



Yucca glauca Hest Ah Pan' E Stse: Engaging very young and youth in its Ethno botany, Cheyenne traditions, and Western Culture Science in the Lame Deer MT Botanical Garden

Alan Balen, Liberal Studies, Montana State University (MSU)-Bozeman, MT; Meredith Tallbull, Linwood Tallbull, Chief Dull Knife College, Lame Deer, MT Florence Dunkel, Plant Sciences and Plant Pathology, MSU-Bozeman



Introduction

The Cheyenne people are made up of the joining together of two bands, the **Tsetsehestahese** and the **So'taa'e** from the Great Lakes region. These are a people of great oral stories, a history of living in earthen-log houses and having gardens as well as on the Great Plains as hunter/gatherers. From these experiences arose a rich heritage of using plants for medicine, ceremonies, and many other spiritual and nutritional needs. The Northern Cheyenne Reservation in southeast Montana remains a nearly pristine habitat for many of these plants, including yucca, *Hest Ah Pan' E Stse*.

Hypothesis Tested

Combining western scientific knowledge of yucca, its traditional Northern Cheyenne practices, language, and history in a handheld electronic device will raise awareness and engage young Cheyenne children when finding it in the botanical garden.

Materials & Methods

In-depth interviews with:

- Elder/Ethnobotanist, Linwood Tallbull (in Busby MT)
- Meredith Tallbull (via polycom at Chief Dull Knife College (CDKC), Lame Deer, MT)
- Josette Wooden Legs and Mina Seminole (in person at MSU and on polycom at CDKC Cheyenne Cultural Center.

Peer-refereed literature search. Thorough peer-refereed literature search in CAB Direct and other databases.

Table 1. Peer Refereed Search for Information

Data Base	Key Word or Phrases	Hits
CAB	Yucca	1357
	<i>Yucca glauca</i>	52
	<i>Yucca glauca</i> Medicinal	7
	Yucca Microbial	14
	Soapweed	4
	Yucca Medicinal	104

In-depth interview Questions:

1. How can Northern Cheyenne produce the resources needed to achieve their desired way of life?
2. How can yarrow be incorporated into discovery learning process at botanical garden and returned to use in Northern Cheyenne's peoples lives?
3. What is the next step towards the end goal, healthy life?



Fig. 1. Hest Ah Pan' E Stse, *Yucca glauca*



Fig. 2. Montana Department of Transportation roadway map and satellite image of Lame Deer MT showing relative location of garden site

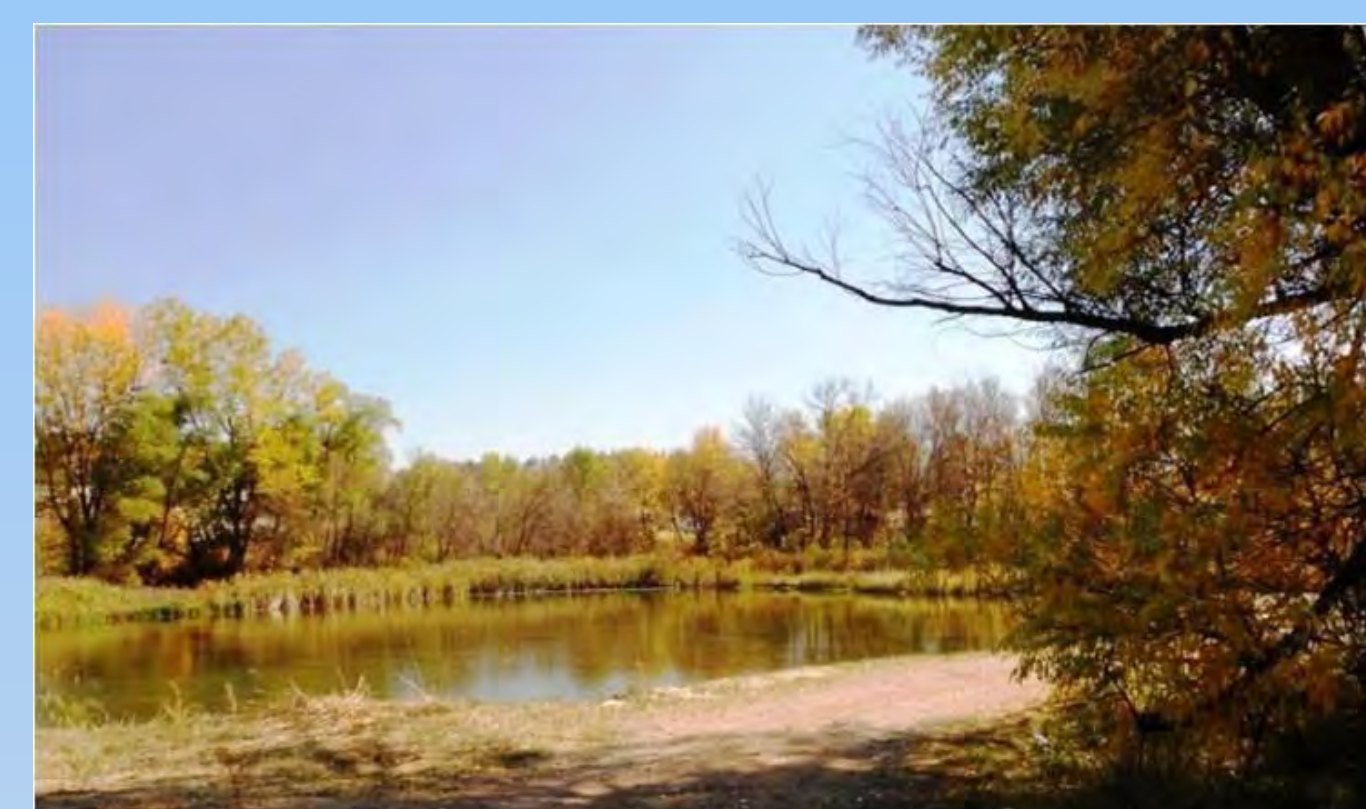


Fig. 3. Pond at the Botanical Garden Site, center of town, Lame Deer, MT.



