**APPENDIX 1-6. Use Site Footprints for Thiamethoxam**

1. Agriculture Uses

Use site footprint layers represent the application sites for agricultural and non-agricultural label uses. The best available data to spatially characterize specific agricultural crops in the continuous United States (ConUS) is the Cropland Data Layer (CDL), produced by the U.S. Department of Agriculture. Several methods have been employed to minimize data errors within the CDL. The CDL is a landcover dataset that has over 100 cultivated classes that were grouped into 13 general classes (see **APPENDIX 1-5**). Lumping classes reduces the likelihood of errors of omission and commission between similar crop categories. In selecting how to group crops from the CDL, EPA referred to the grouping used by the U.S. Geological Survey (Baker and Capel, 2011[[1]](#footnote-2)) and the Generic Endangered Species Task Force (Amos *et al*., 2010[[2]](#footnote-3)). This information considers environmental factors that influence the location of crops and the error matrices provided by USDA with the original CDL data. By considering these agronomic factors in addition to the error matrices it is possible to improve the accuracy and year-to-year matches for these UDLs while retaining agronomic similarities. This categorical aggregation into the UDL crop groups does not account for changes in agricultural practices but the temporal aggregation does. The UDLs used in this assessment include 5 years of the CDL, 2013-2017, aggregated to account for changes year to year such as crop rotations. Anywhere a class occurs within those 5 years would be represented in the footprint layer. These temporally aggregated and categorially grouped layers generated from the CDL are referred to as Use Data Layers or UDLs.

The agricultural classes were further refined by comparing county level National Agricultural Statistics Service (NASS) 2012 Census of Agriculture (CoA) acreage reports to county level UDL acreages (additional detail can be found in the tool documentation, “**Processing the Census of Agriculture Data”** section). The UDL acreages represent the temporally aggregated and categorically grouped processing steps previously described, summarized at the county level. If a county’s UDL acreage for a given class was lower than the NASS acreage, the UDL extent was expanded within cultivated areas until the UDL acreage matched or exceeded the NASS CoA. Using the temporally and categorially aggregated UDL as an input, a script was developed that compares each UDL in each county to the corresponding NASS CoA acreage report. If the UDL acreage was less than NASS, the raster was expanded in 1 pixel iterations until the NASS acreage value was reached, exceeded, or the area within the cultivated mask was built out. Region growing was restricted using the UDL Cultivated Layer from the last year of the CDL as a mask (2017). This avoids buffering into any non-agricultural landcover types. This method reduces uncertainty related to landcover mapping by ensure the acres mapped on the ground in the UDL corresponds to the reported acreage from the CoA in this case, 2012. This helps addresses the uncertainty in acreage estimates in the landcover data given the known downward area bias in area estimates related to remotely sensed data. Additional details and the python scripts for this process can be found in with the tool documentation, **Generating Use Data Layers**, “**CDL to UDL Processing and Action Area Python Scripts**” section.

Every assessment begins with cross-walking registered uses into a landcover category. Chemicals are often not represented by all 13 UDLs. Some chemicals specify geographic restrictions for a given use (*i.e*., application on wheat is limited to the state of Idaho). Geographic limitations for registered uses are imposed on the dataset downstream in the data processing workflow. The geographic restriction should be extracted from the use layer before it is aggregated with all other chemical uses to generate the action area for the Thiamethoxam’s agricultural uses are crosswalked to 9 of the UDLs classes, there are no geographic restrictions. A complete crosswalk for the thiamethoxam agricultural uses is provided in **Table 1** generated from **ATTACHMENT 1-4.** This crosswalk includes the label use name, the name(s) from the Census of Agriculture, SUUM use site (**APPENDIX 1-4**), and the UDL.

In addition to the potential use site each UDL is buffered in all directions using the ESRI ArcGIS Euclidean distance tool. This buffered area represents the potential exposure area associated with drift.

The CDL is not available for areas outside of the contiguous United States (ConUS). The CoA is often unavailable outside of ConUS as well. The Agricultural UDL Data Sources section describes how agriculture was spatially modeled by regions outside of ConUS, referred to as the non-lower 48 (NL48).

1. Non-Agricultural Uses

Non-agricultural label uses include a wide range of landcover and land use categories. Each label use was carefully considered and cross-walked with the best available landcover data. Where available, the 2011 National Land Cover Dataset (NLCD) was used to represent many non-agricultural label uses. Where NLCD wasn’t available, the NOAA C-CAP dataset and corresponding landcover classes were used. Details on the data sources for each non-agricultural UDL are provided in the Non-Agricultural UDL Data Source section. A complete crosswalk for the thiamethoxam non-agricultural uses is provided in **Table 2**. This crosswalk includes the label use name, SUUM use site (**APPENDIX 1-4**), and the UDL data sources used to generate each layer are provided in the UDL data source section.

1. Action Area

To create the action area for thiamethoxam all pertinent agricultural and non-agricultural UDLs are combined. This is completed by placing the UDLs on top of each other and combining them into one footprint. The resulting layer includes all locations found in each of the UDLs and with the buffered areas (non-use site locations) represented as minimum distance to a potential use site across all UDLs. This sets the exposure area for thiamethoxam related to drift. For additional detail on how the action area is generated see the tool documentation, “**CDL to UDL Processing and Action Area Python Scripts**” section.

