

NATIVE PLANTS AND NUTRITION
The University of Arizona and Blackfeet Community College

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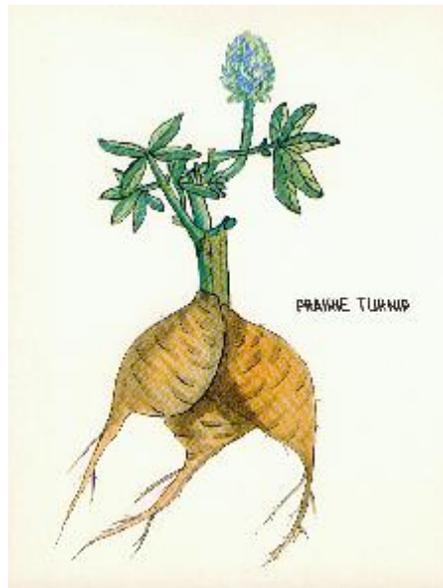
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NATIVE NUTRITION AND FOODS INITIATIVE RESEARCH

The University of Arizona
Tucson, Arizona
And
Blackfeet Community College
Blackfeet Nation
Browning, Montana

NATIVE PLANTS AND NUTRITION



This research was funded by the American Indian Small Grants Research Program, Native Peoples Technical Offices, of the University of Arizona, Tucson, Arizona. Recipient of grant award, Blackfeet Community College, Browning, Montana

Grant Period: July 2005 through October 2006

NATIVE PLANTS AND NUTRITION

Introduction

Ancestral Native North American people did not milk buffalo. So, from where did they get calcium? And what were the sources of vitamins and minerals that made them such a strong race as hunter-gatherers? What foods sustained them that maintained their healthy immunity system and strong physical structure until very old age?

In the past Native American people did not have diabetes, heart problems, high blood pressure and strokes that are now prevalent. Unlike the physical problems associated with today's diet, past generations of Native American people lived in excellent health that is now a memory for most. Will good health have to remain only a wishful memory of the past or can Native America people everywhere do something to reverse health conditions today? What can we do as Native Americans? How can all contribute in such a manner that will enrich the lives of Native people?

These questions and many more entered into our minds as we approached this research study on Native nutrition and foods. A team of three Blackfeet Community College research individuals and three students from the Blackfeet Native American Indian Reservation, Browning, Montana, have endeavored to take on the task of looking at the diet of Native American hunter-gatherers, specifically the Blackfeet Nation and with a bend including the Great Plains Indian food resources.

The team first reviewed Native American diet and plants in a wide-ranging area and found that many similar mainstay foods, consisting of protein, carbohydrates and fats, are found in most areas across the North American Nation. Second, we then narrowed the focus of research onto the Great Plains culture area and found a diet that is further similar in certain animals and plant sources due to the environment, geographical features, and soil composition. This area is known to be inhabited by nomadic hunter-gatherer, and farming Native Americans. The Blackfeet, a hunter-gather tribe, which moved on a seasonal cycle is considered one of the Great Plains Indian tribes located in its northern region. They are the source of primary, secondary and historical research references in this study.

The definition of (1) *Agriculture*: The science, art and business of cultivating soil, producing crops, and raising livestock; farming. The primary aim of agriculture is to cause the land to produce more abundantly. Branches of modern agriculture are agronomy, horticulture, entomology, animal husbandry and dairying. (2) *Hunter-gatherers*: People who live by hunting and foraging for wild game, fish, birds, gathering berries, fruits, nuts, wild vegetables, plants, and herbs with little or no agriculture (<http://www.answers.com>).

The line between an agricultural and hunter-gatherer tribal society is not clear cut. Many Native American tribes that are considered agriculturalist continue to hunt and gather year around, especially during the winter months. Conversely, many hunter-gather tribes would manipulate the landscape through cutting or burning un-useful plants while also encouraging those they could consume (ibid).

Archeological evidence supports that at approximately 11,000 years ago, in Europe and Asia there was a movement towards the deliberate cultivation of wild grains for gluten. Cultivation of gluten enhanced the rising (fluffy) quality, smoother texture and taste of bread products. There after began the first domestication and processing of wild grain plants, notably wheat, millet, and barley. On the American continent, Native American agriculturalist and hunter-gatherer tribes did not cultivate wild or domesticate grain plants specifically for gluten. There was no un-natural processing or manipulation, genetic or otherwise. Research supports that the Euro and Asian cultures that modified grains, especially for gluten purposes, developed diabetes and its associative diseases (Eades, 1996). In contrast it can be safely said that because Native Americans did not manipulate grains for gluten properties, there are no reported incidences of diabetes and associative diseases prior to the introduction of processed foods that contain gluten.

Concerning milk, Native American hunter-gatherer tribes did not domesticate animals for milk purposes. Further research supports that 80% of the global population is allergic to milk after a young age due to the lack of specific enzymes to break down the milk lactose (sugar). An individual's enzymes naturally decrease with age. Therefore, milk is best suited for babies and youth, preferably mother's breast milk (ibid.). Native Americans consumed calcium nutrition found in berries, leafy plants, stems, and roots. Today, most Native people report milk intolerance and subject to physical

ailments as a result of taking in milk and milk products. Studies have shown that Native Americans were strong people in body, mind and spirit. Their Native ancestors were lean with well developed bodies, sound teeth, dense bones and healthy before the introduction of cultivated and processed agricultural and diverse dairy foods (ibid).

There are food similarities between Native American tribes regardless of geographical location. Many of the same plant food sources are known by different names according to each tribe and that belong to a certain family or similar species of plants. Related plant species contain basically the same nutritional values. For example, the Blackfeet Savis berry is also known as Sarvis berry, June berry, Saskatoon berry, and Service berry to most Plains Indian tribes. Natives in the northeast region of United States know the Savis berry to be called Shadbush, Sugar Plum, and Indian Cherry. The United States Department of Agriculture calls this same berry the Downy Service Berry. The differences between plant species are slight. Nutritional values are fundamentally parallel. These berries contain a fair amount of vitamin C and the seeds are considered anti-carcinogenic, anti-oxidant and anti-aging.

This research flows from a beginning with an outline on tribes that comprise the Great Plains culture area, and a brief history of the Blackfeet Nation followed by information on Blackfeet today. It is important to understand the general history of the Blackfeet Tribe in order to gain insight on the progression of Native nutrition, plants and health conditions that are now affecting Native American tribes today. The study on Blackfeet foods and history is exemplary of the forced cultural impact and life-style changes upon Native tribes across North America. The Blackfeet history begins in 1730, approximately the time when guns, horses and small pox first appeared, thus, altering the life of the Blackfeet forever. The 1730 period is followed by the 1855 Lane Bulls treaty that brought a greater abundance of United States government "rations" (flour, sugar, coffee, lard and etc.). This same period includes the beginning of missionary school system as a means of education and assimilation of the dominant culture's food/life ways, philosophy, and religion, therefore, effectively altering the health of Blackfeet.

Interviews with Blackfeet elders and community institutions were conducted from August 2005 through August 2006 and are included herein in essay and reference form. The interviews provided the research team information on

Blackfeet cultural history, seasonal movements, foods and food sources; how foods were/are gathered, and prepared. The Native Plants and Nutrition section of this research identify 58 plants and berries commonly consumed by the Blackfeet people. A brief overview of the USDA “Food Guide” and “My Pyramid” is reviewed as well as the new American Diabetes Association “Food Guide Pyramid,” a Paleolithic hunter-gatherer pyramid, and Marietta King’s “Food Pyramid Lodge.” These food guides are included for comparison of changes in creating health diets.

