause scouring.

The most common tool for singeing the spines is the pear burner. A pear burner is a flame thrower that consists of a fuel tank (usually 5-gallon), a hose, a wand, and a burner. An individual carries the tank over his shoulder and moves from plant to plant. The hand-held burners are the most common and have been used for many years by ranchers. A larger tank may be mounted in the back of a pickup or on a trailer and equipped with a long hose. One person drives the vehicle while another operates the burner, thus saving time and energy on the rancher's part. Yet another form of modification is to mount torches on a tractor operated boom. While this method can burn very large amounts of pear at a time, it also tends to waste fuel. The burners used today are fueled with propane instead of kerosene, diesel, or gasoline. Propane is less dangerous and is a cheaper source of fuel. The cost of propane today is about $1.09 per gallon. When burning by hand, it is recommended to have a second burner on hand in case of breakdown because the rancher will not have to keep hungry cattle waiting while the "only burner on the place" is being repaired.

While moving from plant to plant is the most common way to burn pear, there are other methods. Prickly pear may be chopped, windrowed, and singed, and then fed in troughs. Non-singed prickly pear may be cut and stockpiled for several weeks before chopping and burning. Twice as many cattle can be fed on a given acreage by feeding in troughs as there is less pad waste, and the plant is better utilized. Fuel is also used more efficiently. However, this method is very labor intensive.

When considering the nutritional aspects of feeding prickly pear, ranchers and researchers will often times disagree. Scientifically, prickly pear is not a good feed source. In fact, it is considered to be poor. It is very high in fiber and ash which can cause digestive upsets. It is low in crude and digestible protein. Therefore, when feeding prickly pear, cattle should be supplemented with dry matter such as hay or cottonseed hulls, as well as salt and mineral supplements.

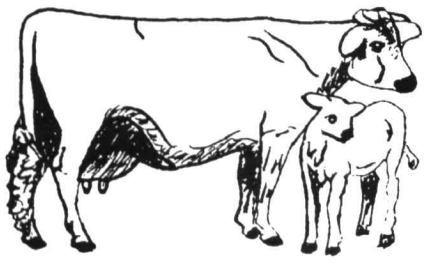
Ranchers consider prickly pear to be an excellent emergency feed source. It is high in energy levels, and since energy is needed in the greatest amount in times of stress (drought, hard winter), prickly pear can be considered a "good feed" even though it is somewhat unbalanced. South Texas ranchers use prickly pear as a "hollow belly" cure. A 1988 survey indicated that 40% of ranchers in this area feed prickly pear, not only as emergency feed, but as part of a nutritionally managed plan. When looking for cattle lease rangeland, many ranchers consider only "pear pasture".

When using prickly pear as a feed source, there are a few suggestions to keep in mind.

(1) Keep cattle in a small fenced-in area of prickly pear. This reduces the amount of energy used by the cattle.
(2) Burn pear daily as opposed to every other day. Burning every other day forces the cattle to gorge themselves, which leads to scouring and then wandering in search of other food. Proper burning by the rancher will control movement of cattle.
(3) Feed a roughage, such as hay, and protein and mineral supplements.

It has been often said by south Texas ranchers that the prickly pear is a valuable forage plant, and, without it, the stockman could not bring his herd through a drought or bad winter alive.

Not only is livestock in south Texas dependent on prickly pear, but also is wildlife. Many wildlife species in this region rely on the prickly pear for food, water, and cover. Leasing range and pasture lands for hunting has become a big business in south Texas. White-tailed deer, quail, and javelina are the species most sought after by hunting enthusiasts. The javelina, or peccary, benefits the most from prickly pear. It is only found where prickly pear is abundant because it comprises 85% of the javelina's diet. During the months of October through March, the javelina feed mostly on the pear pads. Then during the months of April through September, the tunas become the important part of the plant for them to eat. The javelina cannot survive without prickly pear.



