

Comparative Seed Manual: CUCURBITACEAE
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This seed manual consists of photos and relevant information on plant species housed in the Integrative Subsistence Laboratory at the Anthropology Department, University of California, Santa Barbara. The impetus for the creation of this manual was to enable UCSB graduate students to have access to comparative materials when making in-field identifications. Most of the plant species included in the manual come from New World locales with an emphasis on Eastern North America, California, Mexico, Central America, and the South American Andes.

Published references consulted¹:

1998. Moerman, Daniel E. *Native American ethnobotany*. Vol. 879. Portland, OR: Timber press.
2009. Moerman, Daniel E. *Native American medicinal plants: an ethnobotanical dictionary*. OR: Timber Press.
2010. Moerman, Daniel E. *Native American food plants: an ethnobotanical dictionary*. OR: Timber Press.

Species included herein:

Citrullus lanatus
Cucumis melo
Cucurbita argyrosperma
Cucurbita maxima
Cucurbita mixta
Cucurbita mixta (blue ballet)
Cucurbita moschata
Cucurbita pepo var *black eel zucchini*
Cucurbita pepo var *howden pumpkin*
Cucurbita pepo var *sweet dumpling*
Lagenaria siceraria
Marah fabaceus
Momordica charantia

¹ **Disclaimer:** Information on relevant edible and medicinal uses comes from a variety of sources, both published and internet-based; this manual does **NOT** recommend using any plants as food or medicine without first consulting a medical professional.

Citrullus lanatus



Family: Cucurbitaceae

Common Names: Watermelon, Wild watermelon, Cooking melon, Bitter apple, Bitter melon, Citron

Habitat and Growth Habit: This species can be found amongst cultivated land, in disturbed sites, and along sandy loam soils in Southern Africa. Other regions of habitat include tropical and subtropical regions.

Human Uses: This species of watermelon can be used in agriculture, medicine, and cooking. The fruit can be eaten raw and contains high concentrations of pectin. The fruit has also been used to make various forms of drinks. The seed can also be eaten raw or cooked. As well, leaves can be cooked. Some medicinal properties, although understudied, include the anti-inflammatory properties from the seed. As well, it is noted the fatty oil in the seed may have compounds that are useful in the paralysis of tapeworms and roundworms. More research needs to be conducted to state some of these medicinal claims with certainty.

Sources Consulted:

<http://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:291938-1>, accessed October 9, 2019.

<http://www.pfaf.org/user/Plant.aspx?LatinName=Citrullus+lanatus>, accessed October 9, 2019.

Cucumis melo



Family: Cucurbitaceae

Common Names: Cantaloupe, Muskmelon, Honeydew, Orange melon, Winter melon

Habitat and Growth Habit: This species is believed to be introduced to North America and is located in disturbed areas, along rivers, and in open woods. This species may be native to areas of the Caribbean and Asia.

Human Uses: There are a variety of human uses of the cantaloupe, which include culinary, agricultural, and medicinal uses. Moerman describes food use by a variety of peoples including the Hopi, Iroquois, Keresan, Navajo, Ramah, Seminole, Okanagan-Colville, and Sia. Hopi removed the meat and pressed it into flat bundles to be dried. The Navajo also ate the fruit in dried form. Iroquois make bread and cake as well as used this species as a specialty squash to be eaten at feasts and ceremonies. Keresan used the seed to create a spice. Even more, the Hopi used the cantaloupe as a ceremonial item. They mixed seeds with juniper charcoal and water to create a body paint.

Sources Consulted:

Moerman 1998

<https://plants.usda.gov/core/profile?symbol=CUME>, accessed October 9, 2019.

<http://climbers.lsa.umich.edu/?p=250>, accessed October 9, 2019.

https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=22362#null, accessed October 9, 2019.

<http://www.uniprot.org/taxonomy/3656>, accessed October 9, 2019.

