

Historical Use of Native Plants As Food

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This paper concerns native Saskatchewan prairie plants used for food by some of the Plains tribes of our area: the Blackfoot, Assiniboine, Cree, Hidatsa and Gros Ventre.

A typical prairie hillside near Saskatoon in early summer has a large number of native species growing on it, which are adapted to this particular environment. This habitat is typical of the ones where the Plains Indians found edible native plants. Useful food plants are not confined to the sheltered or moist habitats in river valleys and coulees, but also occur on the open prairie.

The Plains Indians had a long and intricate dependence on prairie ecosystems and had to know which plants were useful. Fortunately, much of this knowledge had been preserved in writings about traditional native life. These writings are the source of information for this paper. Without these, we would need to collect and analyse our prairie plant species for nutrient content and the presence of toxins before knowing what is edible and what is not. This kind of research is both expensive and time consuming. In addition, it does not address the questions of what are the best season for collection and the best methods of preparation of the foodstuff.

One of the most important staples in the Plains Indian diet is a native plant that grows on prairie hillsides. It has a large starchy root that grows about 15 cm. under the ground. It is called Indian Breadroot or Prairie Turnip (*Psoralea esculenta*). Native people gathered these roots with a long, pointed stick called a digging stick. They peeled the roots and hung them to dry in long strings for use in winter. The roots are starchy and were eaten like potatoes, cut into chunks and added to soups and stews or like flour, powdered and added to soups to thicken the broth.

The Indian Breadroot is one of our native prairie plants that has been analyzed for its nutritive value. Kaldy et al (1980) found that 69% of the dry weight is starch, and the roots contains a small amount of fairly high quality protein, including the amino acid lysine, which is lacking in cereals.

Breadroot is very palatable and in the 1840's, M. Lamare-Picquot, a French botanist, introduced it to France as a cultivated plant. At that time, the French potato crop was failing due to disease. The Breadroot was grown successfully for several years in France, but did not become established because the potato crop soon recovered and the need for a substitute vanished (Nute 1957).

Indian Breadroot is undoubtedly the most well known Plains Indian plant food, but there are many others. They are mostly berries and roots, eaten fresh or preserved dry for later use, but also include tree sap and bark, and green vegetables eaten fresh.

The most important berries were Saskatoon-berries (*Amelanchier alnifolia*) and Chokecherries (*Prunus virginiana*). Saskatoon-berries were gathered in large quantities, sun dried whole on hides on the ground and stored in hide sacks for winter use.

Chokecherries were also gathered in large quantities. They were crushed whole and formed into patties for drying. Why did the native people prepare Chokecherries in this apparently unpalatable way? In matters such as this, the Plains Indians acted from experience, not ignorance, although they were limited in the technologies available to them. If they lacked a technology to remove the pits on a large scale, they would have to eat the entire fruit, pits and all. But what about the cyanide that these pits contain? It is conceivable that crushing the berries and then drying them, either allowed the cyanide to escape or altered it so that it was safe to eat in considerable quantities.

Chokecherry preparation provides a good example of the need to learn details of food preparation when using anecdotal material as a source of information on what people eat.

The following list presents information on 19 other plants used for food by Plains tribes. In general, these uses are less well documented than those of the plants already mentioned; they are listed in a variety of sources as part of the diet but details on quantities used and the methods of preparation are lacking.

- 1 Wild Onion, *Allium* species: the raw bulbs were added to soups and stews for flavouring.
- 2 Western Wood Lily, *Lilium philadelphicum* var. *andinum*: bulbs were eaten raw or added to soups.
- 3 Aspen poplar, *Populus tremuloides*: inner bark was eaten raw by children in the spring as a snack.
- 4 Bur-oak, *Quercus macrocarpa*: acorns were roasted and dried for food.
- 5 Yellow umbrella plant, *Eriogonum flavum*: roots were eaten by children as a sweet snack.
- 6 Currants and Gooseberries, *Ribes* species: fruits were eaten fresh and dried.
- 7 Strawberries (*Fragaria* species) and Raspberries (*Rubus idaeus*): fruit were eaten fresh.
- 8 Rose hips, *Rosa* species: were cooked in various ways to feed very small children.
- 9 Milk vetch, Indian Milk vetch, *Astragalus aboriginum*, and Canada Milkvetch, *Astragalus canadensis*: roots were eaten raw or were dried and added to soups in winter.
- 10 Sweetvetch, *Hedysarum americanum*: roots were eaten raw.
- 11 Manitoba Maple, *Acer negundo*: sap was made into syrup.
- 12 Pin cushion cactus, *Coryphantha vivipara*: young fruit was eaten fresh as a snack.
- 13 Silverberry or Wolf-willow, *Elaeagnus commutata*: fruit were eaten in times of famine and also used as an addition to soups.
- 14 Thorny buffalo-berry, *Shepherdia argentea*: the dried fruits were added to soup and the fresh fruits were mashed to make juice.
- 15 Cow-parsnip, *Heracleum lanatum*: leaf and flower stalks were peeled and eaten fresh

or roasted.

- Yampah or Squawroot, *Perideridia gairdneri*: roots were eaten raw, especially as a childrens' snack, or dried to add to soups. This is another plant that has been analyzed nutritionally. It is a good source of starch (69% of the dry weight), and protein (only 16 6% of dry weight but very high quality, higher than beans, because of its mixture of amino acids). It also contains useful quantities of vitamins A and C. (Kaldy et al, 1980)
- 17 Red-osier dogwood, *Cornus stolonifera*: fruit were an important food item for some tribes and a famine food for others.
- 18 Bearberry, *Arctostaphylos uva-ursi*: fruit were dried and boiled or fried in grease.
- 19 Green Milkweed, *Asclepias viridiflora*: the root, dried or fresh, was added to soups.

In summary, there are a fair number of edible plants on our prairies. A few of these grow in sufficient quantity to be reliable staple foods for Plains Indians who lived in small groups and moved about a great deal. Others were used casually as a seasonal treat, or a lunch when away from home, and as such undoubtedly provided a low but continuous intake of fresh fruits and vegetables during the growing season.

Not far from here the Plains Indians were also farmers. The Mandan and Hidatsa tribes of the Missouri Valley in North Dakota raised a variety of beans, corn and squash. For several years now, some of these varieties have been grown in a demonstration garden at the Royal Museum of Natural History in Regina.

I think it is worth pointing out that the people who grew and gathered plants on the plains were the same as the "real" Plains Indians, the ones who chased buffalo on horseback. It should be remembered that the Indian on horseback is an image greatly enhanced by Hollywood and few people know about the role of plants in the lives of these people.

References cited:

Kaldy, M. S., A. Johnston and D.B. Wilson, 1980, Nutritive Value of Indian Bread-root, Squaw-root, and Jerusalem Artichoke, *Economic Botany*, 34(4), 352-357.

Nute, Grace Lee, 1957, Lamare-Picquot en Amérique du Nord, In :Les Botanistes Français en Amérique du Nord avant 1850, Centre National de la Recherche Scientifique, Paris-VII.