Finally, the summary of this research concludes a brief outline of the information covered followed by suggestions for further research. Research suggestion indicates that although we may identify the healthy nutritional aspects of Native American foods, new scientific evidence encourages study upon the physical assimilation of healthy foods in relationship to environment and life-styles. Where we live, how we conduct our life and perceptions is a contributing factor of food and nutrition digestion. Nutrition digestion ultimately affects our physical aging, immunity, and mental abilities. In addition, while conducting this study the research found that the Blackfeet were at one time a pure race of blood type “A.” Most other tribes are type “O” blood. Although this research does not focus upon blood types in relationship with race, diet and nutrition, it may well be worth noting for future research. Identified in the bibliography are article sources on Native American blood types.

Benefits of this Research

All Native Americans living on tribal land reservations, rural, and city, will find this information valuable as well as governmental programs, institutions and the general public; (1) an over all understanding on the progression of Native American diet, nutrition, foods, and health from pre-contact (non-native) time to present, (2) historical identification of nutritional plant and berry foods, (3) nutritional value of wild plants that will benefit Native American diet today, (4) wild foods identified can be grown in gardens and living environments, (5) an over-all demonstration on the importance and affects of maintaining tribal cultural foods.

About the Appendages

There are no inserts within the body of research. The appendage section is a supporting unit of the written research and list maps, Blackfeet chronology, student information, interviews, graphics of food pyramids, and healthy food recipes using the identified wild plant food sources.

I
INDIANS OF THE GREAT PLAINS CULTURE AREA & HISTORY OF
THE BLACKFEET NATION

The area identified as the Great Plains culture area extends west from the Mississippi River Valley to the Rocky Mountains; and south from lower Manitoba, Saskatchewan and Alberta to southern Texas and is also known as the center region of the North American continent. It is a vast area that is predominantly short and tall grassland with stands of willows and cottonwood trees along the many river valleys. Topographically it is known for rolling plains, canyon land, igneous rock, some mountains and areas of sand hills/dunes. Rainfall varies according to climatic gradients from 10 to 40 inches a year (<http://www.usinfo.state.gov>); American Geography, Chapter 11). Nine States (in whole or part) encompass the Great Plains culture area; Colorado, Montana, Kansas, Nebraska, North Dakota, Oklahoma, South Dakota, Wyoming, and Texas (U.S. Department of the Interior, Bureau of Reclamation, 2006). See appendage map.

Mainly agricultural Natives inhabited the southern regions of the Great Plains while the hunter-gatherer tribes lived geographically to the northern region. Agricultural tribes were by nature more sedentary due to their ties to the land and farming demands while the hunter-gatherer tribes were more inclined towards nomadic and seasonal movements. Prior to the introduction of horses, dogs were trained to carry tribal goods. After the introduction of horses, both the southern agricultural and the northern hunter-gatherer tribes were able to move more freely due to the flexible usages of the horse.

Some of the Great Plains culture tribes are:

Apache	Kansa	Ponca	Cheyenne	Oto
Arapaho	Osage	Arikara	Hidatsa	Plains Cree
Comanche	Omaha	Mandan	Sioux Nations	Sarcee
Kiowa	Quapaw	Crow	Assiniboine	Pawnee
Gros Ventre	Plains Ojibwa		Blackfoot Nations	
Wichita	Kichai		Missouri	

History of the Blackfeet

The Blackfeet are comprised of four bands: Southern Peigan (Blackfeet), North Peigan, Siksika, and the Kainah (Bloods). Today some regard the “Blackfoot” to be the nations to the north in Canada while the term

“Blackfeet” is applied to the natives south of the border in the United States, although, this term is controversial as to how it is applied amongst tribesmen. The term Blackfoot at one time, and still does, represent all four bands regardless of geographic location. For the purposes of this paper the tribe is referred to Blackfeet and inclusive of all four tribal bands. In the past, before the 49th parallel or the Canadian/United States border, there were considered 3 branches: the Pikunni or Peigan, Siksika, and Kainah (Blood). Pikunni is the original name that the Blackfeet called themselves before Peigan was given to them by the European people. This is also true of the words Blackfeet and Blackfoot.

Before treaty negotiations, mid 1800’s, the Blackfeet Nation inhabited a large land base from the North Saskatchewan River, Alberta Canada; south to Yellowstone, Montana, and into northern parts of Wyoming; east to the Dakotas and; west to the Montana Rocky Mountains, Bitterroot Valley and beyond. Some say as far west as the Bigfork in western Montana (Senior Blackfeet Honorary Advisory Council Minutes 11/29-2005). This is a very large land mass of the Blackfeet tribes. The health and survival of the Blackfeet demanded a large land base for their subsistence on big game, bison, and foraging for important plant foods from roots, leafy greens and stems, berries, and the like. The hunting of wild game and gathering of wild plant foods determined their nomadic way of life.

In addition to meeting food resource requirements Blackfeet had other reasons for travel. In various locations are steam baths and mineral waters. White Sulphur Springs, located south-east of Great Falls, Montana, was one area that the Blackfeet frequented for health purposes. Another area is west of Augusta near Gibson Reservoir that is known by the Blackfeet as “the place that stays warm.” And of course Yellowstone area has long held reasons for health ventures of the Blackfeet and other neighboring tribes. Much of the written history on the Blackfeet states that they migrated from the eastern woodlands and are known as an Algonquian speaking people. According to Blackfeet scholars today, this simply is not true. Tribal oral genesis and history state that (1) the Blackfeet have always inhabited the fore mentioned land locale, the land that the Creator gave to them, and (2) that the Blackfeet have emerged from the same area even after the earth made its environment and climatic changes over the millennia. In fact it may be that the Blackfeet have always lived in their present location and traveled outward, thus, populating other areas of the northern continent (conversation with Shirley Crowshoe and Gert Heavy Runner, July 27,

2006). It is said that the Rocky Mountains are “baby mountains” in age by comparison to other hills and mountains within Blackfoot territory (conversation with Ira New Breast, 2006). It is from certain hills and mountains that the Blackfeet emerged after the last turn of the earth 11,000 years ago when the ice receded revealing the tops of the Rocky Mountains. It was along the mountain tops that the Blackfeet traveled (Ibid, Crowshoe and Heavy Runner).

The horses that we know today were obtained by the Blackfeet around 1730. This is about the same time that a few trade goods were introduced from the white man. Items such as guns, glass beads, metal objects (knives, axes, pots and etc), fabric and other material goods could be obtained through trade with other neighboring tribes. Prior to this time Natives all over North America were networking a form of commerce and trade, and had well established routes of travel. It is known that the Blackfeet made salt trekking trips to the south and traded items with natives from the east and west coast. A round trip would sometimes be 6 years and more to complete. The travelers brought home food items of spices, grain, roots and herbs and etc. (Blackfeet Senior Honorary Council, August 22, 2006).