<http://pfaf.org/user/Plant.aspx?LatinName=Cucumis+melo>, accessed October 9, 2019.

Cucurbita argyrosperma



Family: Cucurbitaceae

Common Names: Cushaw, Green striped cushaw, Cushaw pumpkin, Winter squash, Silver-seed gourd, Pipián, Calabaza, Calabaza pinta, Calabaza pipiana, Saquil, Pipitoria

Habitat and Growth Habit: This species is native to South America. It is found in Mexico, the Sonoran Desert, and southwestern United States.

Human Uses: Cushaw is cultivated, used as food, oil, medicine, livestock feed, and is ornamental. Young fruit, ripe fruit, flowers, and young stems are eaten as vegetables. Seeds have been noted to be ground up, roasted, or toasted to be used in the making of stews. As well, it is documented that on the Yucatan peninsula the fruit is used to treat skin lesions such as burns and sores. The seeds (combined with water) have also been used to increase breast milk production for breastfeeding. Notably, the seeds carry the highest nutritional value of the plant.

Sources Consulted:

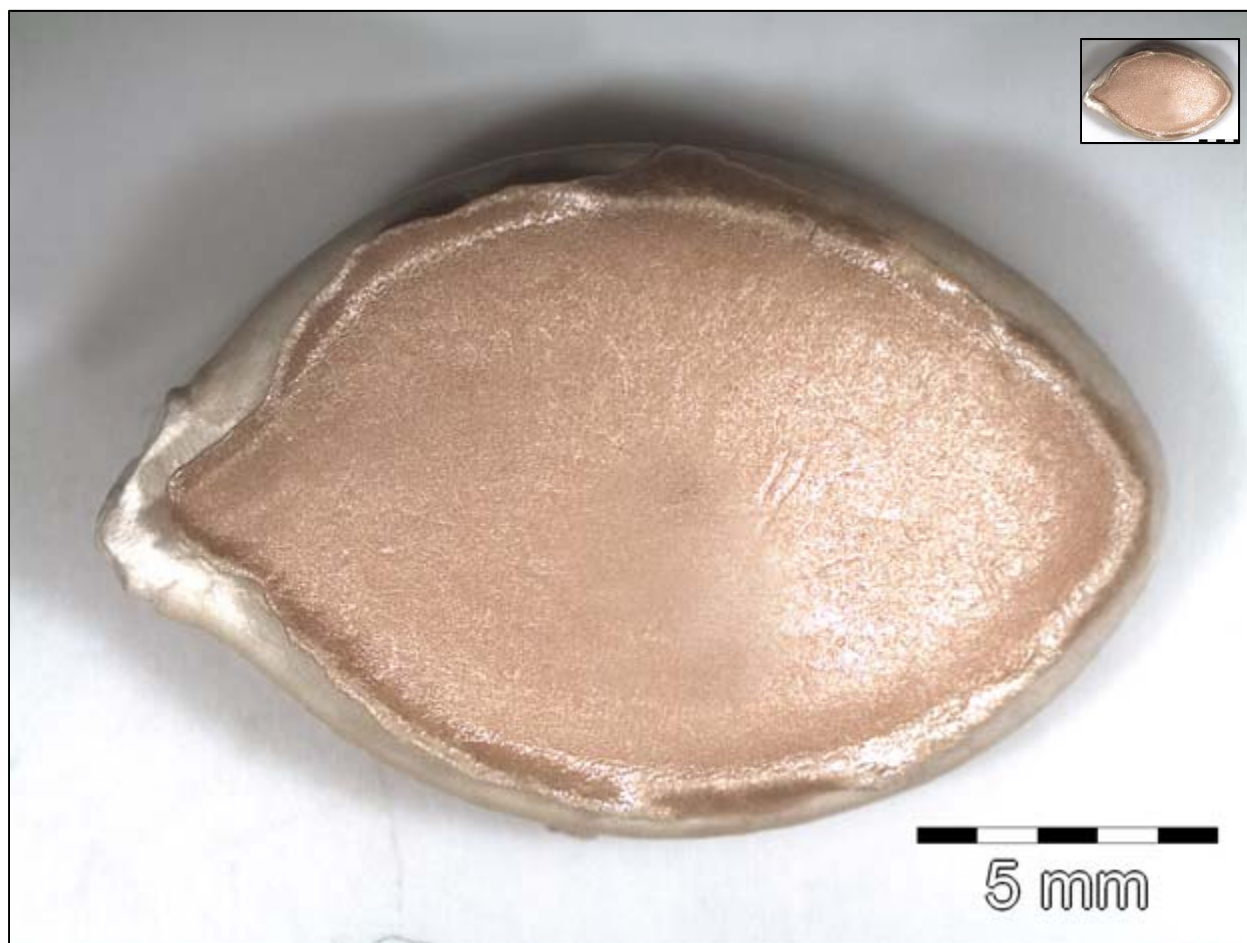
<https://garden.org/plants/view/178018/Pumpkin-Cucurbita-argyrosperma-Green-Striped-Cushaw/>, accessed October 9, 2019.