1. UDL Data Sources
	1. Agricultural UDL Data Sources for the NL48
* **ConUS**
	+ Cotton, Soybeans, Citrus, Grapes, Other Grains, Other Orchards, Other Row Crops, Other Row Crops (ORWA) and Vegetables and Ground Fruit, UDLs generated from the Cropland Data Layer (CDL) 2013-2017. See **APPENDIX 1-5** for details on the specific crops found in each UDL. National UDLS were used. These UDLs with registered seed treatment application in addition Corn, Wheat, Rice and Alfalfa UDLs in **APPENDIX 4-5.**
* **Alaska (AK)**
	+ National Land Cover Dataset (NLCD 2016) Cultivated Class (82); inclusive of all agricultural crops.
* **Hawaii (HI)**
	+ National Oceanic & Atmospheric Administration (NOAA) Coastal Change Analysis Program (CCAP 2011), Cultivated Class (6); inclusive of all agricultural crops.
* **Puerto Rico (PR)**
	+ NLCD Cultivated Class (2001) (82); inclusive of all agricultural crops.
* **Guam (GU)**
	+ CCAP 2011 Cultivated Class (6); inclusive of all agricultural crops.
* **Marianas (CNMI)**
	+ CCAP 2004 Cultivated Class (6); inclusive of all agricultural crops.
* **American Samoa (AS)**
	+ CCAP 2010 Cultivated Class (6) inclusive of all agricultural crops.
* **Virgin Islands (VI)**
	+ CCAP 2012 Cultivated Class (6) inclusive of all agricultural crops.
	1. Non-Agricultural UDL Data Sources ConUS and NL48 – National Landcover Dataset (NLCD)

Non-agricultural label uses include a wide range of landcover and land use categories. Each label use was carefully considered and cross-walked with the best available UDL. It is possible for a label use to crosswalked to multiple UDLs, this is discussed in more detail in the individual UDL sections below. Where available, the 2016 National Land Cover Dataset (NLCD) for ConUs and AK and 2001 NLCD in PR was used to represent many non-agricultural label uses (see below). Where NLCD wasn’t available, the NOAA C-CAP and other dataset outlined below were used. Below is a sample of label classes that were represented using NLCD Developed or Open Space Developed land use categories. These different Developed classes are discussed in more detail below. Forest landcover categories from the NLCD or CCAP for forest label uses.

* Grain/cereal/flour bins
* Grain/cereal/flour elevators
* Household/domestic dwellings (perimeter outdoor only)
* Non-agricultural outdoor building structures
* Ornamental and/or shade trees
* Ornamental herbaceous plants
* Ornamental non-flowering plants
* Ornamental woody shrubs and vines
* Refuse/solid waste containers (outdoors)
* Refuse/solid waste sites (outdoors)
* Commercial/Institution-Al/ Industrial Premises/ Equip. (Indoor and Outdoor) – Broadcast, Crack and Crevice/Void
* Domestic Dwellings Outdoor Premises;
* Food Processing Plant Premises (Nonfood Contact) – Crack and Crevice
* Nonagricultural Outdoor Buildings/Structures
* Poultry Litter (Poultry houses)
* Recreational Areas
* Sewer Manhole Covers and Walls
* Utilities – Broadcast
* Wood Protection Treatment to Buildings/Products Outdoor

### ****Developed****

Developed land cover is used to spatially represent certain non-agricultural label uses and includes areas with a mixture of constructed materials and vegetation, where impervious surfaces account for 20% to 100 % percent of total cover. These areas most commonly include single-family housing units, apartment complexes, row houses and commercial/industrial.

* + **ConUS**
		- NLCD 2016 class 22-24
	+ **Alaska**
		- NLCD 2016 class 22-24
	+ **Hawaii**
		- CCAP 2011 class 2-4
	+ **Puerto Rico**
		- NLCD 2001 class 22-24
	+ **Guam**
		- CCAP 2011 class 2
	+ **Marianas**
		- CCAP 2004 class 2
	+ **American Samoa**
		- CCAP 2010 class 2
	+ **Virgin Islands**
		- CCAP 2012 class 2

### Open Space Developed

Open Space Developed (OSD) is used to spatially represent certain non-agricultural label uses and includes areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20% of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes.

* + **ConUS**
		- NLCD 2016 class 21
	+ **Alaska**
		- NLCD 2016 class 21
	+ **Hawaii**
		- CCAP 2011 class 5
	+ **Puerto Rico**
		- NLCD 2016 class 21
	+ **Guam**
		- CCAP 2011 class 5
	+ **Marianas**
		- CCAP 2004 class 5
	+ **American Samoa**
		- CCAP 2010 class 5
	+ **Virgin Islands**
		- CCAP 2012 class 5

### Christmas Trees

* Cropland Data Layer (CDL) class 70, Christmas Trees, are used for ConUS. These are not characterized anywhere else.
	+ **ConUS**
		- Cropland Data Layer (CDL) class 70, Christmas Trees
	+ **Alaska**
		- No Christmas Tree land cover data is available
	+ **Hawaii**
		- No Christmas Tree land cover data is available
	+ **Puerto Rico**
		- No Christmas Tree land cover data is available
	+ **Guam**
		- No Christmas Tree land cover data is available
	+ **Marianas**
		- No Christmas Tree land cover data is available
	+ **American Samoa**
		- No Christmas Tree land cover data is available
	+ **Virgin Islands**
		- No Christmas Tree land cover data is available

### Field Nurseries

* Non-agricultural Nurseries represent a land use that is not exclusive to any nationwide land cover class. Nurseries are mapped by using geocoded Dun and Bradstreet (D&B) business database addresses. Label uses that are covered by this UDL found on ornamentals, shrubs/vines, and non-food trees, grown in a non-agricultural setting (*e.g.* Retail Nurseries, Garden supply stores, retail greenhouse, retail shade house or retail horticultural location. This information is combined with the UDLs for Other Orchard and Citrus in ConUS to represented by agricultural nursery uses such as trees grown for food, tree plantations or transplanted trees, shrubs, and ornamentals.
	+ **ConUS**
		- Using the Dun and Bradstreet business database, select all records with any SIC Codes starting with “018” (Horticultural Specialties) or “526” (Retail Nurseries, Lawn and Garden Supply Stores)
		- Selected points are then buffered by their facility size attribute. Where facility size is absent, substitute the Census of Agriculture’s average acreage by county, calculated using Nursery Totals. If a county’s nursery acreages are undisclosed, then an average of all county averages is used. A circular buffer is applied, where radius is solved for using the areas previously described. In an effort to map production facilities only and not business offices, use the ‘Location Type’ attribute to categorize locations.
		- Use Data Layer for Other Orchard and Citrus (CDL 2013-2017)
	+ **Alaska**
		- Dun and Bradstreet business database was used in the same method as applied to ConUS.
	+ **Hawaii**
		- Dun and Bradstreet business database was used in the same method as applied to ConUS.
	+ **Puerto Rico**
		- Dun and Bradstreet business database was used in the same method as applied to ConUS.
	+ **Guam**
		- No Dun and Bradstreet business data were available for Guam.
	+ **Marianas**
		- No Dun and Bradstreet business data were available for Marianas.
	+ **American Samoa**
		- No Dun and Bradstreet business data were available for American Samoa.
	+ **Virgin Islands**
		- Dun and Bradstreet business database was used in the same method as applied to ConUS.

