

---

## Commercial Horticulture Production

Michael D. Rethwisch  
Vegetable and Field Crops Farm Advisor  
University of California Cooperative Extension

Many people enjoy horticultural products on a daily basis, but may not know where the products originated. For example, many people may realize that all of the top 10 maple syrup producing states (top three states are Vermont, New York, and Maine), are located in the northeastern quarter of the country. They may know that Hawaii has virtually all the U.S. tropical horticultural crop production including coffee, bananas, papaya, ginger root, pineapples and [macadamia nuts](#) as well as certain flowers such as anthuriums and protea due to its tropical climate. Many people are not aware of the production areas or the values of many commercial US horticultural crops however.

Commercial horticulture is an important part of the US crop production economy. Production of horticultural crops was worth more than \$40 billion in 2001 according to figures from the United States Department of Agriculture National Agricultural Statistics Service and Economic Reporting System. When compared with the value of field crops (\$61.6 billion) it becomes evident that commercial horticulture production is almost 40 percent of US crop production.

Commercial horticulture values were split almost evenly across three main areas in 2001:

- Vegetables \$13.517 billion (includes potatoes and sweet potatoes)
- Nursery/Greenhouse \$13.037 billion (includes sod/turf, floriculture & greenhouse, ornamentals)
- Fruits, nuts and berries \$12.617 billion (includes peanuts and grapes/berries)

The diversity and production of commercial horticulture crops is not evenly distributed across all states, being restricted by climates and growing conditions. This has resulted in some states or geographic areas having developed some very large amounts of horticulture, and often this is specialized commercial production.

Horticultural crops are especially important to those states where large amounts of commercial horticulture is produced. Commercial horticulture is very diverse, and includes melons and vegetables, fruits and nuts, berries, mint, and floriculture, as well as the seed industries associated with each of these areas including landscape ornamental production. Knowledge of the value and amounts of commercial horticultural commodities and where they are produced is necessary to understand the importance of horticulture in the United States.

---

## Vegetables and Melons



A wide variety of commercial vegetables are grown in the US, were valued at over \$13 billion in 2001. This includes fresh and processed vegetables, as well as potatoes and sweet potatoes.

### **Fresh Vegetables**

Fresh vegetables were planted on over 2.069 million acres in the US in 2001 (exclusive of potatoes and processed vegetables). Although a number of states have commercial fresh vegetable production, five states each grew more than 100,000 acres. The states and acreage were:

- California - 843,100 acres
- Florida - 196,300 acres
- Georgia - 140,550 acres
- Arizona - 125,800 acres
- Texas - 103,700 acres

Each of these states have year-round or nearly year-round growing conditions as well as being sizable states geographically. Parts of California and Arizona are also favored by low humidity and little rainfall, resulting in fewer foliar diseases that attack vegetables.

Many types of vegetables are planted each year. The most common vegetables (planted on at least 100,000 US acres in 2001) and acreages were:

- Potatoes\* - 1,327,000\*\*
- Sweet Corn\* - 733,450\*\*
- Tomatoes\* - 413,890\*\*
- Green peas - 217,440\*\*
- Snap beans\* - 210,780\*\*
- Head Lettuce - 194,200
- Watermelons - 173,700
- Cucumbers\* - 168,510\*\*
- Onions - 166,880
- Broccoli\* - 144,500
- Carrots\* - 103,000
- Cantaloupes - 101,930

\* Includes both processed and fresh

\*\* Majority of acres are for processing

Potatoes were the most valuable vegetable commodity, worth \$2.93 billion. Almost 20 percent of the US acreage is in Idaho (386,000 acres), followed by Washington (160,000 acres), and North Dakota (110,000 acres).

### Vegetables for Processing

Vegetable acreage devoted for processing is very significant at over 1,330,000 acres, and is about two-thirds the acreage devoted for fresh market production. Vegetables planted for processing are usually dictated by the processing plant location. Vegetable fields too far away from the processing plants makes it difficult for crops to arrive at the processing plant in the excellent conditions necessary for processing and/or more expensive due to trucking costs. Some states, such as Minnesota, have almost the entire vegetable acreage (processed + fresh) destined for processing.



The top five vegetables grown for processing after potatoes and their acreage in the U.S. in 2001 according to the USDA-National Agricultural Statistics Service were:

- Sweet corn (457,650 acres)
- Tomatoes (279,830 acres)
- Green peas (217,440 acres)
- Snap beans (210,780 acres)
- Cucumbers (109,710 acres)

Most of these are grown in the Great Lakes states (Wisconsin, Minnesota, Michigan, etc.) or the West Coast states.