<https://www.inaturalist.org/taxa/273777-Cucurbita-argyrosperma>, accessed October 9, 2019.

<https://www.hort.purdue.edu/newcrop/1492/cucurbits.html>, accessed October 9, 2019.

<http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=e454>, accessed October 9, 2019.

Cucurbita maxima



Family: Cucurbitaceae

Common Names: Duchesne, Buttercup squash, Arikara squash, Hubbard Squash, Kabocha, Winter Squash

Habitat and Growth Habit: Duchesne has a native range that includes South America. It can be found in North America, Hawaii, South America, Argentina, Bolivia, and Ecuador.

Human Uses: This species is used for agriculture, cultivation, and medicine. Moerman has documented that the species is used as a drug by Hawaiians for dermatological aid (meat flesh and water), gynecological aid (fruits, shoots, buds, and water pounded), laxative (fruits mixed with water), and psychological aid (leaves and young shoots). Ojibwa also used this plant as medicine making a diuretic infusion from the seeds. What's more, the Hopi, Iroquois, Navajo, Ramah, Ojibwa, Papago, and Sia have all used this plant for food. The Iroquois make bread and cakes with this species and also used the species in feasts and ceremonies. Iroquois also boil the vegetable (or bake it) and mash it with butter and sugar. Ojibwa save dried squash rings for winter. Sia have cultivated pumpkins and used them for food.

Sources Consulted:

