Pumpkin (Cucurbita)
Monograph

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TABLE OF CONTENTS

1.0 Introduction

Pumpkin is a plant of the Cucurbita genus. It is grown in nearly all parts of the world because of its multiple uses. Its seeds and fruit are edible, and pumpkins are used by various industries to make food, medicine and other productos. Pumpkins are healthy containing vital vitamins, minerals, and natural compounds that protect the body from diseases. This book talks about pumpkin in depth. We start by looking at the ecology of pumpkin. We talk about the kind of environment it grows in, where it came from, and how it is related to other plants. We also cover very old fossil records and how pumpkin is classified in nature. Then, we find out about the biology of the pumpkin plant. This includes the plant's life cycle, how the plant develops, how the plant reproduces, and the chromosome number for the plant. We also talk about how male and female flowers work in the pumpkin plant. Then, we learn how pumpkins are planted and taken care of. This includes how seeds are planted, and how they are taken care of with water, fertilizer, and pest management. Good management makes farmers grow healthy, strong pumpkins. We also talk about pumpkins in the market and economy. This includes where most pumpkins are produced like China, India, and the USA and from what they are used. Some of the things pumpkin is used to produce are puree, seed oil, powders, and snacks. Most people today like healthy and natural food, and pumpkin is one of their favorites. We give a comprehensive picture of pumpkins.

2.0 Ecology

2.1 DISTRIBUTIONAL CONTEXT

2.2.1 Affinities and Origin

The connections, among types of cucurbitas such as Cucurbita moschata, Cucurbita pepo and Cucurbita maximas are very common. "Cucurbit family, scientifically known as Cucurbitaceae is recognized as the category of tropical vegetables." (sciencedirect.com)It has resemblances to types of gourds and melons as well as squashes in terms of fruit structure and how they grow either climbing or trailing vine, in warm climates where they are grown. Squash and pumpkins from the Cucurbitaceace family are rich in carotene, a form of provitamin A, which sets them apart for their value compared to members of the same plant family. Pumpkins and squashes are often cooked or eaten fresh like cucumbers and melons are. (sciencedirect.com)The flowers and leaves of

Cucurbitas can be eaten along with the twing. This sets them apart from cucurbitas that are primarily consumed for their fruits. Various types of Cucurbitaceae plants are commonly utilized in applications such, as baking pies and preparing soups and fried dishes. Pumpkins and squashes are sent to far, off markets, like melons and cucumbers which shows how important they are economically. (sciencedirect.com)In regions their flowers and leaves are eaten unlike melons and cucumbers that are primarily grown for their fruit. In temperate areas cucurbitas are grown just like melons and gourds. Pumpkins and squashes are typically. Prepared as food items compared to watermelons and muskmelons that are usually eaten fresh without cooking them. Certain types of squash plants such as Cucurbita oshata are valuable in trade markets, like melos. Cucurbit is not highlighted for its benefits, unlike gourd (Momordica charantia) which is known for its role in reducing blood sugar levels. Nevertheless it offers benefits of Cucurbita that are closely connected to gourds and squashes in terms of their classification and economic value as well as in cultivation practices. However they stand out due to their value and versatility in cooking along with their significance, in the market compared to cucumbers and watermelons that are typically eaten fresh.(sciencedirect.com)

2.2.2 Taxonomic Classification

- Kingdom: Plantae
- Clade: Angiosperms
- Clade: Eudicots
- Clade: Rosids
- Order: Cucurbitales
- Family: Cucurbitaceae
- Genus: Cucurbita

2.2.3 Related Species

There are over 975 species spread across 98 genera in the gourd family, Cucurbitaceae. The family includes herbaceous plants that are either annual or perennial: many of them are climbing or trailing vines with distinctive tendrils. Large fruits called pepos are produced by the flowers, which are frequently ostentatious and gender- neutral. The important genera and species in the

Cucurbitaceae are listed here, alphabetically by common name. (2015, September 11)

- bottle gourd (*Lagenaria siceraria*)
- bur cucumber (genus *Sicyos*)
- bryony (genus *Bryonia*)
- genus *Citrullus*
    - colocynth (*C. colocynthis*)
    - watermelon (*C. lanatus*)
- chayote (*Sechium edule*)
- genus *Cucumis*
    - cucumber (*C. sativus*)
    - gherkin (*C. anguria*)
    - melon (*C. melo*)
        - muskmelon
- loofah (genus *Luffa*)
- musk cucumber (*Sicana odorifera*)
- snake gourd (*Trichosanthes cucumerina*)
- squash (genus *Cucurbita*)
    - calabazilla (*C. foetidissima*)
    - pumpkin (*C. pepo*, sometimes *C. moschata*)
    - winter squash (*C. maxima*)
    - yellow-flowered gourd (*C. pepo*, subspecies *ovifera*)
    - zucchini (*C. pepo*)
- wax gourd (*Benincasa hispida*)