### Managed Forests

* Forested areas managed for timber extraction, forest tree plantations (excluding Christmas Trees). There is also a stand-alone Christmas Tree UDL, and a combined Forestry UDL which includes the Managed Forest and Christmas Tree UDLs, see above.
	+ **Alaska**
		- Include either of the following USGS GAP Protected Areas Database classes where NLCD indicates "Forest" (41-43); "3 - managed for multiple uses - subject to extractive (*e.g*., mining or logging) or OHV use" and "4 - no known mandate for protection"
		- Include any of the following USGS GAP Public Model Ready Events; "Thinning", "Other Mechanical", "Clearcut", "Harvest", or "Reforestation"
		- AK LandFire EVT and GAP land cover do not have classes indicative of forest management
	+ **Hawaii**
		- Include the following LandFire EVT class; “Hawai'i Managed Tree Plantation”
		- Include either of the following USGS GAP Protected Areas Database classes where CCAP indicates "Forest" (9-11); "3 - managed for multiple uses - subject to extractive (*e.g*., mining or logging) or OHV use" and "4 - no known mandate for protection"
		- HI GAP land cover and USGS GAP Public Model Ready Events for HI do not have classes indicative of forest management
	+ **Puerto Rico**
		- Include the following GAP land cover classes; “Abandoned dry forest plantation”, “Woody agriculture and plantations: Palm plantations”
		- Include either of the following USGS GAP Protected Areas Database classes where CCAP indicates "Forest" (9-11); "3 - managed for multiple uses - subject to extractive (*e.g.*, mining or logging) or OHV use" and "4 - no known mandate for protection"
		- PR LandFire EVT is not available
	+ **Guam**
		- Include either of the following USGS GAP Protected Areas Database classes where CCAP indicates "Forest" (9-11); "3 - managed for multiple uses - subject to extractive (*e.g*., mining or logging) or OHV use" and "4 - no known mandate for protection"
		- LandFire EVT, GAP land cover, and USGS GAP Public Model Ready Events are not available for Guam
	+ **Marianas**
		- Include either of the following USGS GAP Protected Areas Database classes where CCAP indicates "Forest" (9-11); "3 - managed for multiple uses - subject to extractive (*e.g*., mining or logging) or OHV use" and "4 - no known mandate for protection"
		- LandFire EVT, GAP land cover, and USGS GAP Public Model Ready Events are not available for the Marianas
	+ **American Samoa**
		- LandFire EVT, GAP land cover, and USGS GAP Public Model Ready Events are not available for the Marianas
		- USGS GAP Protected Areas Database does not indicate areas indicative of forest management
	+ **Virgin Islands**
		- Include either of the following USGS GAP Protected Areas Database classes where CCAP indicates "Forest" (9-11); "3 - managed for multiple uses - subject to extractive (*e.g*., mining or logging) or OHV use" and "4 - no known mandate for protection"
		- LandFire EVT, GAP land cover, and USGS GAP Public Model Ready Events are not available for the Marianas

### Nurseries

* Non-agricultural Nurseries represent a land use that is not exclusive to any nationwide land cover class. Nurseries are mapped by using geocoded Dun and Bradstreet (D&B) business database addresses. Label uses that are covered by this UDL found on ornamentals, shrubs/vines, and non-food trees, grown in a non-agricultural setting (*e.g.,* Retail Nurseries, Garden supply stores or retail horticultural location. This UDLs does not include label represented by agricultural nursery uses such as trees grown for food, tree plantations or transplanted trees, shrubs, and ornamentals. These agricultural nurseries are captured in the agricultural UDLs described above.
	+ **Alaska**
		- Dun and Bradstreet business database was used in the same method as applied to ConUS.
	+ **Hawaii**
		- Dun and Bradstreet business database was used in the same method as applied to ConUS.
	+ **Puerto Rico**
		- Dun and Bradstreet business database was used in the same method as applied to ConUS.
	+ **Guam**
		- No Dun and Bradstreet business data were available for Guam.
	+ **Marianas**
		- No Dun and Bradstreet business data were available for Marianas.
	+ **American Samoa**
		- No Dun and Bradstreet business data were available for American Samoa.
	+ **Virgin Islands**
		- Dun and Bradstreet business database was used in the same method as applied to ConUS.