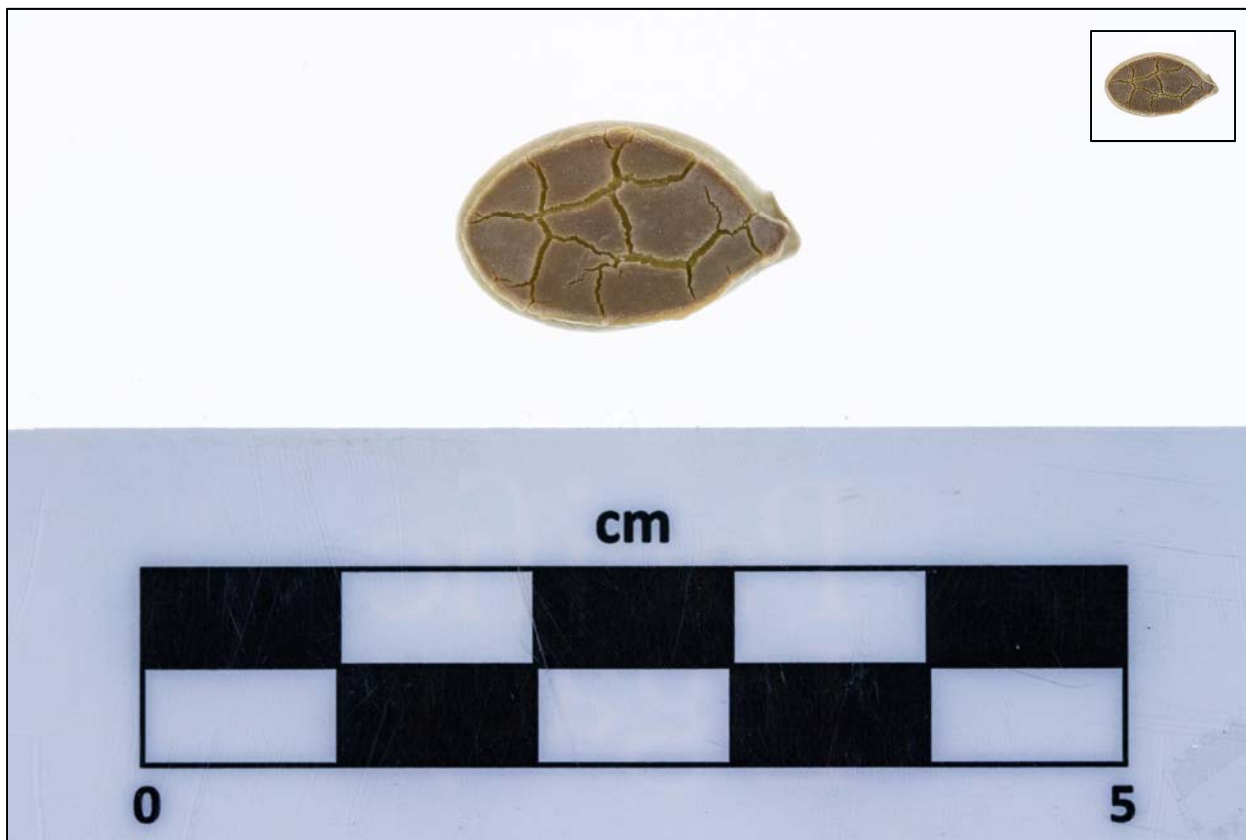
Moerman 1998

<http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=e453>, accessed October 9, 2019.

<http://eol.org/pages/584406/overview>, accessed October 9, 2019.

<http://www.pfaf.org/USER/Plant.aspx?LatinName=Cucurbita+maxima>, accessed October 9, 2019.

Cucurbita maxima (blue ballet)



Family: Cucurbitaceae

Common Names: Blue ballet, Potiron blue ballet, Winter squash, Blue Hubbard variety

Habitat and Growth Habit: The original variety of this species is native to South America. Some varieties are said to be native to North America.

Human Uses: This species of winter squash is used for food, although there may be other unknown uses at this time. Blue ballet is said to be “buttery” in texture and have a sweet taste.

Sources Consulted:

Moerman 1998

<http://clara.vrx.palo-alto.ca.us/works/pumpkin/Colors/blue/>, accessed October 14, 2019.

<http://www.digthedirt.com/plants/33261-winter-squash-and-pumpkins-cucurbita-maxima-blue-ballet>, accessed October 14, 2019.

<https://www.prieure-saint-remy.fr/fiches-cucurbitacees/potiron-blue-ballet-cucurbita-maxima/?lang=en>, accessed October 14, 2019.

Cucurbita mixta



Family: Cucurbitaceae

Common Names: Cushaw pumpkin, Japanese pie pumpkin, Silver-seed gourd, *Cucurbita argyrosperma*

Habitat and Growth Habit: The native status of this plant is not listed by the USDA. However, regions of habitation include Panama, Mexico, and the United States.

Human Uses: Some sources indicate that this plant is used for agriculture and medicine (anthelmintic medicine to kill parasitic worms), but more research needs to be done to confirm this information.

Sources Consulted:

<http://extension.illinois.edu/hortanswers/plantdetail.cfm?PlantID=629&PlantTypeID=9>, accessed October 14, 2019.