2.2.4 Ecological relationships

A study from PudMed Central (PMC) looked at the relationships between six wild and six domesticated Cucurbita species. Scientists used a part of the nad1 gene from mitochondria to study how these plants are related. This study is one of the first to use mitochondrial DNA to understand plant family history. The results give important information about how Cucurbita was domesticated.(*Proceedings of the National Academy of Sciences*, *99*(1), 535–540)

The study found that Cucurbita was domesticated at least six different times form different wild plants. Curcubita argyrosperma probably comes from the wild Mexican gourd Curcubita sororia. This may have happened in southwestern Mexico, the same place where maize was first grown. The ancestor of Cucurbita moschata is still unknown, but scientists think it may be found in the lowlands of northern South America. Cucurbita andreane is confirmed as the wild ancestor of Cucurbita maxima. Scientist suggest that this species msy have come form humid

lowlands in Bolivia as well as warmer temperature areas in South America.(*Proceedings of the National Academy of Sciences*, *99*(1), 535–540)

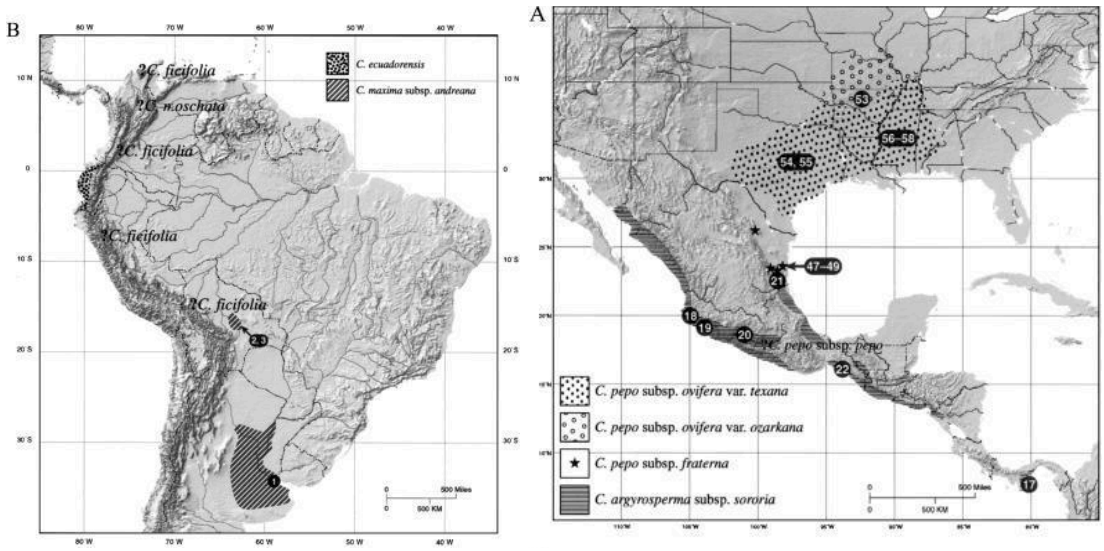
The study also confirms that Cucurbita pepo was domesticated two times. One subspecies,C.pepo subsp. Ovifera, was likely domesticated in eastern North America, but northeastern Mexico may also be a place where it started. The ancestor of the other subspecies, C. pepo subsp. Pepo, has not been found yet, but it is closely related to C. pepo subsp. Fratena and may have come from southern Mexico.(*Proceedings of the National Academy of Sciences*, *99*(1), 535–540)

Cucurbita is a group of plants that includes squash, pumpkins, and gourds.There are 12-14 species found in the Americas, from the United States to Argentina.At least five of these species were groen by Indigenous people before Europeans arrived. These plants were an important food source and some of the first crops to be farmed in the New World. Scientists believe that each species was domesticated separately and not form one common ancestor. However, they still do not know exactly where most of these species were first grown, and their relationship with wild plants are not completely understood.(*Proceedings of the National Academy of Sciences*, *99*(1), 535–540)

Individual no.	Species	Origin
1–3	*C. maxima* Duchesne subsp. *andreana* (Naud.) A.I. Filov	Argentina (1) and Bolivia (2, 3)
4–10	*C. maxima*	Ecuador (4–8) and U.S. (9, 10)
11–16	*C. ecuadorensis* Cutler & Whitaker	Ecuador
17–22	*C. argyrosperma* Huber subsp. *sororia* (L.H. Bailey) Merrick & Bates	Panama (17) and Mexico (18–22)
23–24	*C. argyrosperma* Huber	Mexico