Fig. 4. Tim and Alan learning from Northern Cheyenne Ethnobotanist, Linwood Tallbull about yarrow, and yucca



Fig. 5. Elder Linwood Tallbull explains how yucca root is used for shampoo



Fig. 6. Yucca Root

Results & Discussion

Table 2. Documented examples of bioactivity and ethno botanical uses of yucca.

Western Science	Northern Cheyenne
Roots contain saponins and are used as a soap (Montgomery 2010).	Root is used as a dermatology aid as well as a shampoo and cure for lice (Tallbull 2013).
Sold as a vitamin supplement for osteoarthritis, high blood pressure, headaches, colitis, high cholesterol, stomach disorders, diabetes, poor circulation, liver and gallbladder disorders (WebMD 2013).	Roots are dug up, cut into small pieces for use fresh or dried for consumption, hygienic care, and health (Tallbull 2013).
Apply directly to skin for sores, skin disease, bleeding, sprains, joint pain, baldness, and dandruff (WebMD 2013).	Used the fibers in the leaves to make rope, sandals, cloth (Montgomery 2010) and baskets (Tallbull 2013).

Recommendations

- Develop an app or interactive program for an electronic tablet or phone to help introduce yucca information in a visual and informative way
- Incorporate related auditory information with Elders speaking the Cheyenne language, and telling related history.

Literature Cited

- Chief Dull Knife College. 2008. We the Northern Cheyenne people.
- Montgomery, K. (2010). All in a Lather: Herbal Soap Plants. *Herbarist*, (76), 34-38.
- Savory, A. and Butterfield, J. 1999. *Holistic Thought and Management*. Island Press, Washington D.C.
- Tallbull, L. (2013, February). Traditional Uses of Yucca [Personal interview].
- Tallbull, M. (2013, April). Yucca in the Northern Cheyenne botanical garden [Online interview].
- USDA. (2010). *Yucca glauca* (soapweed yucca). *USDA PLANTS*. Retrieved April 21, 2013, from <http://plants.usda.gov/java/profile?symbol=yugl>
- WebMD. (2009). Yucca Uses, Side Effects, Interactions and Warnings. *WebMD*. Retrieved April 18, 2013, from <http://www.webmd.com/vitamins-supplements/ingredientmono-734-YUCCA.aspx?activeIngredientId=734>
- Wells, K. R., & Frey, R. J. (2005). Yucca. *Yahoo Health*. Retrieved April 17, 2013, from <http://health.yahoo.net/galecontent/yucca>
- Yucca. (2013). *Columbia Electronic Encyclopedia*, 6th Edition, 1.

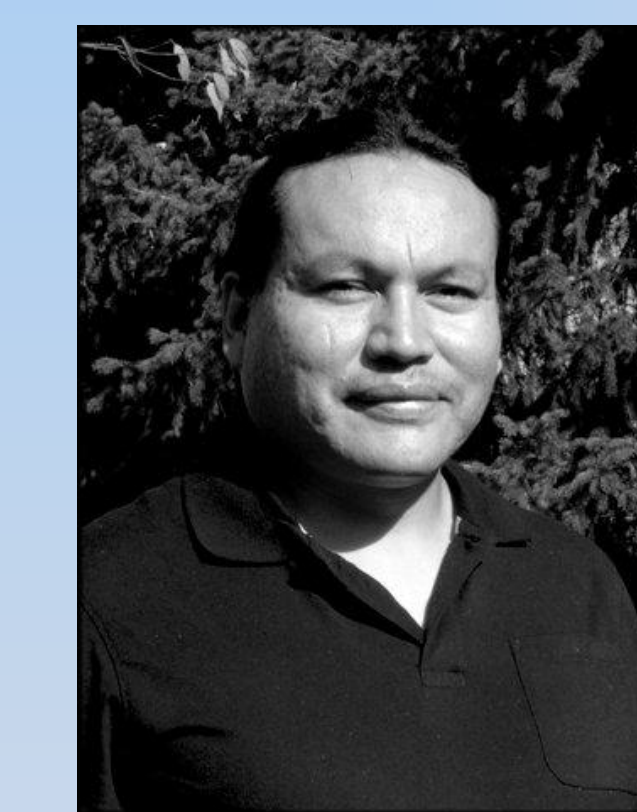


Fig. 7. Meredith Tallbull, Northern Cheyenne tribal member, founder and manager of the Northern Cheyenne Botanical Park and Gardens



Fig. 8. Josette Wooden Legs and Mina Seminole visit AGSC465R class at MSU Bozeman

Acknowledgements

Thanks to Meredith Tallbull for the wisdom and insight about his Western knowledge approach. Thanks to Linwood Tallbull for his Traditional knowledge. Thank you to: Josette Woodenlegs, Media Specialist for the Cheyenne Cultural Center; and Mina Seminole, Historian, of the Northern Cheyenne Cultural Center for their support, teaching, and feedback on our topics/posters. And last but not least, I would like to thank Dr. Florence Dunkel, for her support and guidance through this research process.