

Indigenous and Early Settler Use of Edible and Medicinal Plants of Montana

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Motivation

- A plethora of literature provides information on edible and medicinal plant use
scientific (peer-reviewed)^{1,2,3} and popular sources^{4,5,6,7}
- Typically, this information is not included in science courses or offered for other degree programs, e.g., Native American Studies
- Food and medicine are topics that enrich every student's understanding of their place in the world
potential to erase biases & stereotypes⁸

Learning Objectives

- Develop content literacy of basic plant, habitat, ecoregion and cultural terminology
- Acquire interview, communication, and presentation skills
- Develop geolocation, literature search, and habitat identification skills using field and online tools
- Assemble an edible and medicinal plant specimen collection and process to produce archive-quality vouchers for herbarium deposit
- Form or strengthen familial or community relationships through plant use conversations
- Explore native languages through cultural terminology for edible and medicinal plants

References

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- Moerman, D. E. 2010. Native American Food Plants. Timber Press, Portland, OR. 458 pp.
- Hutchens, A. R. 1991. Indian Herbarology of North America. Shambhala Press, Boulder, CO. 382 pp.
- Densmore, F. 1974. How Indians Used Wild Plants for Food, Medicine, and Craft. Dover Publications, Mineola, NY. 160 pp.
- Kane, C. W. 2011. Medicinal Plants of the American Southwest. Lincoln Town Press, Tucson, AZ. 927 pp.
- Cox, H. B. 1991. Spirit of Harvest. Steward, Tabori & Chang Publishing, New York, NY. 256 pp.
- Elser, T. 2010. The Framework: A Practical Guide for Montana Teachers and Administrators Implementing Indian Education for All. Office of Public Instruction, Helena, MT. 81 pp.
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Examples of Edible & Medicinal Plants



Course Information

Setting

MSU Northern classroom & herbarium
Field collection sites throughout Montana
Local traditional communities

Topics Covered

General information & content terminology
plant, habitats, ecoregions & cultures
Geolocation
GPS, maps, aerial imagery, & online resources
Plant specimens
Collecting, processing, herbarium deposition
Plant material preparation
drying, distillation, infusions, safe practices
Online consortium database
global retrieval of collection information
Current knowledge
medical & nutritional science literature
Community discussion
linking traditional and current knowledge

Activities Included

Flower dissection
Terminology Jeopardy®
Collection of edible & medicinal specimens
Drying plant material
Oil distillation & infusion preparation
Visits to local communities & families
Mock & final PowerPoint presentations

Assessment

Laboratory & field exercises
Plant specimen collection
Edible specimen collection
Medicinal specimen collection
Community participation
PowerPoint presentation

Materials



Indian Education for All

MCA 20-1-501: *Every Montanan, whether Indian or non-Indian, (will)be encouraged to learn about the distinct and unique heritage of American Indians in a culturally responsive manner...*

This course actively addresses the relevant Essential Understandings Regarding Montana Indians⁹ using transformation approaches¹⁰ that incorporate multiple perspectives.

Essential Understanding 1 & 2: Recognition of the distinct and unique cultural heritages of Montana tribal Nations.

- Explore plants used by a diversity of tribal nations and early settlers, as well as those investigated in current edible and medicinal plant research
- An emphasis on most proximate Nation heritages occur, but distant tribal Nations are emphasized upon student request

Essential Understanding 3: Understanding diversity and daily persistence of traditional beliefs, histories, and governance.

- Investigate historical differences in traditional uses of plant species and how these persist and are incorporated in modern day life

Essential Understanding 4 & 7: Respecting the principles and boundaries of reservation lands and the sovereign powers within.

- Student collection efforts are restricted to public lands or, with permission, private lands
- Reservation lands are not sampled unless permission from tribal authorities is secured

Essential Understanding 6: Placing value on histories from an Indian perspective.

- Indian, settler, and current perspectives on edible and medicinal plant species are interwoven, each discussed with value and the systems to which values are assigned analyzed

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Bearberry: <http://www.fruitsvege.com/wp-content/uploads/2013/09/bearberry-4.jpg>; <http://www.luontoportti.com/suomi/images/1142.jpg>

Bee Balm: <https://www.prairiemoon.com/images/D/Monarda-fistulosa-Wild-Bergamot-Bee-Balm-flowers.jpg>

Breadroot Scurfpea: http://insight.ku.edu:8081/MediaManager/srvr?mediafile=/Size4/kuluna01kui-4-NA/1040/KBS_LARC_4037_1200_Ped_esc2.jpg&userid=1&username=insight&resolution=4&servtype=JVA&cid=4&iid=kuv04kx&vaid=NA&usergroup=Kansas_Wildflowers-LUNA&profileid=17

Computer: <http://smallbiztechnology.com/wp-content/uploads/2011/07/lenovo-thinkcentre.jpg>

Cow Parsnip: <http://www.netartsbaytoday.org/assets/images/Heracleum-maximum-1.jpg>

Google Earth Software: <http://screenshots.en.sftcdn.net/en/scm/41000/41959/google-earth-12-700x406.jpg>

GPS Unit: [http://i.ebayimg.com/00/s/NTAwWDM0Mg==/z/FVcAAOxyVaBSuKMM/\\$_35.JPG?set_id=2](http://i.ebayimg.com/00/s/NTAwWDM0Mg==/z/FVcAAOxyVaBSuKMM/$_35.JPG?set_id=2)

Havre USGS Map: <https://s3-us-west-2.amazonaws.com/mytopo/quad/quad/048109e6.jpg>

Herbarium Cabinet: http://www.biopuip.com/prod_images/3226GRN-003-Herbarium-Cabinet-26-Compartment-Open-2.jpg

Lupine: <http://science.halleyhosting.com/nature/gorge/5petal/pea/lupinus/thompsonianus/lupinuslatifoliusthomp.jpg>

Milkweed: [https://upload.wikimedia.org/wikipedia/commons/c/cd/Asclepias_viridiflora_\(3726504837\).jpg](https://upload.wikimedia.org/wikipedia/commons/c/cd/Asclepias_viridiflora_(3726504837).jpg)

Mint: [http://warehouse1.indicia.org.uk/upload/Mint,%20Corn%20\(Mentha%20arvensis\)%20Edge%20c%20Fosse%20Marsh%20and%20field%20c%20Maize%20Sapote%20SP%204915%209196%20\(taken%2010.9.2006\).JPG](http://warehouse1.indicia.org.uk/upload/Mint,%20Corn%20(Mentha%20arvensis)%20Edge%20c%20Fosse%20Marsh%20and%20field%20c%20Maize%20Sapote%20SP%204915%209196%20(taken%2010.9.2006).JPG)

Moss Phlox: [https://upload.wikimedia.org/wikipedia/commons/6/6c/Phlox_hoodii_flower_\(3525615000\).jpg](https://upload.wikimedia.org/wikipedia/commons/6/6c/Phlox_hoodii_flower_(3525615000).jpg)

Nodding Onion: <http://store.underwoodgardens.com/images/Nodding%20Onion.jpg>

Plant Press: <https://www.enasco.com/prod/images/products/9B/AC0854871.jpg>

Saskatoon: <http://www.swcoloradowildflowers.com/White%20Enlarged%20Photos/4amal2.jpg>; <http://web.ewu.edu/ewflora/Rosaceae/ame%20aln1%20ft.jpg>

Steam Distiller: <http://www.heartmagic.com/EOflerNEW72dpITN.gif>

Yarrow: <https://hollichey.files.wordpress.com/2014/01/yarrow.jpg>