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## Appendix A.

# General Explanation

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### **COMBINED DATA COLLECTION FOR THE 1998 CENSUS OF HORTICULTURAL SPECIALTIES AND THE 1999 COMMERCIAL FLORICULTURE SURVEY**

NASS combined the data collection activities for the 1998 Census of Horticultural Specialties with the 1999 Commercial Floriculture Survey (survey data were collected in 1999 for the 1998 production year) to reduce respondent burden and to minimize data collection expenses. NASS conducts an annual survey of all commercial floriculture producers in the United States. The survey includes all operations that produce and sell \$10,000 or more of fresh cut flowers, potted flowering plants, foliage plants, bedding plants, or cut cultivated greens during the survey year. By definition, commercial floriculture production is a horticultural specialty and, consequently, all operations identified for inclusion in the commercial floriculture survey were included on the horticultural specialties mail list.

The 1998 Census of Horticultural Specialties questionnaire includes all questions ordinarily asked in the annual commercial floriculture survey. This format ensured that respondents who qualified for both the census and the survey did not have to file the same information in two separate reports.

#### **MAIL LIST**

The census of horticultural specialties mail list included all operations identified in the 1997 Census of Agriculture with sales of \$10,000 or more of horticultural specialty crops. Additional operations were added to the mail list from a continuously updated NASS name and address list that identified operations with floriculture/horticulture activity but gave no indication of the sales size of the operations.

The final horticulture specialties census mail list consisted of 45,092 names. Of this number, 17,305

represented growers in the 1999 Commercial Floriculture Survey. The 1997 Census of Agriculture reported 32,531 horticultural operations.

#### **METHOD OF ENUMERATION AND DATA COLLECTION**

The 1998 Census of Horticultural Specialties was conducted primarily by mail and supplemented by telephone calls and personal enumeration. Operations that qualified for the commercial floriculture survey received an A98-A19.1 questionnaire. Hawaii had its own State-specific version, the A98-A19.3 questionnaire. The A98-A19.2 questionnaire was used for the remaining operations. The content of the questionnaires was basically the same. Only the color of the forms was different to facilitate processing and control.

The initial mail package included a questionnaire, letter, and instruction sheet. Data collection for operations identified for inclusion in the commercial floriculture survey began December 28, 1998. Data collection for all other operations in the census of horticultural specialties began January 4, 1999. A single mail followup was mailed out 4 weeks after the initial mailings to all nonrespondents.

Questionnaires were mailed from and returned to NASS regional mail centers. Mail centers opened the returned envelopes, sorted the questionnaires by State, and shipped them overnight to the appropriate NASS State Statistical Office (SSO) on a daily basis.

#### **DATA PROCESSING**

All questionnaires were clerically reviewed prior to data entry to identify inconsistencies and ensure that the data could be keyed. Major inconsistencies, respondent remarks, blank forms, and large horticultural cases were reviewed by analysts prior to data entry. Data from each questionnaire were

processed through a computer edit that identified inconsistent entries. Each edit failure was reviewed manually.

After the edit, an imputation program was implemented for missing data and inconsistencies within the questionnaire based on State averages. Any operation that was in business but failed to respond was represented statistically by a similar operation based on type, sales, and geographical area.

After all the data were edited, records meeting the definition of a commercial floriculture operation were copied into a separate file. These records were subjected to further processing and data analysis for the 1999 Commercial Floriculture Survey.

Prior to publication, tabulated totals were reviewed by analysts in the SSOs to identify and resolve remaining inconsistencies and potential coverage problems. Comparisons were made to the 1997 census data and other available check data.

## DEFINITIONS

The following definitions and explanations provide a detailed description of specific items and terms used in this publication and on the questionnaire. For an exact wording of the questions on the 1998 Census of Horticultural Specialties questionnaire and information sheet, see appendix B.

Plants purchased with the intention of immediate resale and with growth not added to the plant during a short holding period were excluded.

**Aquatic plants** – The specific item on aquatic plants is new for 1998. It includes plants with leaves at least partially submerged in water, plants with foliage floating on the water's surface, plants floating freely on water and with well-developed roots, and plants with their bases or roots submerged in water while most of their top growth is visible above the water. Algae and seaweed are excluded.

**Bedding/garden plants** – These include flowering and vegetable-type plants intended for outdoor use. Flowering plants are transplanted to beautify the landscape and can be annuals, biennials, or herbaceous perennials. Bedding plants may be used

in patio pots, window boxes, and hanging baskets. Vegetable transplants are intended for use by home gardeners. Bedding/garden plants are marketed as flats, individual pots, or hanging baskets. Flats vary in size and number of plants per flat. Bare root herbaceous perennial transplants were included under herbaceous perennial liners.