<https://www.inaturalist.org/taxa/55424-Cucurbita-mixta>, accessed October 14, 2019.

<https://plants.usda.gov/core/profile?symbol=CUMI3>, accessed October 14, 2019.

Cucurbita moschata



Family: Cucurbitaceae

Common Names: Crookneck squash, Butternut squash, Dickinson pumpkin, Golden cushaw, Winter squash, Texas Indian moschata

Habitat and Growth Habit: Some regions of habitation include Bolivia, Colombia, Ecuador, Central America, and northern South America

Human Uses: Moerman describes Crookneck squash as a food source for the Cahuilla, Havasupai, Hopi, Iroquois, Maricopa, Navajo, Papago, Pima, Seminole, and Yuma. Many of these populations have eaten the dried fruit of this species and taken advantage of the seeds. Furthermore, some groups eat the vegetable pumpkin cooked, such as the Maricopa. The Iroquois use the vegetable to in combination with corn to make bread. Another use by the Cocopa includes using the seeds to tan hides. Additionally, the Hopi use the vegetable as a container to carry items such as corn.

Sources Consulted:

Moerman 1998, 2010

<http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=e451>, accessed October 14, 2019.

Cucurbita pepo var. *black eel zucchini*



Family: Cucurbitaceae

Common Names: Courgette, Zucchini, Black eel zucchini, Pumpkin, Field pumpkin

Habitat and Growth Habit: This plant is found in the Americas. The *C. pepo* species is believed by some to be first domesticated in Mexico, but this is uncertain at the time.

Human Uses: There are culinary and agricultural uses of this plant. More information is provided of the larger group of *Cucurbita pepo* by Moerman. The species of *Cucurbita pepo* has a lot of medicinal and drug value. For example, the Cherokee use the seeds as anthelmintic (treatment for worms like many other species in this family) and in ceremonial medicine. Iroquois use it diuretic aid when the seeds are infused with water for children who have trouble urinating. The Meskwaki use part of the plant as a gynecological aid and Navajo use the leaves to treat digestive issues relating to the stomach. The Zuni use it as an anti-rheumatic and external dermatological aid for rheumatism and swelling, as described by Moerman. Please note this medicinal usages are descriptive of the *Cucurbita pepo* species not the particular subset of *Cucurbita pepo* var *black eel zucchini*. This species is also used as food such as breads, cakes, and the flesh eaten as food and is often dried. The seeds are edible as well. Moreover, the *Cucurbita pepo* species is used as a special food squash and winter use food squash when dried and saved. More research and analysis should be done on the specific *Cucurbita pepo* var *black eel zucchini* species.

Sources Consulted:

Moerman 1998, 2010

<https://hort.purdue.edu/newcrop/1492/cucurbits.html>, accessed October 14, 2019.

<https://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?taxonid=279566&isprofile=0&>, accessed October 14, 2019.

Cucurbita pepo var. *howden* pumpkin



Family: Cucurbitaceae

Common Names: Pumpkin

Habitat and Growth Habit: This species can be found in North America, South America, and in particular Mexico.

Human Uses: This particular sub species is used for culinary purposes. *Cucurbita pepo* is a very broad species that can cross pollinate with other varieties to give rise to various forms.

Sources Consulted:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3284661/>, accessed October 14, 2019.

Cucurbita pepo var. *sweet dumpling*



Family: Cucurbitaceae

Common Names: Summer squash, Winter Squash, Delicata squash, Sweet dumpling

Habitat and Growth Habit: This species can be found in North America, Mexico, and South America. Some states in the U.S. where this species is said to grow include New York, California, Florida, Texas, Arkansas, Alabama, and more.

Human Uses: This species is used in agriculture, culinary purposes, and ornamental purposes.

Sources Consulted:

<http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=a686>, accessed October 16, 2019.

<https://www.myseedneeds.com/products/sweet-dumpling-squash>, accessed October 16, 2019.