### Poultry litter

* Poultry litter assumed to be applied to the corn, soybeans, other grains, cotton, wheat, rice, other row crops, vegetables and ground fruit and alfalfa use data layers (UDLs). These UDLs were identified based on the 24 crops reported in Kellog *et al.* (2000) for manure/litter application. Kellog *et al*. (2000) identified these sites for manure/litter applications based on the assimilative capacity (or land application capacity).
* The spatial footprint was then made limited to the counties identified with potential poultry operations using the USDA National Agricultural Statistics Service (USDA-NASS). The USDA-NASS collects data on livestock and poultry production in the United States through its ongoing survey programs as well as through the Census of Agriculture conducted every five years. Both survey and census data can be accessed through the Quick Stats Database Tool (<https://quickstats.nass.usda.gov/>), this effort used the census data. This tool allows users to specify the geographic unit of extraction and table desired. Both operations with inventory (i.e. number of operations) and inventory (*i.e.*, number of animals) were used to identify poultry operation. The poultry inventory data only includes turkey, rooster, broiler and layer inventories. Whereas, poultry operations with inventory data includes total poultry operations. Therefore, while downloading data different filtering options were used in both conditions. The data with “withheld to avoid disclosing data for individual operations (data with D abbreviations )” was crosschecked with the “Operations with inventory” (# of operations) county data, and if the specific county has data, was “withheld to avoid disclosing data for individual operations (data with D abbreviations )” included to determine spatial footprint. Counties with no data probably contain developed area and have lesser chance to have poultry operations. But to be conservative and consistent with other agricultural use processing, these no data counties were also included to determine spatial footprint. These yield an entire national level poultry spatial footprint. Drift is not included with this UDL.
* **ConUS**
	+ The 8 UDLs that encompass 24 crops references Kellog (2000) were combined into one layer to identify the spatial footprint for litter application.
* **Alaska (AK)**
	+ NLCD 2016 Cultivated Class (82); inclusive of all agricultural crops.
* **Hawaii (HI)**
	+ CCAP 2011 Cultivated Class (6); inclusive of all agricultural crops.
* **Puerto Rico (PR)**
	+ NLCD 2001 Cultivated Class (82); inclusive of all agricultural crops.
* **Guam (GU)**
	+ CCAP 2011 Cultivated Class (6); inclusive of all agricultural crops.
* **Marianas (CNMI)**
	+ CCAP 2004 Cultivated Class (6); inclusive of all agricultural crops.
* **American Samoa (AS)**
	+ CCAP Cultivated Class (6) inclusive of all agricultural crops.
* **Virgin Islands (VI)**
	+ CCAP Cultivated Class (6) inclusive of all agricultural crops.