Eventually, Hudson’s Bay Company built the Buckingham House along the Saskatchewan River in 1780. This was the first trading post close to Blackfoot Country. One year later, 1781, one-half of the Blackfoot population dies due to the small pox epidemic. This research estimates that the approximate Blackfeet population after this epidemic would have been 20 to 30,000. Definite life changes were beginning to take place for the Blackfeet then, and more fur traders and trappers began to move onto Blackfeet territory. In 1819 one-third of the Blackfeet die due to a coughing epidemic (Hungry Wolf, 1989)

Meriwether Lewis and William Clark expedition amongst the plains Indians during 1804 to 1806 documents many of the plants and foods that the Blackfeet and neighboring tribes gathered. Their botanical journals also include how some foods were prepared, stored, tribal lore and lifestyles of the “high plains” tribes during this time (H. Wayne Phillips, 2003). Lewis and Clark more than once stated that if it were not for the hospitable generosity and nutritious foods given them by various tribes, they would have famished nutritionally and weakened in physical, perhaps even starved to death. Amongst the Blackfeet however, Lewis and Clark were not favored and they chose to lodge at Fort Mandan during the winter months.

Nevertheless, they passed through Blackfoot country and collected many plants species. Lewis and Clark navigated through pristine plains and wilderness. They witnessed the abundance of Native American living, environment, and foresaw many of the changes to come (Moulton, 1983-99). Artist George Catlin in 1832 was the first white artist to paint the Blackfeet calling them “perhaps the most powerful tribe of Indians on the continent” (Hungry Wolf, 1986); and in 1833 German Prince Maximilian and artist Karl Bodmer visit and live with the Blackfeet. They estimated that there were approximately 18,000 to 20,000 people at that time. Twenty-five years later, 1855, establishes another major era for the Blackfeet (ibid).

Lame Bull Treaty was signed by leaders of the Blackfeet tribe gathered at the mouth of the Marias and Judith Rivers on October 17, 1855. Other tribes present were the Gros Ventre, Flathead [Salish], Upper Pend d’ Oreille, Kootenai, Nez Perce, and Cree. Henry A. Kennerly (1835 - 1913) in his memoirs, *The 1855 Blackfeet Treaty Council*, states that:

“The Council lasted for some six or seven days and each day the Indians, including men, women, and children, several thousand in number, would assemble and seat themselves in a semi-circular group on the ground Now came the distribution of presents, which consisted of blankets, cloth, calicos, in fact dry goods of all description: sugar, coffee, beans, dried apples, etc. . . . For several days thereafter all hands had much pleasure in visiting and witnessing (to us) the strange habits of this wild race of people. Then came the breaking up of camp and the Indians were moving off to their respective haunts. Anyone who might have gone in pursuit of them could have easily followed their trail by observing the flour, beans, rice, hominy, dried apples, etc., that had been strewn upon the ground along their path. As they knew not how to prepare these articles for food and as they were too much of a burden, they disposed of them in this manner and saved only the sacks that contained these articles and made wearing apparel from them. About the only articles of provisions that were distributed among them that were retained were the sugar, and tea.”

This treaty defined tribal territories and proclaimed peace between the tribes and the U.S. Government. In exchange the attending tribal participants were given sacks of processed white flour, sugar, tea and etc. These staples became their introduction to foods that have eventually contributed to the

present health conditions of the Blackfeet today. Basically, Lame Bull Treaty was set forth by the United States Government to delineate the first reservation boundary line that the Blackfeet had ever known. The treaties major components were concentrated upon safe travel through Blackfeet country and hunting rights amongst the tribes in the northern region of the Great Plains. After the signing of this treaty other U.S. forts and agencies sprung up in various places in present day Montana. Between 1855 and 1900 the Blackfeet homelands receded by way of executive orders and non-ratified agreements. The health of the Blackfeet was also on a decline as a result. This was due to the encroachment upon Native territory that long held the subsistence upon which the tribe depended. With smaller territory to hunt-gather combined with the oncoming presence of white America, the resources diminished. In 1883, Blackfeet and many other tribes of the Great Plains culture suffered hardship and ill health when it was considered that all of the bison were gone (see Blackfeet chronological chart and Lame Bull Treaty in appendage).

Bison, commonly known as buffalo, were the mainstay of the many tribes living within the Great Plains culture area. Blackfeet genesis has it that the Creator gave the buffalo to the Blackfeet for consumption and functional needs. Lodges (teepee), clothing, household utensils, medicine, toys, food, medicine and much more were all derived from the bison. In 1883 (28 years after the Lame Bull Treaty), thousands of Natives everywhere literally starved to death for lack of food, nutrition, and materials, that was provided by the buffalo. This time is known as “starvation winter” by the Blackfeet. In addition during the late 1800’s and on into the early 1900’s there was held a common fear for their very life should they wander from their community. It was not unusual that Blackfeet were killed on site if found off of the reservation. This held true for other Native American tribes as well. Infectious diseases that were brought on by contact with white American people were also an imminent danger for the Blackfeet. Thus, gathering plants and hunting wild game for nutritional sustenance support was next to nil.

During the turn of the century and on into the early 1900’s the U.S. Government rations and federal programs were instituted on the Blackfeet reservation as well as Catholic churches and missionary schools. These programs promoted the assimilation of the American diet upon the Natives in the Great Plains culture area. The missionary schools had small gardens and root cellars wherein the children learned basic gardening techniques.

They also learned white man's crafts such as cooking, sewing, cleaning and etc.. The hunter-gatherer tribes were given agricultural tools and were instructed farming while others tried ranching beef cattle. At first, the Blackfeet were actually quite successful in both areas but due to the limited growing season, climate decline (severe cold weather and other weather changes), the land was not conducive to agriculturalism, and poor Government management by reservation administrative agents, Blackfeet farming and ranching declined (Blackfeet Livestock Report and Field Survey, 1921).

Seasonal Movements of the Blackfeet

All bands of the Blackfeet did not move together during their seasonal movements. Rather, subdivisions within each of the major bands, North/South Peigan, Siksika and Kainah, moved according to their practiced custom and leadership. Adolf and Beverly Hungry Wolf in their book, *Indian Tribes of the Northern Rockies* (1989), outline some of the major Blackfeet band divisions and subdivisions along with leadership names. For example some of the Southern Peigan Head Chiefs from their book are:

Name (leader)	Band	Time
Lone Walker	Small Robes	1815
Lame Bull (Lone Chief)	Hard-Top-Knots	1855
Little Dog	Black-Parched-Moccasins	1866
Big Lake	Hard-Top-Knots	1866
Little Plume	Worms	1876
Three Suns (Big Nose)	Fat Roasters	1877 - 1896
White Calf	Skunks	1877 - 1903

Each one of the above leaders would have seasonally moved their camp. A Blackfeet band subdivision held minimally 15 to 20 lodges (usually a greater number) with an average of 8 persons per lodge (ibid). Their purposes for moving camp was affected by varying reasons such as foraging for food and hunting, climate, safety, tribal gatherings and etc. It is important to recognize the seasonal movements of a nomadic hunter-gatherer tribe because it strengthens the identification of food resources, when planted, harvested, and how it may be stored. It is possible to surmise the travels of our Native ancestors by reviewing the eco system and growth periods of plants in a geographical area.

During these movements it is well known that Blackfeet practiced a system of burning or setting on fire areas of land. By doing so, it would insure a healthy crop of both wild and cultivated bushes, plants, and grasses for human and animal consumption. For instance, the Blackfeet knew that where the healthy bushes and grassy plains were, so too were the bison. The process of burning away promoted the new brush and healthy grass that the bison preferred. This process would also greatly enhance edible roots such as the prairie potato, turnip, camas and Indian breadroot. As a result, roots, plants and wild game for consumption would be highly nutritious and ensure a higher quality of physical health.