25–41	*C. moschata* Duchesne	Puerto Rico (25), Panama (26, 31–32), Mexico (27), Colombia (28–29), Venezuela (30), Ecuador (33–36), Bolivia (37–41)
42–46	*C. pepo* L. subsp. *pepo*	Ecuador (42), Italy (43), U.S. (44), Hungary (45)
47–49	*C. pepo* subsp. *fraterna* (L.H. Bailey) Andres	Tamaulipas, Mexico
50–52	*C. pepo* subsp. *ovifera* (L.) Decker var. *ovifera* (L.) Decker	U.S. (acorn squash, striped pear gourd, bicolor gourd)
53	*C. pepo* subsp. *ovifera* (L.) var. *ozarkana* (Decker-Walters)	U.S.
54–58	*C. pepo* subsp. *ovifera* (L.) var. *texana* (Scheele) Decker	U.S.
59–60	*C. martinezii* L.H. Bailey	Mexico
61–62	*C. foetidissima* HBK	Mexico
63–65	*C. ficifolia* Bouché	U.S. (63), Mexico (64), Ecuador (65)
	Citrullus lanatus (Thunb.) Matsum. & Nakai	Peru
	Sechium edule (Jacq.) Sw.	Panama

(*Proceedings of the National Academy of Sciences*, *99*(1), 535–540)



(Proceedings of the National Academy of Sciences, *99*(1), 535–540)

The geographic distribution of the probable wild progenitors of domesticated Cucurbita species in the United States, Central America, and South America is shown in (A and B). Individual numbers for wild text provided in Table 1 and in supplementary information on the PNAS are displayed on the maps. For species that currently lack a wild progenitor, question marks denote possible domestications zones.

2.2.5 Fossil Record

The Cucurbit genus which includes clabashes,zucchini and calabashes supposedly originated in America with Mesoamerica as its specific starting point. Ancestors of domesticated Cucurbita species inhabited an extensive are stretching from the United States down to various South American regions. (Wikipedia-Cucurbita 2024). Genetic studies combined with archaeological evidence indicate that various Cucurbita species underwent independent domestication across different regions including Cucurbita pepo in Mesoamerica. Maxima in South America (The Andes región) and C.moschata in northern South America or Central America. (Kistler et al.,2024). The most ancient archaeological records indicating Cucurbita usage originate from Guila Naquitz Cave in Oaxaca, Mexico, where C. Researchers discovered pepo seeds alongside shell fragments and pediments from 10,000 years ago. These others show domestication traits including enlarged seeds and robust husks which stand in contrast to the silves' variability.(Smith 1997). The Cuevas de Ocampo in Tamaulipas Mexico provides additional proof dating back between 7000 and 5000 B.C. The presence of Cucurbita species in ancient farming practices demonstrates early domestication and utilization. (Piperno and Stothert, 2003)

The scarcity of Cucurbita fossils results from its soft fleshy nature yet researchers rely on indirect fossil records like pollen granules and phytoliths which are microscopically observable slice bodies formed in vegetative tissue. Fossils from Ecuador's southeast archeological sites show domesticated crop traits dating back over 10,000 years which supports the existence of tropical crops across various regions (Piperno and Stothert 2003; Piperno 2006). The scarcity of classical Cucurbita fossil material notwithstanding, archaeobotanical records present a detailed account of its early domestication and widespread per-Columbian usage.