Processing Crop and Top State in Acreage:

- Beets - New York
- Cabbage - Wisconsin
- Carrots - Wisconsin
- Cucumbers - Michigan
- Green Beans - Minnesota
- Snap Beans - Wisconsin
- Spinach - Texas
- Sweet Corn - Minnesota
- Tomatoes - California

The top five states and acreages devoted solely for processed vegetables production in 2001 were:

- California - 293,500 acres
- Wisconsin - 237,700 acres
- Minnesota - 208,310 acres
- Washington - 146,400 acres
- New York - 78,200 acres

The top value vegetable for processing was tomatoes (\$547 million), followed by sweet corn (\$446 million). The value of processed vegetables grown in the US was \$1.26 billion in 2001.

---

## Fruits, Nuts, Berries and Grapes

Fruits, nuts and berries and grapes encompass a wide variety of crops, many that will bear for up to 20 or more years. Because these crops are almost all perennial, crop acreages change little from year to year. Some are very dependent upon bees for pollination (such as almonds), for production while others are not. These crops are very diverse, but almost all (with the exception of the nut crops) depend upon manual hand harvest from the tree, vine or bush.

### **Berries and Grapes**

Many berries are primarily grown in the Pacific Coast states. Oregon is the primary state for blackberries, boysenberries, and loganberries, second leading raspberry producer, and is third in acres devoted to strawberry production. Washington leads the nation in production of raspberries. Huckleberries are grown in Washington. Value of all of these types of berries was \$110 million in 2001.

#### ***Blueberries***

Blueberries are mostly grown in the eastern US, where acidic soils are conducive to their growth. Michigan is the leading producer of blueberries with over 40 percent of the US blueberry acreage, followed by New Jersey, Oregon, Georgia, and Washington. Highest blueberry yields occur in Oregon and Washington. US blueberry production was worth \$188 million in 2001.

#### ***Cranberries***

Cranberry production is usually limited to areas that have standing water. Wisconsin lead the nation's production in 2001, followed by Massachusetts. These two states accounted for approximately 80 percent of the entire US production. Other states with commercial cranberry production include New Jersey, Oregon and Washington. US cranberry production was valued at just under \$100 million in 2001.

#### ***Grapes***

Grapes are grown across the US, with different types of grapes in different regions. Concord and Niagara grapes are grown in New York, Michigan and Pennsylvania, as well as in Washington which is the leading US leader for both types of grapes with approximately 33 percent of the Niagara grape production and 55 percent of the Concord grape production.



California is the main producer of grapes, where they are utilized for eating, as raisins, and for wine. California had 86 percent of the entire US grape acreage and 92 percent of the total US production in 2001. US grape production was valued at over \$2.9 billion in 2001.

#### ***Strawberries***

Strawberries are grown across the US with some 46,000 acres devoted to production in 2001. Approximately 50 percent of the acreage and 80 percent of the production occurred in California. Florida was the second leading state in both acreage and yields/acre in 2001. US strawberry production was worth more than \$1 billion in 2001.

## **Fruits**

The US grows a wide variety of fruits which include apples, apricots, avocados, bananas, cherries, dates, figs, guavas, kiwi fruit, nectarines, olives, papayas, peaches, pears, persimmons, pineapples, pomegranates and plums, and many types of citrus. This crop area was valued at over \$8 billion in the US in 2001.

### ***Apples***

Apples are the second most widely grown commercial fruit in the US, with over 450,000 acres devoted to production. About 33 percent of these acres are located in Washington. Other states with over 10,000 acres of apples include New York, Michigan (both over 50,000 acres), California, Pennsylvania and Virginia. These six states have 75 percent of the US apple acreage. Apple production in the US is valued at over \$1.5 billion in 2001.

### ***Cherries***

Cherries are also widely grown in the US, with two primary types having substantial acres. Sweet cherries are produced primarily in the West Coast States, while Michigan has two-thirds of the nation's tart cherry acreage and produces about 78 percent of the total. There were more bearing acres of sweet cherries (68,220) than tart cherries (38,770) in 2001. US cherry production was valued at \$327 million in 2001, with 82 percent of this from sweet cherries.

### ***Citrus***

Citrus production occurs chiefly in four states in areas that escape freezing temperatures: California, Arizona, Texas and Florida. Oranges are produced on almost 800,000 acres in the US, with 55 percent of this acreage devoted to 'Navel' oranges and about 45 percent devoted to 'Valencia' oranges. Oranges were valued at over \$1.8 billion in 2001, with most of this production from Florida.