In addition, the bobwhite quail, a very popular game bird, uses prickly pear not only as a food source, but also as cover. While the pear bush does not offer enough shade for a nesting site, it serves as excellent travel cover and escape from predators.

The white-tailed deer is probably the most important game animal, and in many instances, the land owner may receive more income from hunters seeking a trophy white-tailed buck than he could receive for cattle grazing rights. The average price per acre in south Texas brush country for a cattle lease is $3. For quail, a hunter can expect to pay an average of $4 per acre, while deer leases run an average of $6 per acre.

Prickly pear comprises 21% of the white-tailed deer's annual diet. The plant is heavily selected from June through September and, at that time may make up as much as 33% of their diet. Minimal consumption is found during the late winter and early spring. Along with food value, the deer use the pear bushes as cover for young fawns.

Many other species of wildlife are dependent upon the prickly pear for food, shelter, and cover. The Texas tortoise, a protected species, relies upon this cactus for its survival. The roadrunner, one of Texas' favorite inhabitants, uses the prickly pear for its nesting site as well as for food and cover. Rattlesnakes, jack rabbits, butterflies, and honey bees, (the list goes on and on), all use the prickly pear in some form or another. It has been predicted that a 50% to 70% reduction of prickly pear would have a negative influence on most wildlife habitat in Texas.

Recently it has been discovered that prickly pear is an excellent food source for human consumption. It serves as a fruit (the tuna or pear apple) and a vegetable (the young tender pads). The large, sweet, pear apples can be eaten raw, prepared as a jelly, or candied. Also a seed-free puree can be frozen for use in margaritas and dessert toppings. The young tender pads are called nopalitos and can be eaten in salads and omelets, or used as a garnish. More than 1.5 million pounds of pear apples are imported to the U.S. from Mexico each year. In addition, large amounts of nopalitos are also imported annually. The idea of cultivating prickly pear in south Texas for human consumption is just beginning to take hold.

Chefs are now becoming interested in using the nopalitos to make a low fat sausage and meringues from whipped mucilage. In many cultures cactus has been a part of traditional food and medicine for several years, but it is relatively new to the U.S. and much of Europe. It is estimated that Mexicans eat as much prickly pear as Americans eat cauliflower. Chefs are continuing to try new ways of using the prickly pear for human consumption, and the market for the prickly pear is continually growing.

In south Texas most ranchers do not control the prickly pear because they consider it valuable; instead, they try to encourage the growth of the plant. This may be accomplished by planting it in rows as a cultivated crop, which enables an easier method of burning or harvesting. Also discing, chaining, or railing pear patches will scatter pads and encourage the rooting, therefore, spreading the cactus. For those ranchers who do want to control the pear, there are several different methods of doing so. Prickly pear on rangeland may be controlled with prescribed burning, aerial or ground broadcast spraying with picloram, hand grubbing, and individual plant treatments with picloram using backpack or wheeled sprayers. The most effective method, however, is the combination of prescribed burning followed by aerial spraying of a reduced rate of picloram. After prescribed burning the prickly pear is severely weakened and is easily killed with less chemicals.

Friend or foe, prickly pear has its place in Texas. In south Texas its benefits far outweigh its disadvantages to livestock, wildlife, human consumers, and rangeland managers. It is up to each individual manager to evaluate his rangeland and determine the proper use for this prolific plant.

The author would like to express her appreciation to Dr. C. Wayne Hanselka, extension range specialist; Mr. Joe G. Herrera; the Atascosa County Soil and Water Conservation District; and the Atascosa County Extension Service; Atascosa County ranchers Kenneth Culpepper, Leroy Krueger, Larry Persyn, Lonnie Rakowitz, and Karl Rakowitz. All of these people provided her with materials and information to prepare this paper.

Editor's Note

This is the 1st Place winner of the High School Youth Forum presentations at the SRM Annual Meeting in Rapid City, South Dakota.