Table 1. Crosswalk of thiamethoxam agricultural uses across crop sources

| **Label Use(Source: label, DRA report and IR-4 Crop Group)** | **Crop Reported in SUUM** | **Census of Agriculture** | **ConUS UDL** | **NL48 UDL** | **Notes UDL** |
| --- | --- | --- | --- | --- | --- |
| Beet, Sugar | Sugar Beets | SUGARBEETS | CONUS\_Thia Other row crops ORWA |  | Has SLN. OR and WA |
| Radish | Radish | RADISHES | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Carrot | Carrots | CARROTS | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Beet, Garden | Beet, Garden | BEETS | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Arracacha | Other Root Vegetables (except sugar beets, and radishes) ; Other tuberous and corm vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Arrowroot | Other Root Vegetables (except sugar beets, and radishes) ; Other tuberous and corm vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Artichoke, Chinese | Other Root Vegetables (except sugar beets, and radishes) ; Other tuberous and corm vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Artichoke, Jerusalem | Other Root Vegetables (except sugar beets, and radishes) ; Other tuberous and corm vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Burdock, Edible | Other Root Vegetables (except sugar beets, and radishes) | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Canna, Edible | Other Root Vegetables (except sugar beets, and radishes) ; Other tuberous and corm vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Cassava, Bitter and Sweet | Other Root Vegetables (except sugar beets, and radishes) ; Other tuberous and corm vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Celeriac | Other Root Vegetables (except sugar beets, and radishes) | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Chayote (Root) | Other Root Vegetables (except sugar beets, and radishes) ; Other tuberous and corm vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Chufa | Other Root Vegetables (except sugar beets, and radishes) ; Other tuberous and corm vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Dasheen (Taro) | Other Root Vegetables (except sugar beets, and radishes) ; Other tuberous and corm vegetables | TARO | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Ginseng | Other Root Vegetables (except sugar beets, and radishes) | GINSENG | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Horseradish | Other Root Vegetables (except sugar beets, and radishes) | HORSERADISH | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Leren | Other Root Vegetables (except sugar beets, and radishes) ; Other tuberous and corm vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Parsley, Turnip-rooted | Other Root Vegetables (except sugar beets, and radishes) | PARSLEY | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Parsnip | Other Root Vegetables (except sugar beets, and radishes) | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Rutabaga | Other Root Vegetables (except sugar beets, and radishes) | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Salsify | Other Root Vegetables (except sugar beets, and radishes) | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Skirret | Other Root Vegetables (except sugar beets, and radishes) | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Tanier | Other Root Vegetables (except sugar beets, and radishes) ; Other tuberous and corm vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Yam Bean | Other Root Vegetables (except sugar beets, and radishes) ; Other tuberous and corm vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Yam, True | Other Root Vegetables (except sugar beets, and radishes) ; Other tuberous and corm vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Celeriac | Celeriac | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Chervil, Turnip | Chervil | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Chicory | Chicory | CHICORY | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Radish, Oriental (Daikon) | Daikon | DAIKON | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Ginger | Ginger | GINGER ROOT | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Kohlrabi | Kohlrabi | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Turnip | Turnip | TURNIPS | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Potatoes | Potatoes | POTATOES | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Sweet Potatoes | Sweet Potatoes | SWEET POTATOES | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Arugula | Arugula | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Celery | Celery | CELERY | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Cilantro | Cilantro | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Dandelion | Dandelion | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Endive | Endive | ESCAROLE & ENDIVE | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Fennel | Fennel | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Gai Lon (Broccoli, Chinese) | Gai Lon | BROCCOLI | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Lettuce | Lettuce | LETTUCE | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Mizuna | Mizuna | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Mustard | Mustard | GREENS, MUSTARD | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Mustard Greens | Mustard Greens | GREENS, MUSTARD | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Parsley | Parsley | PARSLEY | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Radicchio | Radicchio | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Rapini | Rapini | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Spinach | Spinach | SPINACH | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Swiss Chard | Swiss Chard | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Upland Cress | Upland Cress | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Watercress | Watercress | WATERCRESS | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Lettuce, Leaf | Other Leafy Vegetables | LETTUCE | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Lettuce, Bitter | Other Leafy Vegetables | LETTUCE | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Lettuce, Head | Other Leafy Vegetables | LETTUCE | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Cardoon | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Amaranth (Chinese, Leafy) | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Aster (Indian, Leafy) | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Blackjack | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Cat's Whiskers | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Cham-Chwi | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Cham-na-mul | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Chervil (Fresh Leaves) | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Chipilin | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Chrysanthemum | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Cilantro (Fresh Leaves) | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Corn Salad | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Cosmos | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Dang-gwi (Leaves) | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Dillweed | Other Leafy Vegetables | DILL, OIL | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Dock (Sorrel) | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Dol-nam-mul | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Ebolo | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Feather Cockscomb | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Flameflower | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Good King Henry | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Huauzontle | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Jute, Nalta | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Orach | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Plantain (Buckhorn) | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Primrose (English) | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Purslane (English, Garden, Winter) | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Violet (Chinese, Leaves) | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Arugula (Roquette) | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Cabbage (Abyssinian, Chinese, Bok Choy, Seakale) | Other Leafy Vegetables | CABBAGE, HEAD | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Collards | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Cress (Garden, Upland) | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Endive (Escarole) | Other Leafy Vegetables | ESCAROLE & ENDIVE | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Hanover Salad | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Maca (Leaves) | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Radish (Leaves) | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Rape Greens | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Rocket (Wild) | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Shepherd's Purse | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Turnip Greens | Other Leafy Vegetables | GREENS, TURNIP | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Celtuce | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Chervil | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Fennel (Florence) | Other Leafy Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Rhubarb | Other Leafy Vegetables | RHUBARB | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Bok Choy | Bok Choy | CABBAGE, CHINESE | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Broccoli | Broccoli | BROCCOLI | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Brussels sprouts | Brussels Sprouts | BRUSSELS SPROUTS | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Cabbage | Cabbage | CABBAGE, HEAD | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Cauliflower | Cauliflower | CAULIFLOWER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Collard Greens | Collard Greens | GREENS, COLLARD | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Kale | Kale | GREENS, KALE | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Cabbage, Chinese, Napa | Napa Cabbage | CABBAGE, HEAD | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Cabbage, Chinese, Mustard | Other Brassica Vegetables | CABBAGE, MUSTARD | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Cavalo Broccolo | Other Brassica Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Broccoli Raab | Other Brassica Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Mizuna | Other Brassica Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Mustard Spinach | Other Brassica Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Rape Greens | Other Brassica Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Soybeans | Soybeans | SOYBEANS | CONUS\_Soybeans | NL48\_Ag |  |
| Eggplant | Eggplant | EGGPLANT | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Bell Peppers | Peppers | PEPPERS, BELL | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Non-Bell Peppers (includes Chili, Cooking, Pimento, Sweet) | Peppers | PEPPERS, CHILE | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Tomatoes | Tomatoes | TOMATOES | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Tomatillo | Tomatillo | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Cocona | Other Fruiting Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Garden huckleberry | Other Fruiting Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Goji berry | Other Fruiting Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Groundcherry | Other Fruiting Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Naranjilla | Other Fruiting Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Sunberry | Other Fruiting Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Martynia | Other Fruiting Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Okra | Other Fruiting Vegetables | OKRA | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Pepino | Other Fruiting Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Roselle | Other Fruiting Vegetables | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Cantaloupes | Cantaloupes | MELONS, CANTALOUP | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Cucumbers | Cucumbers | CUCUMBERS | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Honeydew | Honeydew | MELONS, HONEYDEW | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Pumpkins | Pumpkins | PUMPKINS | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Squash | Squash | SQUASH | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Watermelons | Watermelons | MELONS, WATERMELON | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Melon, Citron | Other Cucurbits | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Melon | Other Cucurbits | MELONS, HONEYDEW | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Squash, Summer | Other Cucurbits | SQUASH | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Squash, Winter | Other Cucurbits | SQUASH | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Chayote, Fruit | Other Cucurbits | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Gherkin, West Indian | Other Cucurbits | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Gourd, Edible | Other Cucurbits | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Waxgourd, Chinese | Other Cucurbits | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Muskmelon (excl Honeydew Melon and Cataloupes) | Other Cucurbits | MELONS, CANTALOUP | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| MOMORDICA SPP | Other Cucurbits | VEGETABLES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Grapefruit | Grapefruit | GRAPEFRUIT | CONUS\_Citrus | NL48\_Ag |  |