Florida also led US production of tangerines, and grapefruit, with California was a distant second in production of these types of citrus. Lemons are commercially produced in just California and Arizona. Lemons were valued at over \$370 million in 2001, followed by grapefruit (\$285 million) and tangerines (\$124 million). Citrus production in the US was valued at over \$2.6 billion, with about two-thirds of the value from oranges.

### ***Peaches and Plums***

Peaches and plums are both grown on more than 100,000 acres. California leads the nation in both with almost one-half of the peach acreage and 95 percent of the plum acreage. Other states with substantial peach acreage (10,000+ acres) include Georgia, South Carolina, Texas and New Jersey. Peaches were worth just under \$500 million while US plum/prune production \$173 million in 2001.

## Pears

Pear production is similar to that of sweet cherry production in that it occurs mainly in the states of Washington, California and Oregon. These states had 93 percent of the bearing pear acreage and almost 98 percent of the production. US pear production was worth \$272 million in 2001.

## Other Fruits

California has virtually all the nation's date, kiwi fruit, nectarine, apricot, olive, pomegranate and fig acreage. Olives, dates and pomegranates are also produced in Arizona. Hawaii has all the US banana, guava, papaya, and pineapple production. Both avocados (\$296 million) and nectarines (\$127 million) were valued at over \$100 million in 2001.

US Commerical Fruit Acreage in 2001	
Fruit	Acres in Production
Oranges	796,700
Apples	454,220
Peaches	167,900
Grapefruit	138,300
Plums including prunes	129,900
Cherries	88,550
Pears	70,110
Lemons	64,300
Tangerines	38,600
Nectarines	37,100
Olives	33,700
Apricots	21,890
Pineapples	19,900
Figs	16,000
Kiwi fruits	6,600
Dates	4,800
Persimmons	2,165
Papayas	2,000
Bananas	1,040

## Nuts

A number of nut crops are commercially produced in the US. The combined values of these crops was \$2.5 billion in 2001.

Nut crop and bearing acres, 2001	
Crop	Bearing Acres
Peanuts	1,405,800
Almonds	420,000

Pecans	(data not available)
Walnuts	170,000
Pistachios	65,400
Hazelnuts	28,480
Macadamia Nuts	19,200

### ***Peanuts***

Peanut production has been traditionally limited to acreage granted via state quotas, with top production noted from the states of Georgia (38 percent of US total value), Texas, Alabama and Alabama. There may be a shift in future peanut acreage location due to the quotas being eliminated in the 2002 US Farm Bill as well as diseases such as tomato spotted wilt virus which has become very damaging in Georgia.

### ***Pecans***

Pecans are produced in a number of southern states, although 70 percent of the crop was produced in just three states (Georgia - 30 percent, Texas - 22 percent, New Mexico -19 percent). Arizona, Oklahoma, Louisiana, and Alabama also produce substantial amounts. Pecans were valued at just over \$200 million in 2001.

### ***Other Nuts***

Many nuts which grow on trees are grown commercially in just one or two states. Oregon produces almost of the US hazelnuts, California grows virtually all the English walnuts, almonds, and pistachios, while virtually 100 percent of the US macadamia nuts production occurs in Hawaii. Almonds accounted for \$730 million in 2001, followed by English walnuts (\$341 million), and pistachios (\$159 million)

### **Nursery/Greenhouse**

This is a broad and diverse area, and includes sod, turf, and lawns, as well as floriculture and all the nursery and landscape ornamental production. These combined areas were worth over \$13 billion in 2001.

### **Floriculture**

Floriculture is an important horticulture industry in the United States, valued at over \$4.74 billion in 2001. Five states(California, Florida, Michigan, Texas and Ohio) accounted for 53 percent of the total value, with the leading state of California producing \$1.02 billion in wholesale value, followed by Florida (\$765 million). Floriculture is sometimes divided into five main areas. These areas and value in 2001 were:

- Bedding and garden plants - \$2.18 billion
- Potted flowering plants - \$832 million
- Foliage- \$585 million
- Cut flowers - \$424 million



- Cut cultivated greens - \$111 million

### ***Bedding and Garden Plants***

States with the leading production of bedding and garden plants are California, Michigan, Texas, Ohio and Florida. Bedding and garden flat sales were worth almost \$900 million. The top three plants in this area (Impatiens, Pansies/ Violas, Petunias) accounted for over 1/3 of this value. Potted geraniums were the most valuable plant (\$150 million), followed by flats of Impatiens (\$117 million).