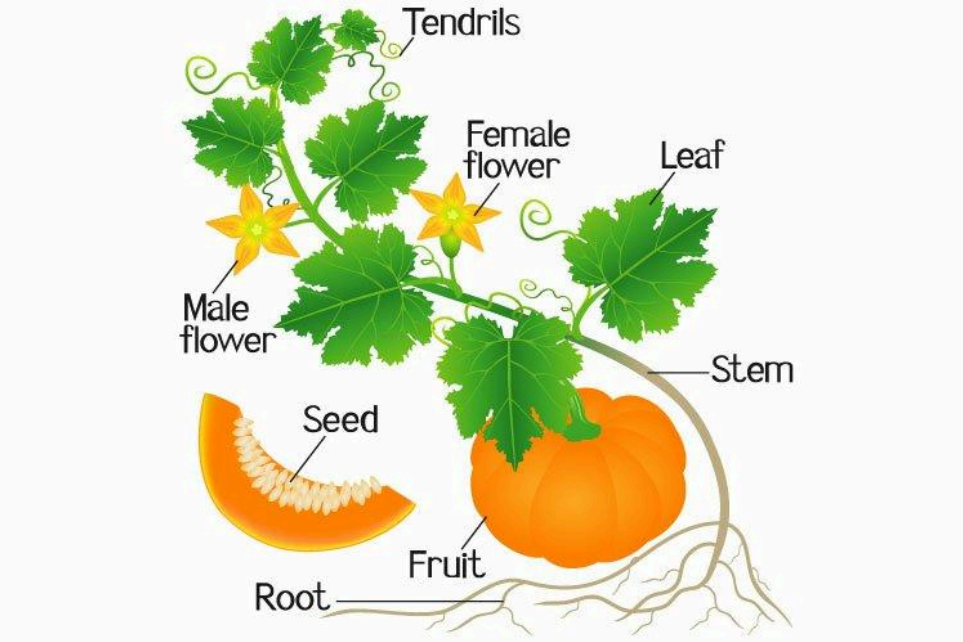
3.0 BIOLOGY

3.1 Chromosome complement

Category	Details
Main Crops	Pumpkin, Zucchini
Plant Family	Cucurbitaceae
Key Species	• Cucurbita pepo • Cucurbita moschata Duchesne • Cucurbita maxima Duchesne
Importance	Cultivated worldwide; economically significant
Research Focus	Fruit variability , genetic heritage
Gene List Update	Last complete update: over 10 years ago
Recent Advances	• New gene compilations • Genetic background of hybridization parents
Total Genes Conserved	• 79 genes (phenotypic/morphological traits) • 48 polymorphic allozyme genes
Additional Topics	Gene mapping and linkage

3.2 Life cycle and phenology

Pumpkin development begins with planting quality seeds in warm, permeable soil in late spring or early summers. Within 7 to 10 days, the seeds begin to emerge, revealing small green leaves. As the plant grows, it forms long stems that can reach up to 6 meters to support the flower and future fruits . Eight to 10 weeks after planting the yellow flowers, after being pollinated primarily by bees, and initiate the development of the fruit. Small green pumpkins increase size and change color as they mature. Requiring plenty of water, sunlight, and protection from pests and diseases. Depending on the type and growing conditions, a pumpkin generally takes 90 to 120 days to fully mature. Harvesting typically occurs in late summer or early fall, when the pumpkins have reached their full color, the wind is from, and the stems become dry and brittle. At this point, the pumpkins are carefully picked, sorted, and prepared for shipping to ensure they arrive in good conditions. Sales (n.d.)



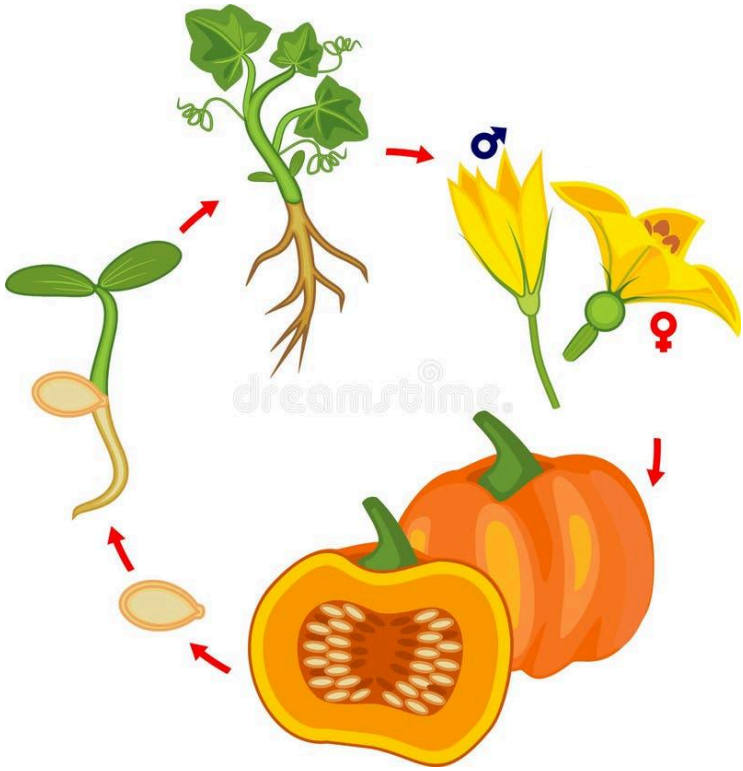
(*Plus Signup | Design Bundles*, n.d.)

3.3 Reproductive Biology

3.3.1 Sexuality

The pumpkin, which are monoecious, sexual expression progresses in stages from the production of only male flowers to a mixture, and finally to the production of only female flowers. Unlike cucumber and melon, the mechanisms in pumpkin are less understood. However, research has identified important genes such as CpACCS27A, CpCTR1/2, and CpWEI, which are related to ethylene signaling, with ethylene, unresponsive varieties being predominantly male. RNA sequencing has advanced the pumpkin, showing that genes such as CmaACS7, CmaACO1,

CmaETR1, and CmaEIN3 are strongly linked to the development of female flowers in Ccurbita maxima. These genes respond to chemical treatments and are especially active in female flowers tissues. Overall, both ethylene production and signaling are crucial for sex determination in pumpkins, highlighting the potential fro targeted genetic or hormonal interventions in breeding programs.(Wang et al., 2019)



(*Biology Sexuality of the Pumpkin - Google Search*, n.d.)