| Kumquat | Kumquat | KUMQUATS | CONUS\_Citrus | NL48\_Ag |  |
| Lemon | Lemon | LEMONS | CONUS\_Citrus | NL48\_Ag |  |
| Lime | Lime | LIMES | CONUS\_Citrus | NL48\_Ag |  |
| Orange | Orange | ORANGES | CONUS\_Citrus | NL48\_Ag |  |
| PUMMELO | Pomelo | CITRUS, OTHER | CONUS\_Citrus | NL48\_Ag |  |
| TANGERINE (MANDARIN) | Tangerine | TANGERINES | CONUS\_Citrus | NL48\_Ag |  |
| Tangelo | Tangelo | TANGERINES | CONUS\_Citrus | NL48\_Ag |  |
| Quince | Quince | NON-CITRUS, OTHER, (EXCL BERRIES) | CONUS\_Other orchards | NL48\_Ag |  |
| Calamondin | Other Citrus | CITRUS, OTHER | CONUS\_Citrus | NL48\_Ag |  |
| Citron | Other Citrus | CITRUS, OTHER | CONUS\_Citrus | NL48\_Ag |  |
| Citrus Hybrids | Other Citrus | CITRUS, OTHER | CONUS\_Citrus | NL48\_Ag |  |
| Tangor | Other Citrus | CITRUS, OTHER | CONUS\_Citrus | NL48\_Ag |  |
| Apple | Apples | APPLES | CONUS\_Other orchards | NL48\_Ag |  |
| Pear | Pears | PEARS | CONUS\_Other orchards | NL48\_Ag |  |
| Pear, Oriental | Other Pome Fruit | PEARS | CONUS\_Other orchards | NL48\_Ag |  |
| Crabapple | Other Pome Fruit | NON-CITRUS, OTHER, (EXCL BERRIES) | CONUS\_Other orchards | NL48\_Ag |  |
| Loquat | Other Pome Fruit | NON-CITRUS, OTHER, (EXCL BERRIES) | CONUS\_Other orchards | NL48\_Ag |  |
| Mayhaw | Other Pome Fruit | NON-CITRUS, OTHER, (EXCL BERRIES) | CONUS\_Other orchards | NL48\_Ag |  |
| AZAROLE | Other Pome Fruit | NON-CITRUS, OTHER, (EXCL BERRIES) | CONUS\_Other orchards | NL48\_Ag |  |
| MEDLAR | Other Pome Fruit | NON-CITRUS, OTHER, (EXCL BERRIES) | CONUS\_Other orchards | NL48\_Ag |  |
| TEJOCOTE | Other Pome Fruit | NON-CITRUS, OTHER, (EXCL BERRIES) | CONUS\_Other orchards | NL48\_Ag |  |
| Apricot | Apricot | APRICOTS | CONUS\_Other orchards | NL48\_Ag |  |
| Cherries | Cherries | CHERRIES, SWEET; CHERRIES, TART | CONUS\_Other orchards | NL48\_Ag |  |
| Peaches | Peaches | PEACHES | CONUS\_Other orchards | NL48\_Ag |  |
| Plums/Prunes | Plums/Prunes | PLUMS & PRUNES | CONUS\_Other orchards | NL48\_Ag |  |
| Stone Fruit Group | Nectarine | NECTARINES | CONUS\_Other orchards | NL48\_Ag |  |
| Plumcot | Other Stone Fruit | PLUM-APRICOT HYBRIDS, INCL PLUMCOTS & PLUOTS | CONUS\_Other orchards | NL48\_Ag |  |
| Cherry (CULTIVARS, VARIETIES, ANDOR HYBRIDS OF THESE) | Other Stone Fruit | CHERRIES, SWEET; CHERRIES, TART | CONUS\_Other orchards | NL48\_Ag |  |
| CAPULIN | Other Stone Fruit | NON-CITRUS, OTHER, (EXCL BERRIES) | CONUS\_Other orchards | NL48\_Ag |  |
| CHERRY, BLACK | Other Stone Fruit | CHERRIES, SWEET; CHERRIES, TART | CONUS\_Other orchards | NL48\_Ag |  |
| CHERRY, NANKING | Other Stone Fruit | CHERRIES, SWEET; CHERRIES, TART | CONUS\_Other orchards | NL48\_Ag |  |
| JUJUBE, CHINESE | Other Stone Fruit | NON-CITRUS, OTHER, (EXCL BERRIES) | CONUS\_Other orchards | NL48\_Ag |  |
| SLOE | Other Stone Fruit | NON-CITRUS, OTHER, (EXCL BERRIES) | CONUS\_Other orchards | NL48\_Ag |  |
| Grape, Raisin | Grapes, Raisin | GRAPES | CONUS\_Grapes | NL48\_Ag |  |
| Grapes | Grapes, Table | GRAPES | CONUS\_Grapes | NL48\_Ag |  |
| Grape, Wine | Grapes, Wine | GRAPES | CONUS\_Grapes | NL48\_Ag |  |
| AMUR RIVER GRAPE | Other Vine Fruit | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| GOOSEBERRY | Other Vine Fruit | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Kiwifruit, fuzzy | Other Vine Fruit | KIWIFRUIT | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Kiwifruit, hardy | Other Vine Fruit | KIWIFRUIT | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Maypop | Other Vine Fruit | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| SCHISANDRA BERRY | Other Vine Fruit | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| BLUEBERRY, LOWBUSH | Blueberries | BLUEBERRIES, TAME; BLUEBERRIES, WILD | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Blueberry, highbush | Other bushberries | BLUEBERRIES, TAME; BLUEBERRIES, WILD | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Elderberry | Other bushberries | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Aronia berry | Other bushberries | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Buffalo currant | Other bushberries | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Chilean guava | Other bushberries | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Currant | Other bushberries | CURRANTS | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| European barberry | Other bushberries | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Highbush cranberry | Other bushberries | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Honeysuckle | Other bushberries | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Huckleberry | Other bushberries | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Jostaberry | Other bushberries | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Native currant | Other bushberries | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Sea buckthorn | Other bushberries | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Juneberry (Saskatoon berry) | Other bushberries | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Salal | Other bushberries | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Gooseberry | Other bushberries | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Cranberry | Other bushberries | CRANBERRIES | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Lingonberry | Other bushberries | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Strawberries | Strawberries | STRAWBERRIES | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Bearberry | Other low growing berries | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Bilberry | Other low growing berries | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Cloudberry | Other low growing berries | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Muntries | Other low growing berries | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Partridgeberry | Other low growing berries | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Lingonberry | Other low growing berries | BERRIES, OTHER | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Caneberries | Caneberries | RASPBERRIES; BLACKBERRIES, INCL DEWBERRIES & MARIONBERRIES | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Raspberry | Other caneberries | RASPBERRIES | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Wild raspberry | Other caneberries | RASPBERRIES | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Loganberry | Other caneberries | LOGANBERRIES | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Blackberry | Other caneberries | BLACKBERRIES, INCL DEWBERRIES & MARIONBERRIES; BOYSENBERRIES | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| bingleberry | Other caneberries | BLACKBERRIES, INCL DEWBERRIES & MARIONBERRIES; BOYSENBERRIES | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| boysenberry | Other caneberries | BLACKBERRIES, INCL DEWBERRIES & MARIONBERRIES; BOYSENBERRIES | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| dewberry | Other caneberries | BLACKBERRIES, INCL DEWBERRIES & MARIONBERRIES; BOYSENBERRIES | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| lowberry | Other caneberries | BLACKBERRIES, INCL DEWBERRIES & MARIONBERRIES; BOYSENBERRIES | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| marionberry | Other caneberries | BLACKBERRIES, INCL DEWBERRIES & MARIONBERRIES; BOYSENBERRIES | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| olallieberry | Other caneberries | BLACKBERRIES, INCL DEWBERRIES & MARIONBERRIES; BOYSENBERRIES | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| youngberry | Other caneberries | BLACKBERRIES, INCL DEWBERRIES & MARIONBERRIES; BOYSENBERRIES | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Raspberry (Red and Black) | Other caneberries | RASPBERRIES | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Cranberry | Cranberries | CRANBERRIES | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Pecans | Pecans | PECANS | CONUS\_Other orchards | NL48\_Ag |  |
| Pistachios | Pistachios | PISTACHIOS | CONUS\_Other orchards | NL48\_Ag |  |
| Walnuts | Walnuts | WALNUTS, ENGLISH | CONUS\_Other orchards | NL48\_Ag |  |
| Almonds | Almonds | ALMONDS | CONUS\_Other orchards | NL48\_Ag |  |
| HAZELNUTS | Filberts (Hazelnuts) | HAZELNUTS | CONUS\_Other orchards | NL48\_Ag |  |
| GUIANA CHESTNUT | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| JAPANESE HORSE-CHESTNUT | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Okari Nut | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Pachira Nut | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Sapucaia Nut | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Yellowhorn | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| African Nut Tree | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Beechnut | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Brazil Nut | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Brazilian Pine | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Bunya | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Bur Oak | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Butternut | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Cajoa | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Candlenut | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Cashew | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Chestnut | Other Tree Nuts | CHESTNUTS | CONUS\_Other orchards | NL48\_Ag |  |
| Chinquapin | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Coconut | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Coquito Nut | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Dika Nut | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Ginkgo | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Heartnut | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Hickory Nut | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Macadamia Nut | Other Tree Nuts | MACADAMIAS | CONUS\_Other orchards | NL48\_Ag |  |
| Mongongo Nut | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Monkey Pot | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Monkey Puzzle Nut | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Peach Palm Nut | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Pequi | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Pili Nut | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Pine Nut | Other Tree Nuts | TREE NUTS, OTHER | CONUS\_Other orchards | NL48\_Ag |  |
| Barley | Barley | BARLEY | CONUS\_Other grains | NL48\_Ag |  |
| Cotton | Cotton | COTTON | CONUS\_Cotton | NL48\_Ag |  |
| Avocado | Avocado | AVOCADOS | CONUS\_Other orchards | NL48\_Ag |  |
| Black Sapote | Tropical Fruit | PERSIMMONS | CONUS\_Other orchards | NL48\_Ag |  |
| Canistel | Tropical Fruit | PERSIMMONS | CONUS\_Other orchards | NL48\_Ag |  |
| Mamey Sapote | Tropical Fruit | PERSIMMONS | CONUS\_Other orchards | NL48\_Ag |  |
| MANGOES | Tropical Fruit | MANGOES | CONUS\_Other orchards | NL48\_Ag |  |
| Papaya | Tropical Fruit | PAPAYAS | CONUS\_Other orchards | NL48\_Ag |  |
| Sapodilla | Tropical Fruit | PERSIMMONS | CONUS\_Other orchards | NL48\_Ag |  |
| Star apple. | Tropical Fruit | PERSIMMONS | CONUS\_Other orchards | NL48\_Ag |  |
| Artichokes | Artichokes | ARTICHOKES | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Hops | Hops | HOPS | CONUS\_Other row crops | NL48\_Ag |  |
| Mint | Mint | MINT, OIL; MINT, TEA LEAVES | CONUS\_Vegetables and ground fruit | NL48\_Ag |  |
| Tobacco | Tobacco | TOBACCO | CONUS\_Other row crops | NL48\_Ag |  |