**Cultivated mushrooms** – This category includes cultivated mushrooms from the Basidiomycete family, grown as a food source. Data reported in square feet of bed area used for mushroom production were adjusted during processing when it was apparent that the bed area was reported more than once. Bed area is the square feet used at any time during the growing year.

**Cut Christmas trees** – This item is new for 1998. It includes data for acres of Christmas trees in production, number of trees sold, and value of sales. Live balled and burlapped and container-grown Christmas trees were reported as nursery plants.

**Cut cultivated greens** – Cut cultivated greens are grown as filler and foliage for cut flower arrangements. Greens harvested from the wild and not cultivated were excluded. Cut cultivated greens are published as bunches, vines, or pounds based on plant type.

**Cut flowers** – Primarily grown for their blossoms, several crops of cut flowers can be produced from the same area each year. After the flower is cut, the plant is either discarded or used for the production of more flowers, depending on the variety of the plant. Cut flowers are published as bunches, blooms, stems, spikes, heads, or sprays based on plant type.

**Dried bulbs, corms, rhizomes, or tubers** – It includes the production of dry corms, tubers, rhizomes, tuberous roots, and “true” bulbs grown for sale to bulb forcers and gardeners.

**Energy expenses** – The cost of energy for the horticultural operation was collected. Energy expenses not directly related to the growing operation, such as heating or cooling for office areas or retail outlets, etc., are not included.

**Flats** – For this publication, a flat is defined as 11" x 22." Questionnaire responses with other dimensions were converted to this standard unit.

**Foliage plants** – Foliage plants are produced for their decorative shape, size, color, and stem and leaf characteristics, and are used for interior decoration or interior landscaping. They are usually sold by the pot or hanging basket. The data are published as pots or baskets.

**Greenhouse-produced food crops** – This includes only food crops, such as vegetables, melons, strawberries, and sprouts, grown under glass or other protection. Food crops grown hydroponically, i.e., in nutrient solutions without soil, are included. Food crops grown outdoors were not included within the scope of the horticultural specialty census. Vegetable plants grown for home gardens are included under bedding/garden plants. Strawberry plants grown for home gardens are included under nursery plants.

**Horticultural specialty crop** – This includes crops, such as nursery stock, shrubbery, flower seeds and plants, foliage plants, bulbs, cultivated florist greens, short term woody crops, Christmas trees, aquatic plants, and sod, grown under cover and/or in the open and food crops that are grown under cover. It excludes vegetables and fruits grown in the open.

**Hybrid poplar** – See short term woody crops.

**Irrigated land** – Shows the acres irrigated for the outdoor production of nursery plants, turfgrass sod, sprigs, or plugs, and other horticultural specialty crops. New irrigation data items for 1998 include method of irrigation used, source of water used, and percent of irrigation water recycled. In addition, data are reported for square feet and acres in the open and irrigated by various methods of irrigation, such as hand watered by hose, sprinklers, drip irrigation, subirrigation, and other methods.

**Kind of business** – All operators were classified by kind of business. This is composed of 18 categories based on the grower's principal source of income. A rule of more than 50 percent was used as a determining factor. When a specified commodity group comprised more than 50 percent of an operation's total sales, the operation was then identified under that category. An operation was classified as "other" when the sales in any one commodity group did not equal more than 50 percent of the total sales. The 18 categories used to identify an operational kind of business are:

Annual bedding/garden plants  
Aquatic plants  
Cultivated mushrooms  
Cut Christmas trees  
Cut cultivated greens  
Cut flowers  
Dried bulbs, corms, rhizomes, or tubers  
Flower seeds produced for sale  
Foliage plants  
Greenhouse produced food crops  
Herbaceous perennial plants  
Nursery plants  
Potted flowering plants  
Transplants for commercial production  
Turfgrass sod, sprigs, or plugs  
Unfinished plants or propagation materials  
Vegetable seeds produced for sale  
Other horticultural crops

**Labor** – This includes the number of hired workers, including paid family members, by the number of days worked. Employees not directly involved in the growing operation, e.g., garden center clerks, are excluded.

**Land, structures, and equipment** – Operators were asked to report the current market value of land and buildings owned, rented, or leased from others and all machinery and equipment kept on the place and used specifically for the horticultural operation. Market value refers to the respondent's estimate of what the land, buildings, machinery, and equipment would sell for under current market conditions.

Inquiries concerning land area used for specific commodity groups and land area covered by greenhouses were included on the questionnaire. Multiple cropping, such as the multiple use of the same area for flowering and bedding plants, will duplicate greenhouse space or land area in some instances.