Alex Johnston, in his book titled, *Plants and the Blackfoot* (1987), gives an example of a specific seasonal movement of the Blackfeet. This movement extends from central Montana, north to the Cypress Hills and Medicine Hat, Alberta (see appendage). Other resources on seasonal camp life include the Glenbow Museum Archive, Calgary, Alberta, Canada <http://www.glenbow.org/collections/search>, and <http://www.trailtribes.org>. Both sites include traditional and contemporary Native culture information.

Blackfeet Today

The population of the Blackfeet living on the reservation numbers approximately 7,000 enrolled members. Living away from the reservation, 8,560 enrolled members. The total enrolled members are 15,560 living in the United States (<http://blackfeetnation.com>). According to the *American Indian Higher Education Consortium* the combined U.S. Blackfeet and Canadian band members is 25,000 (www.aihecvl.org). Approximately 1500 non-enrolled members live on the reservation. The population density is less than 4 people per square mile. The main community is Browning, which is the seat of the tribal government. Smaller communities include Babb, Kiowa, Blackfoot, Seville, Heart Butte, Star School and East Glacier Park.

The Blackfeet reservation today is located at the head waters of the Rocky Mountain divide. Glacier National Park borders the west side of the Blackfeet reservation, Canada to the north. Cut Bank Creek and Birch Creek make up part of its eastern southern borders. The reservation contains 1.5 million acres. The elevation ranges from 3,400 to over 9,000 feet. This is half the size of Glacier National Park and almost the size of the state of Delaware. It is located in Glacier and Pondera counties.

The Blackfeet maintain a treaty right to hunt, gather wood, and plants within the Park's boundaries. Many Blackfeet today practice their rights and harvest what is necessary for their families. Some of the wild foods, herbs, and medicines that are gathered are berries, onions, carrots, camas, sweet grass, peppermint, horsetail mint, sage, knickknack, cedar, pine, sweet cicely, red clover, willow, and many others. However, although wild game, edible plants, brush, and plants are consistently available throughout the year, Blackfeet cannot totally freely camp, hunt and gather within the Glacier Park boundaries. Treaty negotiations, Federal and State agreements have severely limited and restricted Blackfeet from all that has health wise benefited them in the past.

Senior Blackfeet Honorary Advisory Council

In a meeting with the Senior Blackfeet Honorary Advisory Council (8/22-06) the discussion arose on Blackfeet perceptions, cleanliness, nutrition and the Creator, God or the Life Force (A'PISTOTOOKI; Creator or IHTSIPATAPIYOHPA; Source of life). In former times, before the formation of reservation systems, the practices of tribal health care included a holistic focus on the body, mind and spirit. For instance, our ancestors maintained cleanliness. This cleanliness is not just of the environment and body but equally important cleanliness of the soul and spirit too. In this cleanliness for the soul/spirit, mind and body, was the daily consciousness and practice on how foods and nutrition affect a person and the tribal community. Food, nutrition and health cannot be separated from health care and the Life Force (Creator, God or Source of Life).

Life Force is an English term known to Native Americans to be the Creator (God) which is the life force/spirit that was breathed into all living upon the earth. This force is a vibration of energy. Therefore, to a Native American individual, food brought life and certain foods that are consumed produce a life force full of vibration and energy from its original food source. For example, plants contain live enzymes that vibrate at a high level and produce a life force that is healthy (alive, not dead). In particular and very specific, is the importance of the Life Force of water. Water, a living intelligent spirit which brings cleanliness and holistic health is highly significant amongst all Native tribes. Native American genesis, stories, ceremonies and rituals are plentiful in all tribal lore concerning water. In short, water provides the Life Force, healing purification, and many blessings. Without water the people and all living will no longer exist (discussion with Senior Blackfeet Honorary Advisory Council 8/22-06).

Today's research by Dr. Masaru Emoto (2004) confirms the incredible life promoting abilities and attributes of water. Masaru asserts that water has the ability to mirror energy and vibration. His experimental research accentuates the fact that water is affected by energy and vibration that is sent forth from human thought, word (written and stated), environment, music and that water holds the ability to heal. What Dr. Emoto discovered through his research supports that which Native American people have known for eons.

The Honorary Council (ibid) further discussed prayer as another attribute of Native food and nutrition Prayer over food at meal time provides for gratitude and blessings from the Creator. Through prayer, food is made acceptable with the power of thought and spoken word in relationship with the Great Spirit, Creator. Prayer invokes a higher energy source and vibration, thus, providing quality sustenance full of vitality and nourishment. In addition, prayer over a meal further promulgates and supports Native knowledge on their connection, dependence, and creation with the Creator. It contributes to the understanding that our ancestral and present Natives knew/know "where they come from, and where they are going; before, during and after this life on earth."

The act of prayer over living food sources such as live buffalo, or berries on a bush further contributes to Native dietary food and nutrition. Animals and plants that are consumed are acknowledged in the wild that they provide life, health, and medicines for the sustenance of the people. In this way, through prayer over live animals and plants, the Native person is (1) blessing the living spirit and acknowledging that all living share in the same Creator, (2) all are equally important to the other, (3) we all share in, and contribute to, the cycle of life and death, and (4) prayer makes the food source acceptable to eat and provides healthy nutrition (ibid). "Hunting respect, not killing more than what we can eat; no senseless killing" says Dewey Heavy Runner, Honorary Council. "Long time before never did anything with out prayer. Our people had respect for the life of an animal~ another being that is made by our Creator," Lawrence Mad Plume, Honorary Council.

The Honorary Blackfeet Advisory Council say that the Blackfeet still live with an awareness on inward and outward cleanliness, our connection with the Creator, and prayer today. In addition they say that the children must be taught on these things of the Creator and Life Force. Some have forgotten,

children and adults, and this needs to be made more public for the future of the Blackfeet Nation. “Water is the Blackfeet Nation’s greatest resource and people from all over are trying to get it and they don’t even know the true value of it,” Al Potts, Honorary Council Chairman, 8/22-06.

One other area that merits attention in this research affecting health and nutrition of Native peoples is the seasonal cleansing of the intestines and organs. This practice still exists today. Amongst the elders in the Blackfeet community they speak of internal cleansing of the body and the different plants that are used. Cleansing the system aids in food digestion, increased nutritional absorption and increased immunity to ward off disease and illness. Ancestors of the Blackfeet cleansed their physical self a minimum of twice yearly, once in the spring and again in the fall. Again, this research finds that internal cleansing also amplifies the Life Force held within the individual. This Blackfeet view of Life Force can be observed upon the painted lodges (teepee). The animal figure painted on the outside of a lodge has arrows that enter into the mouth and extend to the intestines and organs. This line draws attention to the importance of the spiritual life force held within the intestines and internal organs. Also, this belief is further reinforced by the Blackfeet game hunter. When a buffalo is taken the hunter will eat the liver immediately upon the kill while still fresh and warm. The taking and eating of the liver signifies the spiritual life force and is considered very healthy (ibid).