**Table 2. Crosswalk of thiamethoxam** **non-agricultural uses**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Label Use** | **Crop Reported in SUUM** | **ConUS UDL** | **NL48 UDL** | **Notes UDL** |
| Ornamentals | field nurseries | CONUS\_Field Nurseries | NL48\_Field Nurseries | NL48 Nursery layer will be used to create NL48 Field Nurseries |
| Ornamentals | christmas tree plantations | CONUS\_Xmas Trees | NL48\_Managed Forest | NL48 Managed Forest was used to create NL48 Christmas trees |
| Ornamentals | nonbearing fruit/nut trees | CONUS\_Other orchards | NL48\_Ag |  |
| Ornamentals | residential/commercial landscapes | CONUS\_Developed | NL48\_Developed |  |
| Turf | sod farms | CONUS\_Other Crops | NL48\_Ag |  |
| Turf | golf courses | CONUS\_Open Space Developed | NL48\_Open Space Developed |  |
| Turf | residential lawns | CONUS\_Developed | NL48\_Developed |  |
| Turf | athletic fields | CONUS\_Open Space Developed | NL48\_Open Space Developed |  |
| other spot/perimeter treatments | Livestock Pens and Poultry Houses | CONUS\_Poultry LitterCONUS\_Open Space Developed | NL48\_ Poultry Litter NL48\_Open Space Developed | NL48 Agriculture layer used to create NL48 Poultry Litter layer. |