4.0 PROPAGATION AND MANAGEMENT

4.1 Natural Regeneration

(Durbin & Crawford, 2022) , (*Regenerative Agriculture | Quebec Pumpkin Seeds | Prana Foods*, n.d.), (*Pumpkins: A Small-Scale Agriculture Alternative | UC Agriculture and Natural Resources*, n.d.)

Regeneration Method	Description	Conditions Required	Limitations
Volunteer Seedlings	Seeds from decomposed pumpkins	- Undisturbed soil	- Not reliable at scale

	germinate naturally in the same field the next season	- Warm and moisture - Minimal wedding or tillage	- Vulnerable to pests and weather
Animal Mediated Dispersal	Animals eat pumpkin and disperse seed through dropping in nearly areas	- Presence of seed dispersing animals - Favorable deposition sites	- Many seeds are damaged - Low germination success in wild conditions
Pollinator Driven Crossbreeding	Cross pollination between cultivated pumpkins and wild Cucurbita species increases diversity in naturalized areas	- Nearby wild relatives - Active pollinators like bees	- Rare outside native range - Hybrids may not be viable or productive
Landrace Maintenance By Farmers	Traditional farmers allow partial self seeding and select vigorous plants, promoting semi natural regeneration over time.	- Use of open pollinated varieties - Low input farming practices - Seed saving traditions	- Human selection still required - Vulnerable to loss of genetic traits if not maintained carefully

It is difficult for pumpkins to grow on their own. One explanation is that, as a result of years of cultivation , pumpkins have undergone significant changes. Pumpkins have undergone significant changes. Pumpkins now requiere human assistance to grow because farmers selected the largest, sweetest, and best ones. The size and weight of pumpkin seeds is another factor. They stay close to the plant. For growth, they also requise soft or excavated soil. The seeds do not grow well in the wild because the soil is typically hard. Additionally, pumpkin plants are weak in natural settings. Without assistance, pumpkin plants perish because weeds grow more quickly and consume all the food and water.(Durbin & Crawford, 2022) , (*Regenerative Agriculture | Quebec Pumpkin Seeds | Prana Foods*, n.d.),

(*Pumpkins: A Small-Scale Agriculture Alternative | UC Agriculture and Natural Resources*, n.d.)

Pumpkins don't grow well on their own, but there are some farming techniques that can help. Leaving old pumpkins in the field is one's method. The seeds that are released when the pumpkins decompose can sprout the following season. Keeping plants and flowers close to the field is an additional strategy. Bees and other insects that are in the growth of pumpkins are drawn to these. Open pollinated seeds are also beneficial. Over time, these seeds become stronger and have the ability to grow repeatedly. Agroecology , or farming in harmony with nature, is the source of these concepts.(Durbin & Crawford, 2022) , (*Regenerative Agriculture | Quebec Pumpkin Seeds | Prana Foods*, n.d.), (*Pumpkins: A Small-Scale Agriculture Alternative | UC Agriculture and Natural Resources*, n.d.)

4.2 Planting

To successfully cultivate pumpkins, it's essential to begin with warm, rich soil and proper planting techniques. Similar to cucumbers, pumpkins thrive best in soil that has pH level ranging from 6.0 to 6.8. Each pumpkin plant needs sufficient spacing, so it's advisable to plant them on a mound roughly 3 feet wide that has good drainage. Testing the soil every year or two can help determine what amendments are needed for optimal pumpkin growth. Even without soil testing, adding compost can help the nutrient content and texture of the soil. In regions with cooler climates, you can warm up the soil by covering it with black plastic fro around a week before planting. After that, you can make holes in the plastic and place the pumpkin seedlings in them. (Plants, 2011)

Pumpkin vines grow rapidly and can dominate a garden area, so it's best to plant them at the border and guide the vines to spread outwards. Large pumpkin varieties require approximately 1.5 meters (5 feet) of space between each plant, while smaller types need around 60 to 90 cm (2 to 3 feet). This spacing allows for better growth and health, minimizing the risk of diseases. Pumpkins require a significant amount of water, particularly during their flowering and fruiting stages. Utilizing a drip irrigation system or soaker hose is ideal, as it delivers water directly to the base of the plants rather than onto the leaves. Watering early in the morning is recommended since wet leaves can dry quickly, reducing the chance of fungal issues such as powdery mildew. (Plants, 2011)

Additionally, it's vital to regularly provide fertilizer. A slow release type can supply nutrients over time, supporting strong growth and better pumpkin production. There are strategies to grow pumpkins to meet your preferences. For a greater yield, you might consider cutting the main vine trip when it reaches around 60cm (2 feet) in length. This encourages the development of more side branches and fruit. Additionally, removing all female flowers during the first three weeks can help strengthen the plant, leading to more pumpkins later. Conversely, if you want to produce fewer but larger pumpkins, allow only 3 or 4 fruits to develop on each vine. Afterward, remove any new flowers to direct the plant's energy into growing

those pumpkins larger. Cultivating pumpkins can also be an enjoyable activity, particularly for children. When pumpkins are still small and soft you can carefully scratch a name or design onto their surface. As they mature, these markings will enlarge, creating a unique decoration. With quality soil, ample water, appropriate fertilizers ,and attentive care, growing pumpkins can be a rewarding experience for everyone, whether they are beginners or seasoned gardeners. (Plants, 2011)