Nutrition Education in the Community of Blackfeet

In closing on the history of the Blackfeet and Blackfeet today, diet and nutrition changes are evident. Native education on plants and berries has evolved from direct tribal cultural education experience to formal non-native education settings, non-native perspectives and non-native food identification. Still, many Blackfeet families gather together and make an outing to go and gather berries, sweet grass, sage and others. The Blackfeet Healthy Heart program employees (designed to encourage increased diet awareness), take a day or two each year to go and gather Savis berries and other edible plants. The foods that are gathered are cooked for program activities that will help encourage Blackfeet members to obtain traditional foods, plus enjoy the exercise while doing so.

Presently the Blackfeet Community College and Browning High School, each have a green house. Both institutions identify the ethno-botany of wild

plants in the area (instructor's discretion). The Blackfeet Community College offers course work and community workshops on wild plant foods, medicines, health and nutrition. Currently, the USDA is supporting a grant implementing 6 or more family and/or community gardens at different locations on the Blackfeet reservation. Some of the plants that were sowed are beets, zucchini, corn, beans, squash, peppers and potatoes. Starts were grown in the Blackfeet greenhouse before planted in gardens.

Health facilities for diet nutrition assistance are available to the Blackfeet; Indian Health Services (IHS) Diabetes Program, Blackfeet Southern Peigan Diabetes Program, Health Heart Program, Women Infants and Children (WIC), Blackfeet Commodity (USDA Food Rations), and Community Health Representatives (CHR) and the New Eagle Shields.

II HEALTH NOTES ON NATIVE AMERICAN PEOPLE

Overview:

*American Surgeon Generals Report on Nutrition and Health
USDA and DHHS
American Heart Association*

The review on the history of the Blackfeet offers an exemplarity glimpse of more than potential underlying causes on many of the health and nutritional issues presently effecting Native Americans. These issues are brought on by cultural survival and loss of culture, generational trauma and shock, adjustment to foreign perceptions/policies, poverty, diet, foods, and life styles. Native American tribesmen/women living on reservations can identify with a basic historical flow of events affecting their tribal way of life. The resulting impact upon all tribes of the Great Plains culture, and indeed across the nation, is seen in health reports provided by the United States Government Indian Health Services (IHS) and other related health programs. However, access to specific tribal health reports is limited and better secured on location at the tribal reservation health agency or program.

The *Surgeon Generals Report on Nutrition and Health* (1987) states that across America at least one-half of all deaths are food related and that the connection between food and health problems is likely to be greater than reported. Dietary excesses or imbalances contribute to problems such as

coronary heart disease, stroke, high blood pressure, cancer, diabetes mellitus, obesity, osteoporosis, dental caries and periodontal disease, and diverticular disease.

Since 1987 the Federal Government has put forth great effort to uncover the impact of nutrition, food and health related information. Two government departments responsible for supporting this research activity are the United States Department of Agriculture and the Department of Health and Human Services. These reports provided by the two departments began in 1977 and provide the statutory basis of Federal nutrition education efforts and posted guidelines from the Dietary Guidelines Advisory Committee.

In the past two decades, Native American diet, food and nutrition is being more closely examined through the efforts of these two departments and others such as the American Diabetes Association, American Heart Association, American Lung association, Center for Disease Control, National Institute of Diabetes, and many other private foundations as well. Health information on Native American diet in relationship to food and statistics is not yet abundant. It is safe to say however, that upon review of the American Surgeon's report on Nutrition that Native people everywhere are as impacted by food related deaths and health as other minority groups and mainstream society. To be sure, other research such as that found in Michael and Mary Eades (1996) and others, Native American genetics and biological predispositions towards diet plays a great role in diet, health and nutritional needs. It follows that dietary needs of Native American people are then subject to physiological and cultural inheritance investigations.

To further demonstrate the Native American consequences from diet changes *The American Heart Association Journal Report* (10/04/2005) states that a study examined stroke deaths in American Indians compared to whites. "Thirty-six percent of American Indian men and 28 percent of American Indian women died of stroke when they were less than 65 years old compared to 11 percent of white men and 7 percent of white women." The report continued on the disparities in heart diseases in American Indians compared to whites and found that the rate of disease "significantly" higher for American Indians than for whites. According to this report concerning Montana Indians, ". . . the prevalence of two or more risk factors for heart diseases in Indian adults increased from 34 percent in 1999 to 44 percent in 2003."

Given the excellent health history of Native North Americans prior to the

introduction of foreign, processed foods, we can safely attribute diet associated diseases, such as those reported above by the American Surgeon General's Report on Nutrition and Health and the American Heart Association, are highly influenced by the changes from a tribal culture diet and genetics. In addition to the changes in Native diet, daily mental and physical stressors, lack of proper nutrition and food imbalances from the foods they now consume contribute to the overall health of Native Americans of all ages, infant though old age.

III NATIVE PLANTS AND NUTRITION

Native Americans and other hunter-gatherer tribes around the world foraged and ate from nature's provisions. The vegetation diet consisted of a variety of plants, trees, bushes, berries, roots, grasses, wild fruits, nuts, seeds, fungi and lichens. This included anything edible that grew above the ground as well as below, and other vegetation that grew in water (algae). One of the ways Natives knew what vegetation was edible and which was not was through their keen observation of animal nature. For example, the site of a wolf digging up the roots of a certain willow along the banks of a river, a bear in spring time eating fresh roots and flowers, a squirrel gathering seeds and nuts, the bison foraging on prairie brush and grasses, moose having a feast on water algae and grasses, deer munching on flowers, tree bark and berries, are all indicators that what an animal will eat, most likely it is safe for a person to ingest.

During earlier times plant food preparation (if not eaten raw or dried for later use) by most tribes was done by boiling in water or roasting in an earth bed of rocks, wood and leaves or other plants. Food bulbs or roots were placed in the pit on top of leaves and protected with another layer of leaves on top; light soil was then placed covering the pit and a fire was then built. At other times a fire of wood was first made in the pit heating the rocks, and then allowed to burn the wood to charcoal before the addition of the protected food source. Some tribes in the Great Plains culture still practice these methods of cooking today. In addition, with the new convenience of cement, a pit is lined with it and can be used over and over, thus, making the roasting method easier.

Diet information was taught to children generation after generation. Native

children accompanied others and learned through hands on experience how, when, and where to harvest and cultivate wild vegetation. Education for Native peoples was a living experience. Their environment made easy access to the food that provided them with excellent nutrition. In addition, Native ancestors taught on the energy or Life Force (description p. 14) contained in the foods that they consumed. Children learned respect and sensitivity towards life which perpetuated consciousness on cultural priorities and perceptions. Through out history Natives have continued to bless and say a prayer of thanks before taking the life of any living energy. And prayer is said during preparation and when portioned to eat.

It used to be that every Blackfeet family had “personal medicine,” the plants and herbs that were passed from generation to generation. These medicines were highly nutritious as well as preventive of health ills and healing. Today, some families still practice the art of gathering personal medicines and harvesting wild foods. Native children also learn in school and home about diet, nutrition and health.

When missionaries and public schools were established amongst Native American tribes many Native children and families learned to garden the white man’s way. Native reservation schools generally had gardens outside their building along with a root cellar. In this scenario, Native children learned in a formal non-native education system how to plant, care, harvest, and prepare a variety of foods including vegetables, fruits, berries, and herbs. This was a practice well into the 1950’s and 1960’s. However, as in the case of the public school system, prayer was removed. This prayer removal diminished an aspect of cultural sensitivity and cultural understanding on the power of living substances, plants, animals and their environment. Today, for many schools located on Native reservations vegetable gardens and root cellars are no more. There is a modern living mythology of hunting-gathering and harvesting which continues down the store isles packed with convenience and processed foods (Burton Horn and Senior Honorary Council Members, 2005).