<http://davesgarden.com/guides/pf/go/56853/>, accessed October 16, 2019.

Lagenaria siceraria



Family: Cucurbitaceae

Common Names: Bottle gourd, Calabash gourd, Trumpet gourd, White-flower gourd

Habitat and Growth Habit: This species can be found in eastern Siberia, tropical Africa, Asia, and southeastern United States. It grows along shores of rivers and lakes.

Human Uses: Bottle gourd is cultivated to make utensils (instruments and containers), and as food. The seeds are edible, high in oil, and are cooked and consumed. The fruit can be treated as a vegetable and eaten cooked or dried for later use. Immature shoots and leaves can also be cooked for food use. Some medicinal use includes antibiotic, diuretic, pain reliever, vermifuge, and more. The pulp around the seed is a purgative. As well, plant extracts show some antibiotic properties, but this should be further researched. Lastly, it is important to note this plant is used as a form of treatment for diabetes in China.

Sources Consulted:

<http://pfaf.org/user/Plant.aspx?LatinName=Lagenaria+siceraria>, accessed October 16, 2019.

<https://plants.usda.gov/core/profile?symbol=LASI>, accessed October 16, 2019.

<http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?taxonid=279559>, accessed October 16, 2019.

Marah fabaceus



Family: Cucurbitaceae

Common Names: California manroot, Manroot, Wild cucumber, Bigroot

Habitat and Growth Habit: This species can be found in coastal sage shrub and foothill woodland communities in California and Nevada. It is distributed in chaparral and southern oak woodlands.

Human Uses: California manroot is used as a drug by Pomo for dermatological aid. For example, the nuts are mixed with grease and pounded to put on heads in the treatment of hair loss. Kashaya also use this species in the treatment of baldness. Notably, Pomo and Kashaya pound the raw root and mix it with pounded pepper, nuts, and skunk grease (to halt or prevent baldness). The Pomo also use this plant in hunting/fishing as a fish drug to poison fish in pools, rivers, and tide pools along the beach. Other uses include use as Native American jewelry beads, Native American mascara, and medicine for hemorrhoids.

Sources Consulted:

Moerman 1998

<http://www.biosbcc.net/b100plant/htm/marah.htm>, accessed October 16, 2019.

[http://calscape.org/Marah-fabacea-\(Wild-Cucumber\)](http://calscape.org/Marah-fabacea-(Wild-Cucumber)), accessed October 16, 2019.

https://www.wildflower.org/plants/result.php?id_plant=mafa3, accessed October 16, 2019.

<https://www.laspilitas.com/nature-of-california/plants/1155--marah-fabaceus-fabaceus>, accessed October 16, 2019.

Momordica charantia



Family: Cucurbitaceae

Common Names: Bitter melon, Bitter gourd, Bitter squash, Balsam-pear, Balsam-apple, Caraili, Karela, Papailla, Ampalaya

Habitat and Growth Habit: Bitter melon can be found in tropical regions of India, China, other regions of Asia, Africa, South America, and the Caribbean.

Human Uses: Bitter melon is used in agriculture, cooking, and most outstandingly, medicine. To start there is research of components in this plant in treatment for HIV (along with other viral infections) and cancer. As well, this plant has been used as an herbal treatment for diabetes with clinical research to support its effectiveness as a treatment. Some other interesting medicinal usages include measles prevention, hepatitis treatment, elimination of worms and parasites, and as a topical injury treatment. Furthermore, in Jamaica, a tea is prepared with the leaves to treat spasms and pain in the large intestine. In Asian countries, the fruit is cooked and is high in vitamins, carbohydrates, and iron. Last but not least, it is important to note the parts of the plant used by humans which includes the leaves, fruit, seeds, and vines.

Sources Consulted:

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0073780>, accessed October 16, 2019.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4027280/>, accessed October 16, 2019.

<https://www.herbal-supplement-resource.com/bitter-melon.html>, accessed October 16, 2019.