4.3 Management

You can lower the chance of pumpkin diseases by using good growing practices, keeping things clean, and planting disease resistance types. First, plant pumpkins in places where water drains well. Pumpkins do not grow well in wet fields, and too much water can cause disease. Try to plant early, if you can. This helps avoid mildew problems that often come later in the summer and fall. Also, remove sick or drying plants when you see them, even before planting in the field. Do not use sprinklers to water your pumpkins. Wet leaves can cause more diseases. Use drip irrigation instead, which gives water to the roots and helps keep leaves dry. Finally, change where you plant pumpkins each year. This is called crop rotation, and it helps stop diseases from building up in the soil. Using all these steps together helps keep your pumpkins healthy. (*Disease Management in Pumpkins | How to Treat Pumpkin Diseases*, n.d.)

Cucurbit powdery mildew fungal spores present on the top of pumpkin leaves.Photo by Allison Howell, Clay County Sheriff's Office.

Downy mildew symptoms. The leaves at the bottom of the image show early signs of symptoms with angular yellow lesions. Photo by Allison Howell, Clay County Sheriff's Office.

Angular lesions with gray/purple spore growth on the underside of the leaf. This is a key characteristic of downy mildew on cucurbits. Photo: Allison Howell, Clay County UAEX.

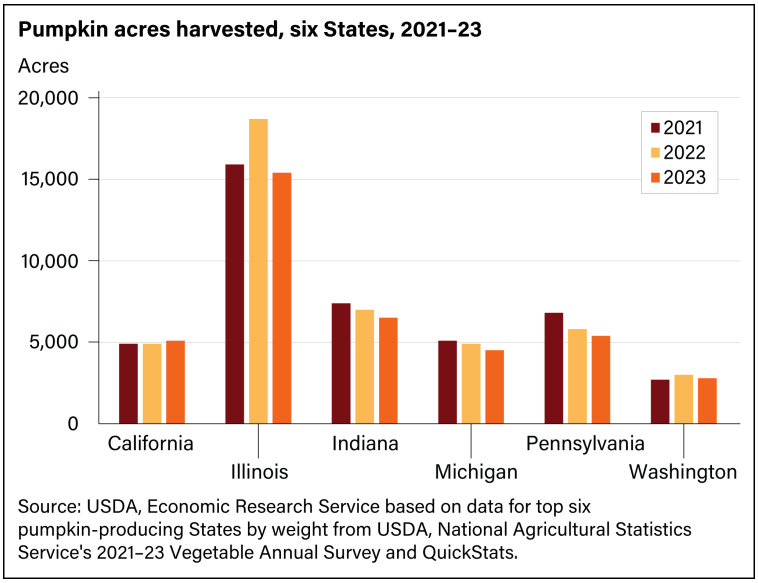
Plectosporium blight lesions present on pumpkin stems. Lesions have progressed and are beginning to bleach portions of this plant. Effected areas of the plant are more brittle and prone to breaking.

Plectosporium blight lesions present on a ripe pumpkin fruit. Photo: William Nesmith, University of Kentucky.