Identification of Native Plants Research

In Alex Johnston’s book *Plants And The Blackfoot* (1987), he writes that there are approximately 17,000 plants species in North America. In the historic homeland of the Blackfoot from about the Red Deer River in Alberta, Canada, to the Yellowstone River in Montana/Wyoming and from

the Cypress Hills in Canada to the Rocky Mountains, one would expect to find in the order of 1,000 plant species in the region. Johnston suggests that about 185 species were used by or known to the Blackfoot. John C. Hellson and Morgan Gadd, *Ethnobotany of the Blackfoot Indians* (1974), lists 100 species known to or used by the modern Blackfoot. Hellson and Gadd gathered their information in field study from Blackfoot informants. Their book groups plants by type of use and the names of the Blackfoot participants. Found in the *Herbarium of the Lewis and Clark Expedition, The Journals of the Lewis & Clark Expedition, 12 Vols.* (Gary E. Moulton, Editor, 1983-1999), is a wealth of information on the plants collected through out their expedition during 1803 to 1807. Lewis and Clark expedition began in St. Louis, Missouri, traveling north to the Plains and westward to the Pacific coast of Washington State. The journals of Lewis & Clark also contain information on the Native American tribes they encountered, the foods that they ate, and some of the plant medicines as well. H. Wayne Phillips's book, *Plants of the Lewis & Clark Expedition* (2003), is an overview of the plants collected during the expedition, and contains many photos, maps and excerpts from the journals.

The following identification of plant species are gathered from primary resources that include field study and interviews of Blackfeet Indians. The secondary information is gathered from books and internet sites; from Johnston (1987), Phillips (2001 and 2003), and Plants For A Future - Data Base (web site). Research on the lists of plant species were cross referenced for accurate and correct names in Latin and common, and for information on plant use.

In the research of Native American plants, regardless of geographic location, there are certain factors that must be taken into consideration in order to gain a broader understanding on the plants, diet and nutrition. The following is listed:

1. Across the Great Plains similar plants are found and may be called by different names depending on tribal language, and early botany description, interpretation, and biological characteristics of the plant.
2. Tribal networking across the Great Plains created plant transmigration, and seed trade.
3. Due to the influx of non-native newcomers onto the Great Plains and Northern Plains area of the Blackfeet, many new species have been introduced and cultivated. In addition to cultivated plants, species that are escapes are now established.

The following Native American food plant lists are primarily focused upon the most commonly known dietary plants used by the Blackfeet and do include newer species that have been introduced or transmigrated. Other Great Plains Indians will find this list useful in that many of the same plants Blackfeet use, so do other tribes. Names of plants vary amongst tribes, and plants sometimes appear slightly different physically but in fact are the same. This difference is often due to plant adaptation to the environment.

Common Plants and Latin Names

Arrowhead, Wapato (*Sagittaria cuneata*)

Arrowhead, Wapato (*Sagittaria latifolia*)

Asparagus (*Asparagus officinalis*)

Balsam-Root or Arrow-leaved balsam-root (*Balsamorhiza sagittata*)

Big Turnip, Big Medicine, Fern Leaved Desert Parsley (*Lomatium dissectum*)

Biscuit-root (*Lomatium cous*)

Bitterroot, White Root (*Lewisia rediviva* var. *pygmaea*)

Breadroot, Large Indian Breadroot, Prairie Apple, Prairie Potato, Prairie Turnip (*Psoralea esculenta*)

Burdock (*Arctium lappa*)

Camas (*Camassia quamash*)

Cattails (*Typha latifolia*)

Chives (*Allium schoenoprasum*)

Cow Parsnip, Indian Rhubarb (*Heracleum sphondylium montanum* var. *lanatum*)

Indian Breadroot (*Psoralea cuspidata*)

Indian Carrot, Squaw-root, Yampa, Yampah (*Perideridia gairdneri*)

Indian Rice Grass (*Oryzopsis hymnoides*)

Maniikapii, Wild Bergamot, Horsemint, Youngman (*Monarda fistulosa* var. *menthaefolia*)

Mint, Giant Hyssop, Licorice mint (*Agastache foeniculum*)

Mint, Nettle Leaf Horsemint (*Agastache urticifolia*)

Mountain Sorrel (*Oxyria digyna*)

Onion, Nodding Onion (*Allium cernuum*)

Paper Leaves, Balsom-root (*Balsamorhiza sagittata*)

Peppermint or Wild Mint (*Mentha arvensis* var. *villosa*)

Prairie Parsley, Big Turnip (*Lomatium dissectum* var. *multidum*)

Prairie Parsley (*Lomatium simples* var. *leptophyllous*)

Prairie Parsley (*Lomatium triturate*)

Prickly-pear Cactus (*Opuntia polyacantha*)
Purple Prairie Clover (*Petalostemon purpureum*)
Stinging Nettle (*Urtica* spp.)
White Clover (*Petalostemon candidum*)
White Thistle (*Cirsium hookerianum*)
Wild Carrot, Queen Anne's Lace (*Daucus carota*)
Wild Ginger (*Asarum caudatum*)
Wild Onion (*Allium textile*)
Wild Parsley (*Musineon divaricatum*)
Wild Rhubarb, Cow Parsnip (*Heracleum sphondylium* var. *lanatum*)
Wild Rose, Rose Hip (*Rosa acicularis*)

NOTE: Big Turnip, Big Medicine, Fern Leaved Desert Parsley, (*Lomatium dissectum*) from above list is not considered a food substance. It is listed here to demonstrate the differences in the Parsley family. Although many of the other roots and leaves from the Parsley family were eaten by Native Americans, Big Turnip, because of its oils and medicinal properties, was reserved for persons in weakened condition and used for trachoma (Johston 1987).

Fruits & Berries, and Latin Names

Bearberry or Knickknack (*Arctostaphylos uva ursi*)
Chokecherry, Wild plum, Black Cherry, Pin Cherry (*Prunus virginiana* var. *melanocarpa*)
Black Elderberry [dk. Purple/black variety] (*Sambucus racemosa*)
Blue Elderberry [powder blue variety] (*Sambucus cerulea*)
Gooseberry, Black Currant (*Ribes hirtellum* and *Ribes oxycanthoides*)
Hawthorn Berry (*Crataegus douglasii*)
High Brush Cranberry (*Viburnum edule*)
Huckleberry, Evergreen Huckleberry (*Vaccinium* spp)
Mountain Ash (*Sorbus scopulina* and *S. stchensis*)
Rose Hip berries (*Rosa acicularis*)
Russet Buffaloberry, Soap Berry, Soopolollie (*Shepherdia candensis*)
Salmonberry (*Robus spectabilis*)
Savisberry, Sarvisberry, Serviceberry, Juneberry, Saskatoon (*Amelanchier alnifolia*)
Silver Buffaloberry, Thorney Buaffaloberry, Bullberry (*Shepherdia agentea*)
Tall Bilberry (*Vaccinium membranaceum*)
Thimbleberry (*Rubus parviflorus*)
Wild Raspberry (*Rubus strigosus*)