**Marketing channels** – Marketing channels is a new item for 1998. Respondents were instructed to report the percent of horticultural specialty crops sold through each of the listed marketing channels. Plants for further growing on, e.g., liners, lining out stock, plug seedlings, tissue cultured plantlets, prefinished plants, or propagation materials, such as cuttings, were excluded. Some respondents reported selling directly to consumers at wholesale prices. This

inconsistency was permitted because the respondents were offering wholesale prices to purchasers who would normally be considered retail customers.

**More than one growing location reported** – Data for each operation were tabulated in the grower’s principal State and county. The principal State and county were defined as the one location where the largest value of horticultural specialty crops were grown.

**Nursery plants** – This item includes the major categories of plants, such as deciduous shade and flowering trees, coniferous and broadleaf evergreens, shrubs, bushes, ground covers, fruit and nut trees, grapevines, small fruit plants, and vines. Nursery plants were collected in two parts - - unfinished plants, such as liners, seedlings, rooted cuttings, etc., and finished plants of sale size. The sales of the unfinished nursery plants are included with unfinished plants and propagation materials and not under nursery plants sold.

Seedlings for reforestation are considered forestry and when identified were excluded. Plants purchased from others for immediate resale or without growth or change to the plant were excluded. Evergreens grown and cut for use as Christmas trees were excluded.

**Potted flowering plants** – Grown for their flowering qualities and sold for indoor or patio use, most potted flowering plants are produced for a specific season of the year or holiday. Includes forced bulbs sold in pots. Data are published by number of containers sold. A container is a pot or hanging basket for this group.

**Sales** – This represents the sum of all horticultural specialty crops grown and sold from the operation. It does not include income from landscape contracting, plant rental, garden center items sold, such as tools, fertilizer, etc.

Data were collected for the value of crops sold, both wholesale sales and/or total sales. Only the data for total sales and wholesale sales are published. Retail sales may be obtained by subtracting wholesale sales from total sales.

**Seed production** – This item includes data for vegetable seeds produced outdoors or under glass,

except potato and sweet corn. Flower seeds produced outdoors are also included.

**Selected production expenses** – Data include selected production expenses paid by the business for the production of horticultural specialties. Expenses include the cost of plants, seeds, bulbs, rooted cuttings, mushroom spawn, and seedlings. Also included is the cost of all forms of fertilizer and chemicals, such as insecticides, pesticides, and fungicides and application costs. Energy expenditures used for the horticultural operation, such as natural gas, electricity, gasoline, gasohol, diesel fuel, LP gas, etc., are included.

**Short term woody crops, including hybrid poplars** – A new item for 1998 is quick-growing trees, such as hybrid poplar or cottonwood, that are grown for less than 10 years for pulpwood, saw logs, etc. The production of these trees involves more than simply planting tree seedlings. Operations that provide inputs and resources, such as fertilizing, thinning, watering, and spraying, are included. Operations planting seedlings for pulpwood with limited or no intervention by external resources are considered forestry operations and not horticultural specialty operations. This item was included in the other kind of business category.

**Tobacco transplants grown for sale** – This includes tobacco transplants grown for sale in greenhouses, seed beds, or cold frames, and excludes tobacco transplants for the farmer’s (grower’s) own use. This item was included in the other kind of business category.

**Transplants for commercial production** – This includes only vegetable and strawberry plants sold for large-quantity production outside of residential use. This category was included to ensure that growers would report vegetable and strawberry transplant sales.

**Turfgrass sod, sprigs, or plugs** – This category includes all varieties of specialized grasses cultivated for sale as sod. Acres harvested and the value of gross sales are included. Grass acreage in production is a new item in 1998. It includes acres harvested in 1998 and acres planted to grass intended for sale as sod in subsequent years and not harvested in 1998.

Including sprigs and plugs with turfgrass sod is

new in 1998. These items were not collected with sod harvested in the agriculture census; therefore, these data are not comparable to the 1997 Census of Agriculture or previous censuses of horticultural specialties. Turf or sod plugs are small cylindrical or block-shaped sections extracted from field turf or cut from strips of sod. Sprigs are individual plants or sections of plants containing several nodes from which new plants may develop.

**Type of ownership** – The following classifications were used to identify the types of ownership:

Individual proprietor, excluding partnerships and corporation.

Partnership, including family partnership.  
Corporation, including family corporation.  
Other - Includes institutional operations, such as schools, hospitals, penitentiaries, government agencies, and experimental and research operations.

**Unfinished plants or propagation materials** – Unfinished plants (plants for further growing on) or propagation materials are grown or produced by specialty growers who sell them to other growers. These plants or materials include seeds, cuttings, liners, plug seedlings, tissue-cultured plantlets, and prefinished plants.