5.0 MARKETING AND ECONOMY

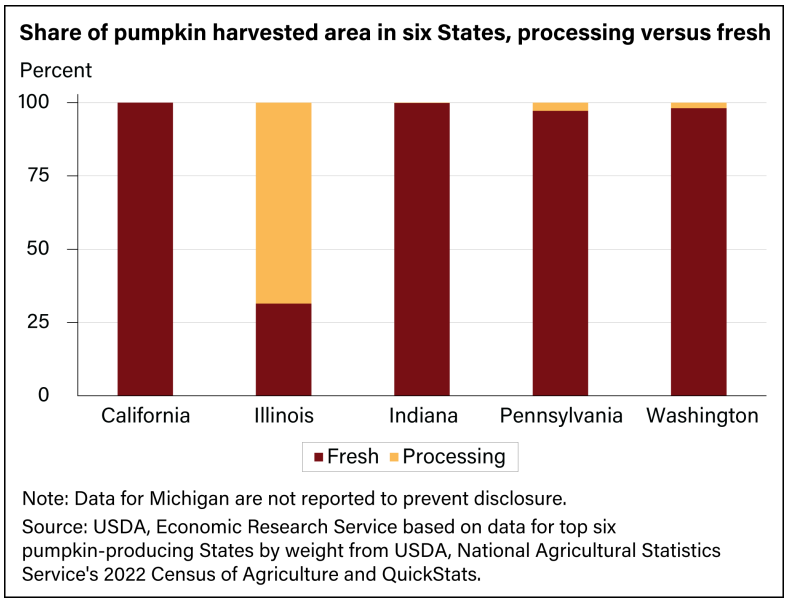
5.1 Major Distributions

"Pumpkins can be found growing in every state across the U.S, but six states produce the highest amounts. In 2022 the six states accounted for approximately 45% of the total pumpkin yield. Each year, the USDA reviews and publishes information about pumpkin farming."(*Pumpkins: Background & Statistics | Economic Research Service*, n.d.) "In 2023, Illinois took the lead,cultivating the largest quantity of pumpkins over 15,400 acres. The other prominent pumpkin producing states included Clifornia, Indiana, Michigan, Pennsylvania, and Washinton, with each cultivating between 2,800 and 6,500 acres."(*Pumpkins: Background & Statistics | Economic Research Service*, n.d.)



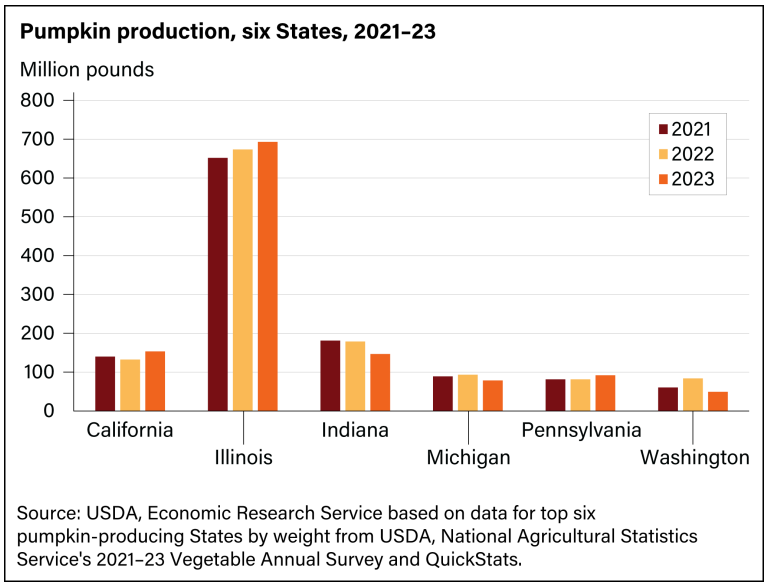
(*Pumpkins: Background & Statistics | Economic Research Service*, n.d.)

Illinois produces the highest number of pumpkins in the country, particularly for making things like pie filling. Approximately 70% of pumpkins from Illinois are used this way, while other states such as Pennsylvania, Washington, Indiana, and California mainly cultivate pumpkins for decorative purposes. This is the reason illinois has varied production levels and pricing compared to other leading pumpkin production states.(*Pumpkins: Background & Statistics | Economic Research Service*, n.d.)



(*Pumpkins: Background & Statistics | Economic Research Service*, n.d.)

Six leading pumpkin producing states produced more than 1.2 billion pounds of pumpkins in 2023. Illinois was the highest producer, harvesting 690 million pounds, which is more than the combined total of all other top states. California and Indiana both cultivated around 150 million pounds, Pennsylvania produced roughly 90 million pounds, Michigan's total was around 80 million pounds, and Washington's decreased to just 50 million pounds compared to last year's figures.(*Pumpkins: Background & Statistics | Economic Research Service*, n.d.)



(*Pumpkins: Background & Statistics | Economic Research Service*, n.d.)

The majority of pumpkins are available fresh for decoration purposes or for use in cooking at home. Most pie pumpkins are sent to factories, although a few are available in retail shops. Farmers cultivate a variety of jack o' lantern pumpkins, but consumers also like other types like White Howden or Fairytale. Leading up to Halloween in 2024, the wholesale cost increased from $157.50 for regular pumpkins to $ 350.00 for the unique varieties. By October 2024, the typical retail price for a Howden pumpkin was $6.21.(*Pumpkins: Background & Statistics | Economic Research Service*, n.d.)

Table 1. U.S. average wholesale price for pumpkins— various types, sizes, and bin widths— dollars per bin, September to October 2024. (*Pumpkins: Background & Statistics | Economic Research Service*, n.d.)

Week,2024	**Pie**	**Howden**	**White Howden**	**Fairytale**	**Mixed Heirloom**	
Pumpkin Size	Large	Large	Extra Large	Jumbo	Extra Large	
Bin Width	24-inch	36-inch	24-inch	24-inch	24-inch	
Sep, 1st week	175	157..5	-	220	350	
Sep, 2nd week	212.5	157.5	175	220	350	
Sep, 3rd week	212.5	157.5	175	220	350	
Sep, 4th week	212.5	157.5	175	220	350	
Oct, 1st week	212.5	157.5	175	-	350	
Oct, 2nd week	212.2	157.5	175	-	350	
Oct, 3rd week	212.2	157.5	175	-	350	
Oct, 4th week	171.7	157.5	175	-	350	

Table 2. U.S. average retail price for Howden pumpkins, dollars per pumpkin, September to October 2024.(*Pumpkins: Background & Statistics | Economic Research Service*, n.d.)