Wild Strawberry (*Fragaria virginiana*)

Introduced Plants and Latin Names

Dandelion (*Taraxacum officinale*)

Indian Garlic, Pennycress (*Thlaspi arvense*)

Lamb's Quarters, Pigweed, Wild Spinach (*Chenopodium album*)

Plantain (*Plantago major*)

Nutrition of Native Plants, Fruits & Berries

Root vegetable is a generic term that includes both true roots such as tuberous roots and taproots, as well as non-roots such as tubers, rhizomes, corms, and bulbs. Root vegetables are generally storage organs and contain energy carbohydrates and water. Roots differ in concentration and balance between sugars, starches and other types of carbohydrate such as grains and lentils (Wikipedia, root vegetable www.answers.com). Plant roots are generally high in dietary fiber, calcium, potassium, folate, vitamins, minerals and live enzymes. The plant leaves, stems, and flowers contain much of the same as the roots but may contain other natural nutrients such as natural organic salts (sodium) and fewer carbohydrates. Most plant roots, stems and leafy greens, with an exception of a few, are considered alkaline in nature in comparison to meats which are acidic. All herbs are also considered alkaline. A balance of alkaline and acidic foods is important for the diet. It is stated that when a person is out of balance, either too much or too little of either acidic or alkaline rich foods, that individual's chances of becoming ill, or limited physical functioning is increased. Further, foods that contain organic natural salts, such as leafy greens from plants, and the flesh of fruits and berries, are necessary for optimum health. Natural organic salt benefits differ to inorganic salts such as the common table salt or the sodium used in packaging and preserving foods. The organic salt contains electrolytes (sodium, chloride and potassium) that safeguard the level of water in the body, health immunity, and other physical functioning (Bernard Jensen, 1988). The *Vitamins & Minerals in the Food Guide Pyramid* (USDA) lists calcium, iodine, iron, magnesium, potassium, vitamins A, C, folate, and K, amongst the vegetable group.

Fruits and berries group is defined as the succulent plant part; a fleshy or pulpy fruit, usually edible and of small size irrespective of its structure (Merriam Webster's Collegiate Dictionary, 1996). On average, most fruits and berries contain iron, potassium, minerals, vitamins A, B6, and C. The seeds of a plant contain fiber for proper elimination, sodium, and are also

considered anti-carcinogenic and anti-oxidant. Most domesticated fruits are alkaline, few are acidic, and therefore, we can infer that fruits in the wild are similar in acids and alkaline content. For example, wild strawberries are considered a very good mineral source of calcium, iron, phosphorus, sodium, vitamins A, B, C, and an anti-oxidant. Because strawberries contain Phenylethylamine (PEA), it is considered an anti-depressant and mood lifting. It is acidic in nature, and the seeds make for great fiber in the intestines and bowels. Wild Huckleberries which are alkaline are high in potassium, iron, and vitamins B and C, thus making it an excellent choice for building healthy blood. Research indicates that huckleberries are especially helpful in aiding the pancreas in digesting sugars and starches, and used as a pack for running sores, eczema, and skin disorders. The leaves may be used to make tea that is good for poor starch digestion.

IV FOOD PYRAMID GUIDES *Overview*

Historically, across America since the 1950's public education included instruction upon the importance of the four main food groups which are dairy, meats, grain and vegetables/fruits. In February 1980, the Department of Health, Education and Welfare (HEW), and the United States Department of Agriculture (USDA), presented a collaborative brochure on the *Dietary Guidelines for Americans*. This guideline represented their points of view on ways to build a healthful diet and lifestyle. Shortly after, the two departments convened the Dietary Guidelines Advisory Committee. This committee thereafter has established versions of the *Dietary Guidelines for Americans* every five years, 1990, 1995, 2000, and now 2005. It was in 1992 the USDA put forth a graphic food pyramid guide that included the four main food groups' dairy, meats, grain and vegetables/fruits with added categories of fats, and sweets with suggested daily dietary consumption. Then, on April 19, 2005, USDA in a joint effort with the Department of Health and Human Services (HHS) presented a new food pyramid guide called "My Pyramid." The new USDA My Pyramid is less generic in food proportions in comparison to the old triangular food pyramid. The new My Pyramid food choices and quantity consumption is dependant upon amount of individual daily exercise and gender. Thus, the new My Pyramid allows greater food choices and amounts according to individual life styles. In addition the American Diabetes Association (ADA), 2005, also established a new *Diabetes Food Pyramid*. The basic differences between the pyramid

guides are (1) the USDA, My Food Pyramid is based upon daily caloric intake, basic food groups, and physical activity, which is different to (2) the ADA Food Pyramid which groups foods based on their carbohydrate and protein content, and a diabetic person chooses how much of daily intake according to their individual dietary plan. However, they both promote physical exercise.

America's dietary concern actually began in 1894 when the U.S. Department of Agriculture published its first dietary recommendations. Prior to that time we can infer that non-Native Americans ate what they grew from the land, home gardens, or obtained at market. In contrast Native Americans in 1894 were still in the very early stages of adjusting to tribal reservation life. These changes included diet, food, nutrition, language, perceptions, government, home living, relocation, tribal education, family systems, social and tribal interaction, and the list goes on; evidenced in this paper on the Great Plains culture and history of the Blackfeet Nation. Prior to the establishment of American Indian reservation systems and acceptance of U.S. food rations, American Indians lived in union with their environment and food sources.

Many plains Indian cultures at the turn of the century into the 1900's were still very close to their hunter-gatherer food system (Paleolithic), which would have been a very basic food pyramid consisting of meats, eggs, fish, fruits, vegetables, and nuts, excluding grains, milk, and refined sugars. The Paleolithic hunter-gatherer diet consists basically of proteins, carbohydrates and fats food groups. Michael Eades (1996) describes the health of the hunter-gather people exceeded that of the agriculturally developed communities. In part, Eades attributes the health disparity due to the fats and proteins that the hunter-gatherer relied upon as their mainstay foods in comparison to the cultivated grains as a protein source. David Helwig *Paleolithic Diet* (2001), states that among aboriginal hunter-gatherer societies that survived into the twentieth century the rates of cancer, rheumatoid arthritis, obesity, diabetes, osteoporosis, heart disease, and other conditions were remarkable low until they switched to modern diets.

Blackfeet author, Marietta King, describes the "Food Pyramid Lodge" from her book *Native American: Food is Medicine* (2002). The Food Pyramid Lodge is based upon her research on the hunter-gather diet and the USDA Food Guide Pyramid and then modified to meet today's dietary changes amongst Native peoples. Her Food Pyramid includes 7 food groups; meats

(protein; fish, poultry and eggs), vegetables, berries (carbohydrates), unsaturated fats (fats), herbs, milk and grains/sweets. According to Ms. King Native people are lacking proper physiological nutrition and suffering from food related illnesses due to the changes in diet from tribal hunter-gather to processed American foods. “Native people every where are suffering from food related diseases because their bodies are designed to receive culturally and environmentally appropriate foods. These foods include the plants and roots found in their tribal homelands. Since not all Natives still gather foods and plants from the wild or have gardens, we now hunt and gather from the store. Native people must educate themselves on the food available to them and what is appropriate for their tribal diet. The processed grains, sugar, canned vegetables, processed cheese and milk are literally making the Native American person ill. Rather, we should be choosing from the market fresh vegetables, fruits, meats and healthy oils such as pure virgin olive oil. The good fats from the oil help to replace the healthy fats that Blackfeet in the past use to consume from buffalo tallow. Then we need to learn ‘how to eat’ the foods in order to avoid high cholesterol. This is more like food combining. Our ancestors did not have the food choices that we have now and their lives were physically more rigorous and foods organically clean, therefore, they did not have to deal with the illnesses brought on by foods like today.”