### ***Potted Flowering Plants***

Potted plants are often for indoor or patios. Poinsettias are the major plant in this category, accounting for \$256 million in value.

### ***Foliage***

Florida is the leading state, and has 62 percent of the total US production. This category includes the potted foliage plants and hanging baskets.

### ***Cut Flowers***

The rose is the most popular cut flower in the US, with some 270+ million blooms. Rose production was valued at \$67.7 million. Lilies were the second most valuable cut flower (\$57.7 million) followed by tulips (\$26.3 million). California produces about



of the entire US value of all fresh cut flowers.

While cut flower demand has continued to increase in the United States, domestic production has been declining. Over two-thirds of the major cut flowers are now imported from Columbia, Costa Rica, Ecuador, Mexico and the Netherlands. The shift to more reliance on imports is partially due to economics, as the minimum wages in other countries is lower than in the US, coupled with better post-harvest technology.

### ***Cut Cultivated Greens***

Florida produces almost 80 percent of the plants in this category, which includes leatherleaf ferns.

### ***Nursery/Ornamentals***

Nursery and ornamental production is valued at over \$3.3 billion. California accounts for 28 percent this total, followed by Oregon (15 percent) and Florida (14 percent). The top valued nursery and ornamental production categories and values in 2000 were:

- Deciduous shrubs/ornamentals - \$772 million
- Broadleaf evergreens - \$593 million
- Deciduous shade trees - \$406 million
- Coniferous evergreens - \$403 million

Note: Does not include Christmas trees at \$149 million.

### **Grass (Turf/Sod) Production**

Although direct figures were not available, it is estimated that the sod, turf, and lawn grass seed segments are valued at almost \$5 billion. Ryegrass seed is produced in the Pacific Northwest, while almost all bermudagrass seed production occurs in southeastern California and southwestern Arizona. Sod farms exist across the US.

### **Other Horticultural Crops**

There are a number of crops that could be discussed, but these are two crop areas that deserve recognition.

### **Dry Edible Beans & Peas, Lentils**

Dry edible beans and peas, as well as lentils, are sometimes forgotten and/or ignored crops. They are a major crop in terms of horticultural acreage for many states in the western and northern areas of the US, with over 1.85 million acres planted in 2001. This is a greater area than the combined area of all US vegetables planted for processing and is a larger area than the state of Rhode Island.

The majority of these acres (1.43 million) are dry edible beans, which include lima, navy, Great Northern, small white, pinto, red kidney, pink, small red, cranberry, black, garbanzo and blackeye. Pinto beans are the most widely grown (40+ percent of acres), followed by navy, garbanzo, kidney, and Great Northern beans. Each of these varieties were planted on over 100,000 acres in 2001.

Leading states in planted dry edible bean acreage in 2002 were:

- North Dakota - 750,000 acres
- Michigan - 270,000 acres
- Nebraska - 190,000 acres
- Minnesota - 165,000 acres
- California - 100,000 acres
- Colorado - 100,000 acres)

Washington and Idaho grow about two-thirds of the US dry edible peas and approximately 75 percent of all US lentils, with Washington being the lead state for both crops. The total production value of dry edible beans has declined in recent years, valued at just under \$400 million, while dry edible peas and lentils were valued at more than \$50 million in 2001.

### **Mint**

Peppermint and spearmint are the most popular mints grown in the US, with commercial production in at least six states. Almost 100,000 acres of these two types of mint were harvested in 2001, primarily from four states (Oregon, Washington, Idaho and Indiana), with 80 percent of the acreage devoted to peppermint.

Total US production of peppermint and spearmint was 8.3 million pounds in 2001, and value of mint oil was over \$18 million in 2001.

## **Billion Dollar Crops**

Eight individual horticultural crops were valued at over \$1 billion in 2001. These crops and values were:

1. Potatoes - \$2.933 billion
2. Grapes - \$2.794 billion
3. Oranges - \$1.834 billion
4. Tomatoes - \$1.666 billion
5. Apples - \$1.514 billion
6. Head lettuce - \$1.273 billion
7. Strawberries - \$1.088 billion
8. Peanuts - \$1.003 billion

Totaled together, these eight crops were valued at just under \$14 billion and represent over one-third of the total US value of horticultural products. As US horticulture continues to increase in value, it is expected that more horticultural crops will be valued at over \$1 billion in the near future.