Week, 2024	Average retail price
September, 1st Week	5.78
September, 2nd Week	6.18
September, 3rd Week	4.93
September, 4th Week	5.62
October, 1st Week	4.68
October, 2nd Week	5.34
October, 3rd Week	6.21
October, 4th Week	5.22

5.2 Products

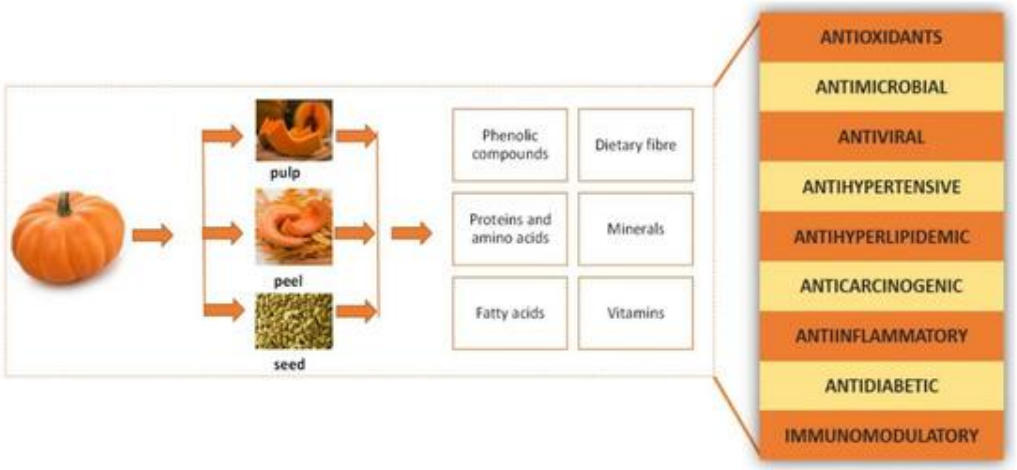
Pumpkin is a healthy vegetable with many vitamins, minerals, and good plant chemicals. People eat its pulp, seed and peel. These parts can help with health problems like heart disease, diabetes, and cancer. Pumpkin waste (like seed and peels) is usually thrown away, but it can be reused to make food, medicine, or other useful products. The seeds have lots of oil and protein. The peel has fiber and natural color. Using pumpkin waste is good for the environment and helps reduce food waste. Scientists want to use pumpkins more in food and health industries to make new, healthy, and eco-friendly products.(Gavril et al., 2024)

Nutrients:

- Antioxidants (help fight disease)
- Polyphenols and carotenoids (protect your body)

Eating these nutrients may help:

- Lower the chance of diabetes, cancer, and heart disease
- Help control blood sugar
- Protect the brain from Alzheimer's
- Lower stress and depression



Pumpkin is popular in pancakes, pies, custards, and muffins, cooked, baked, or processed into marinades, smoothies, soups, and juices. In the food industry, it is utilized as an ingredient in pastries, baked goods, biscuits, bread, candies, and baby food(Gavril et al., 2024)

5.3 Nutritional Value

Pumpkin is a very healthy food. It has many vitamins and minerals but not many calories.Pumpkin has beta - carotene and alpha- carotene, which are types of vitamin A. Your body changes them into vitamin A after you eat them.(Rd, 2023) seeds, also called pepitas, are often eaten as a snack. Once an ounce (15 grams) of seed with the shell has many nutrients. The Seeds don't have much sugar, but they have a lot of fat. This makes them a good snack for people who eat low carb or plant based foods.

One cup (245 grams) of canned pumpkin:

- Calories: 137
- Protein: 3 grams
- Fat: 7 grams
- Carbs: 19 grams
- Fiber: 7 grams
- Vitamin A: 209% of the Daily Value (DV)
- Vitamin K: 37% of the DV
- Copper: 28% of the DV

- Vitamin E: 22% of the DV
- Iron: 18% of the DV
- Magnesium: 13% of the DV
- Riboflavin: 10% of the DV
- Vitamin B6: 10% of the DV
- Vitamin C: 10% of the DV
- Potassium: 10% of the DV

Pumpkin seeds (15 grams):

- Calories: 86
- Protein: 4 grams
- Fat: 7 grams
- Carbs: 2 grams
- Fiber: 1 gram
- Copper: 21% of the DV
- Magnesium: 20% of the DV
- Phosphorus: 14% of the DV
- Zinc: 10% of the DV

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