1. References
* **Bonneville Power Administration Right of Way (BPA ROW)**
	+ Bonneville Power Administration GIS, 2015, <https://bpagis.maps.arcgis.com/home/>
* **Bureau of Land Management (BLM) Grazing Allotments**
	+ BLM GIS, National Grazing Allotment Boundaries, 20140112 <https://catalog.data.gov/dataset/blm-grazing-pasture-polygons>
* **Dun & Bradstreet (D&B)**
	+ Dun & Bradstreet, Agriculture, US, 2012, Dun & Bradstreet, SEGS, Short Hills, NJ, 2013/04/08, <http://igeo.epa.gov/data/Restricted/OEI/Agriculture/DunAndBradstreet_Agriculture.zip>
* **ESRI StreetMap North America Railroads**
	+ ESRI, StreetMap North America, Redlands, CA 20100531
	+ EPA Access ftp://cook.rtp.epa.gov/data/ESRI\_DATA\_AND\_MAPS/
* **Hawaii State Department of Agriculture and the Hawaii Statewide GIS Program**
	+ Agricultural Land Use Maps (ALUM), <http://planning.hawaii.gov/gis/download-gis-data/> , 20151104
	+ Update available at: <http://hdoa.hawaii.gov/salub/>
* **NAVTEQ Street Data**
	+ NAVTEQ 2013 Streets, Chicago, IL, 20131001
	+ EPA Access ftp://cook.rtp.epa.gov/data/NAVTEQ/2013/
* **National Land Cover Dataset (NLCD) 2016**
	+ Homer, C. G., Dewitz, J. A., Jin, S., Xian, G., Costello, C., Danielson, P., Gass, L., Funk, M., Wickham, J., Stehman, S., Auch, Roger F., Riitters, K. H. 2020. Conterminous United States land cover change patterns 2001–2016 from the 2016 National Land Cover Database: ISPRS Journal of Photogrammetry and Remote Sensing, v. 162, p. 184–199, at https://doi.org/10.1016/j.isprsjprs.2020.02.019
	+ Accessed at: <https://www.usgs.gov/centers/eros/science/national-land-cover-database?qt-science_center_objects=0#qt-science_center_objects>
* **National Land Cover Dataset (NLCD) 2001 – Purtero Rico only**
	+ Homer, C. G., Dewitz, J. A., Jin, S., Xian, G., Costello, C., Danielson, P., Gass, L., Funk, M., Wickham, J., Stehman, S., Auch, Roger F., Riitters, K. H. 2020. Conterminous United States land cover change patterns 2001–2016 from the 2016 National Land Cover Database: ISPRS Journal of Photogrammetry and Remote Sensing, v. 162, p. 184–199, at https://doi.org/10.1016/j.isprsjprs.2020.02.019
	+ Accessed at: https://www.usgs.gov/centers/eros/science/national-land-cover-database?qt-science\_center\_objects=0#qt-science\_center\_objects
* **National Oceanic and Atmospheric Administration (NOAA) Coastal Change Analysis Program (CCAP)**
	+ National Oceanic and Atmospheric Administration, Coastal Services Center. 1995-present. The Coastal Change Analysis Program (C-CAP) Regional Land Cover. Charleston, SC: NOAA Coastal Services Center. Accessed at <https://chs.coast.noaa.gov/htdata/raster1/landcover/bulkdownload/30m_lc/>**Puerto Rico Census of Agriculture**
	+ Junta de Planificación, Censo Agricola 2002 <http://gis.jp.pr.gov/mipr/> , 20151001
* **Poultry Litter**
	+ USDA National Agricultural Statistics Service (USDA-NASS) Quick Stats Database Tool Accessed at: <https://quickstats.nass.usda.gov/>
	+ Kellog, R. L., Lander, C. H., Moffitt, D. C., Gollehon, N. 2000. Manure Nutrients Relative to the Capacity of Cropland and Pastureland to Assimilate Nutrients; USDA Publication NPS 00-579: 2000 <https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_012133.pdf>
* **United States Census Bureau’s Topologically Integrated Geographic Encoding and Referencing database (TIGER)**
	+ 2015 TIGER/Line Shapefiles (machine readable data files) / prepared by the U.S. Census Bureau, 2015, <https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-geodatabase-file.html>
* **United States Department of Agriculture Cropland Data Layer (CDL)**
	+ United States Department of Agriculture (USDA), National Agricultural Statistics Service (NASS), Research and Development Division (RDD), Geospatial Information Branch (GIB), Spatial Analysis Research Section (SARS), Cropland Data Layer for the United States, <https://www.nass.usda.gov/Research_and_Science/Cropland/SARS1a.php>
* **United States Forest Service Administrative Boundaries**
	+ USDA Forest Service, Administrative Forest Boundaries, “S\_USA.AdministrativeForest”, 20151027, <http://data.fs.usda.gov/geodata/edw/datasets.php>
* **United States Forest Service Grazing Allotments**
	+ USFS Range Allotment Boundaries, NationalAllotmentFeatureClassAlbers, Rangeland Management Unit, 20140916
	+ Provided by Gene O'Donnell, USFS Geospatial Interface Account Manager, eodonnell02@fs.fed.us
* **United States Forest Service Slash Pine Presence**
	+ Ellenwood\_ James R.; Krist\_ Frank J.\_ Jr.; Romero\_ Sheryl A. 2015. National Individual Tree Species Atlas. FHTET-15–01. Fort Collins\_ Colorado: U.S. Department of Agriculture\_ Forest Service\_ Forest Health Technology Enterprise Team.
	+ <https://www.fs.fed.us/foresthealth/technology/pdfs/FHTET_15_01_National_Individual_Tree_Species_Atlas.pdf>
* **United States Geological Survey GAP Land Cover Data (USGS GAP)**
	+ US Geological Survey, Gap Analysis Program (GAP). May 2011. National Land Cover, Version 2
* **United States Geological Survey GAP Protected Areas Database (USGS GAP PAD-US)**
	+ US Geological Survey, Gap Analysis Program (GAP). November 2012. Protected Areas Database of the United States (PADUS), version 1.3 Combined Feature Class.
* **United States Geological Survey LandFire Existing Vegetation Type (USGS LandFire EVT)**
	+ LANDFIRE, 2012, Existing Vegetation Type Layer, LANDFIRE 1.3.0, U.S. Department of the Interior, Geological Survey. Accessed 15 July 2015 at <https://www.landfire.gov/version_comparison.php>
* **United States Geological Survey LandFire Public Events GeoDatabase (USGS LandFire Events)**
	+ LANDFIRE, 2012, Public Events GeoDatabase, LANDFIRE 1.3.0, U.S. Department of the Interior, Geological Survey. Accessed 15 July 2015 at <https://www.landfire.gov/version_comparison.php>
* **USDA Plant Hardiness Zones**
	+ United States Department of Agriculture. 2012. Plant hardiness zone map. Accessed on May 14, 2019 at <https://planthardiness.ars.usda.gov/PHZMWeb/>
1. Baker, N.T., and Capel, P.D., 2011, Environmental factors that influence the location of crop agriculture in the conterminous United States: U.S. Geological Survey Scientific Investigations Report 2011–5108, 72 p. [↑](#footnote-ref-2)
2. Amos, J.J., C.M. Holmes, C.G. Hoogeweg, and S.A. Kay. 2010. Development of Datasets to Meet USEPA Threatened and Endangered Species Proximity to Potential Use Sites Data Requirements. Report Number: 437.01-Overview. Prepared by Waterborne Environmental, Inc. for the Generic Endangered Species Task Force. [↑](#footnote-ref-3)