In summary of the Food Pyramid Overview it is evidenced that there are more than one type of food guideline available to the general public. A survey of the literature and other available information on nutrition derived from food groups is abundant. The USDA Food Guide Pyramid now has a vitamin and mineral pyramid chart available. The pyramid structure of vitamins and minerals in our food groups is one source that is beneficial towards understanding on the nutritional value of the foods that we consume. There are wild and domesticated food plants and spices charts that list vitamins and minerals and are available in books and internet sites. In one book titled *Foods that Heal* (1988), by Bernard Jensen, produces a brief but basic food analysis chart of foods that are nutritional. Jensen’s book also contains a “Food Remedy Troubleshooting” chart and a “Twelve Body Systems” chart. Both charts site the vitamins and nutrition found in foods that Jensen says helps to heal the body, most of which are plants, berries, fruits, leafy greens, nuts and roots. The foods that Jensen list can be bought at the store.

SUMMARY AND RESEARCH SUGGESTIONS

The history of the Blackfeet, one of several Native American tribes of the Great Plains culture area, demonstrates the course of changes from a hunter-gatherer diet towards the assimilation of modern foods. At this time, one-hundred and fifty-one (151) years after the Lane Bull Treaty, and territorial boundaries established, the Blackfeet are still knowledgeable on tribal foods and plants. Although access to tribal foods is limited, efforts towards resurrecting traditional wild plant crafting, and further plant food identification is in process. This is evidenced mainly by the few education systems that instruct on wild plant foods identification, health benefits, nutrition, and use in plant medicines, that serve the Blackfeet population.

Preservation of this knowledge is important in that it further perpetuates cultural lifestyle, perceptions, and make possible a return to increased health. Native Americans within the Great Plains culture area share similar historical events and plant foods that are identified within the body of this report. The plant foods may differ in name according to tribal language and lore. It is suggested that a more intense study on the native wild plant foods be further researched with Native American name associations, and nutritional value identified. A field study with Natives knowledgeable on their tribal plants is also suggested.

The food pyramids expressed herein offers a glimpse of food guidelines that Native Americans have available to them today. However, this research indicates that since the beginning of modern food assimilation, Natives are at risk for greater food related illnesses and death. One recourse is the promotion of wild plant foods gardening. The Blackfeet Livestock and Field Survey of 1921 reports that domesticated agricultural products is unlikely on the Blackfeet reservation due to weather, soil, and shortness of growing season (40 days). Alternatively, the environmentally natural wild plants can be cultivated and grown, particularly in the parsley family, potato and bulb roots, and berries which were a favored food source amongst the Blackfeet in times past.

Modern ways of cooking and menu use of wild plant foods could be further researched and instructed. Other than the traditional Native plant availability, further public education on choosing fresh vegetables, herbs, and fruits (that would be closely related to tribal diet) from local supermarkets could be promoted.

While conducting this research, it was found that the Blackfeet used to be a pure race of Type “A” blood. Further research on blood type and diet amongst the Blackfeet and other Native American tribes is suggested. Not all Native Americans share in the same blood type but many are type “O.” Newer scientific advances on blood type and diet are beginning to surface in the field on nutrition, race, body types and personal temperament.

Very briefly mentioned in this research are health care methods that the Blackfeet sought, such as mineral waters and hot springs. Seasonal movements of hunter-gather tribes included a stay at a hot spring. The health benefits of a hot spring is not something that the Blackfeet may so freely enjoy today as their ancestors once did. On the Blackfeet reservation today there are no mineral baths available. One advantage that the Blackfeet have access to are the pure spring waters from the Rocky Mountains. As evidenced in this research report, water is held in very high esteem with the Blackfeet and other Native American tribes. This is clearly seen in the many genesis stories of tribal history. The nutritional attributes available from pristine water is a health asset for the Blackfeet Tribe. This water must be collected from a mountain spring as the water that enters into their town is treated for purification purposes.

ABOUT THE RESEARCH TEAM AND STUDENTS

7/05 to 8/06

Three individuals working with the Blackfeet Community College under the direction of Mr. Wilbert Fish, USDA Extension Agent, collaborated together on this research with three volunteer students. All six individuals collected primary, and secondary data. Mari King compiled and typed the data into its research form.

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Bonnie Reiter, BCC

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I once thought that plants could not speak; that they could not communicate. I looked at plants as if they were a muted form of life condemned to live in silent mindlessness. They meant absolutely nothing to me. The life of a plant to me was worthless. I was isolated from the world of nature. I had been

urbanized. In short, the education I received was intended to make me perceive the world of nature as something alien and fearful. I was told that nature did not have spirit and that it was simply a force that needed to be conquered. I was taught that everything in nature obeyed certain laws, and once these laws were discovered, understood, and exploited, humans would be the masters of a powerful force. I believed it. I did not know any better. I finally realized that I was not separate from nature but an integral part of her magic. I came to learn that everything has a spirit and a life of its own; rivers, mountains, rocks, and plants. The class, Native American Medicinal Herbs [a BCC Course offering], strengthened my belief in this philosophy. The class was taught from a perspective of respect for all living things. We did not look at plants as scientific specimens, but rather as equals that could teach us many things. The plants that we harvested, with great respect, cleansed our bodies as well as our minds and spirits. We learned to prepare our infusions and decoctions with care and love. I am grateful to our teacher, Wilbert Fish, for the unselfish and loving way that he shared his Blackfeet knowledge with us. Robert Lerma, BCC Student, June 3, 2001

APPENDAGES

Maps, Blackfeet Chronology, Food Pyramids, and Student Section,
Interviews and Recipes

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INTERVIEWS

Interviews with Blackfeet community members by the research team are many. Names are listed with each individual student interview attached. Some of the individuals are elders while others are middle aged. The research team interviewed older individuals over 50 years of age. The Senior Honorary Advisory Council (HC) members (nine members in all) are between the ages of 70 and 82, and speak the Blackfeet language with the exception of one member. Over the past year the HC recorder, Mari King, has inquired about plants that the Blackfeet have used. Prior to the finalization of this paper, Mari confirmed the information from their discussions that her notes and perception of the knowledge on Blackfeet plants and foods were accurate. What she had written on the discussions held with the HC was approved on August 22, 2006. The discussion held with Shirley Crowshoe, Instructor, and Gert Heavy Runner (elder of tribe) took place while riding on a Tribal van together after a day trip to a community gathering to the Lewis & Clark and Blackfeet fight (along the Two-Medicine river), held South-East of Browning, Mt. approximately 45 miles. Shirley is a Blackfeet Instructor at the Blackfeet Peigan Institute, Browning, MT. Listed below are the members of the Honorary Council.

Senior Blackfeet Honorary Council Members

Al Potts, Chairman	Robert Many Guns
Albert Vaile	Floyd Rider
Lawrence Mad Plume	James Boy
Dewey Heavy Runner	Carl Cree Medicine
Charles Weasel Head	Mari King (recorder for HC)