APPENDIX 1-3. Imidacloprid Scenario Development for Aquatic Modeling

The purpose of this Appendix is to provide supporting information for the aquatic modeling work.

Aquatic modeling for imidacloprid requires the following inputs for each of the use sites where the chemical is labeled for use:

(1) The use data layer (UDL): This was obtained from information provided in **APPENDIX 3-1**;

(2) The representative PWC scenario: This was determined based on the UDLs used in mapping;

(3) HUC2 regions where the chemical is expected to be used: These were determined based on the 2012 National Agricultural Statistics Service (NASS) Census Data indicated that a crop was grown in that region. It is noted that limited data were available with regards to Puerto Rico, Alaska, and Hawaii and some assumptions were made in those areas based on best available information. Most crops were assumed to be grown in these areas when information was not available; however, some crops were assumed not to be grown in HUC2 region 20 or HUC2 region 21;

(4) Application parameters: These were determined based on the label. PWC simulations were executed using maximum application rate, selected application date(s) and minimum application intervals. In selecting application dates for aquatic modeling, EPA considered label directions, such as treatment timing (e.g., pre-plant, during planting, application windows during the growing season, pre-harvest intervals and restrictions for pollinator protection.

(5) Chemical parameters based on the fate and transport properties of imidacloprid which is detailed in **Chapter 3.**

Modeled imidacloprid use patterns include soil, foliar, and seed treatment applications to agricultural crops, soil and foliar applications to non-agricultural sites. Depending on the use pattern, combined applications of seed treatment, soil and/or foliar are permitted. However, labels restrict the maximum rate that can be applied in single, multiple or combined rate per year. This maximum single or combined annual rate is 0.5 lb. a.i/acre/year (0.56 kg a.i/hac/year) for the majority of the crops with lower rates for only few crops. Lower rates are labeled for soybean (0.35 lb. a.i/year= 0.39 kg a.i/hac/year), perennial/post-harvest strawberry (0.38 lb. a.i/year= 0.43 kg a.i/hac/year), and cucurbit vegetables (0.40 lb. a.i/year= 0.45 kg a.i/hac/year).

**Tables 1 to 7** provide a listing of imidacloprid uses that were modeled in this BE, along with the maximum single application rate, number of applications, and retreatment interval. More information on the assumptions used in aquatic modeling and which HUC2 regions were modeled for each use pattern is available in **APPENDIX 3-2**. It is important to note that only soil and foliar combined applications were modeled although seed treatment can also be combined with soil and foliar applications. Previous modeling indicated that the highest exposure EECs were for foliar application followed by soil application with lowest exposure for seed treatment. Due to the fact that the maximum application rate for any combined application is restricted to 0.56, 0.45, 0.43 or 0.39 kg a.i/acre/year, modeling combined soil and foliar applications at that maximum rate is expected to yield higher exposure EECs from modeling combined soil, foliar and seed treatment at that same maximum rate. Furthermore, in some crops restricted maximum rates are labeled for soil and foliar applications preventing applications to be combined. For example, the maximum soil application rate for artichoke is 0.56 kg a.i/h ac/year and the maximum foliar rate is 0.56 kg a.i/hac/year. In this case, soil and foliar applications were modeled separately. Finally, when soil and foliar rates are combined the resultant rate may reach the maximum restricted rate or be higher than that rate. In modeling the first case, combined soil and foliar rates were used. However, in modeling the second case one of the rates was reduced so that the total rate does not exceed the maximum restricted rate. For example, soil rate for stone fruits is 0.43 kg a.i/hac/year and the foliar rate is 0.34 kg a.i/hac/year, a total of 0.77 kg a.i/hac/year which is higher than the maximum restricted rate of 0.56 kg a.i/hac/year. In this case, soil or foliar rates must be reduced so that the total rate is 0.56 kg a.i/hac/year. In order to arrive at conservative exposure estimates, EPA reduced the soil rate to 0.22 kg a.i/hac/year and modeling was executed for the combined rates of 0.22 kg a.i/hac/year for soil plus 0.34 kg a.i/hac/year for foliar. This is because the highest exposure is expected from foliar application compared to soil application. It is noted that combined rates used in this BE may not be typical for imidacloprid applications. The use of such combined applications by the farmer is expected to vary depending on many factors such as application cost, timing of pest pressure, available application equipment, and soil and weather conditions.

Table 1. Modeled Crops: Soil Application Only at Maximum Total Rate/Year (Rate is equal to the maximum yearly rate that can be applied)

| ***Crop/Use site*** | ***Specific crops included***  ***in this group*** | ***Use Data Layer (UDL)*** | ***PWC Scenario*** | ***HUC2's*** | ***Application Parameters*** | | | | ***Chemical Distribution3*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Timing for 1st Application*** | | ***Maximum Rate (Kg/ha)*** | ***Procedure2*** |
| ***From Label*** | ***Relative1*** |
| Bulb Vegetables | G-2: Garlic; Onions; Daylily; Fritillaria; Lily | Vegetables and ground fruit | VegetableESA | 1-20 | At Planting | -10 days | 0.56 | **In-furrow spray** directed on or below seed over Hulis | Uniform to a depth of 15 cm |
| G-1: Chives; Chives, Chinese; Leek; Shallot; Kurrat; Scallion | 1-8; 10-20 | At Planting | -10 days | 0.56 |
| Cucurbit Vegetables | Cantaloupe; Honeydew Melon; Bitter Melon; Citron Melon | Vegetables and ground fruit |  | 1-18; 20 | At Planting | -10 days | 0.45 | **In-furrow spray** directed on or below seed during bedding | Uniform to a depth of  3 cm |
| Cucumber; Chinese wax gourd; Gherkin, Gourd; Cuban pumpkin; Pumpkin; Squash; Watermelon | 1-20 | At Planting | -10 days | 0.45 |
| Leafy Petiole | G-1: Cardoon; Fennel; Celtuce; Chinese celery, Fresh leaves, and stalk only; Swiss chard | Vegetables and ground fruit |  | 1-21 | At Planting | -10 days | 0.43 | Uniform to a depth of  2 cm |
| Celery | 1-7; 9-10; 12-13; 15; 17-20 | At Planting | -10 days | 0.43 |
| Turnip greens | 1-8; 10-18; 20 | At Planting | -10 days | 0.43 |
| Rhubarb | 1-19 | At Planting | -10 days | 0.43 |
| ***1Relative:*** Relative to the scenario specified for the crop emergence date  ***2Procedure:*** Procedure used in applying the pesticide into the soil noting that more than one procedure is used and the procedure chosen here in the one that is ecpected to result in the highest exposure EECs  ***3Chemical Distribution:*** Input for the Application Tab of PWC which indicates expected chemical distribution in the soil profile following application | | | | | | | | | |

**Table 2. Modeled Crops: Foliar Application Only at Maximum Total Rate/Year** **(Rate is equal to the maximum yearly rate that can be applied)**

| ***Crop/Use site*** | ***Specific crops included***  ***in this group*** | ***Use Data Layer (UDL)*** | ***PWC Scenario*** | ***HUC2's*** | ***Application Parameters*** | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Timing for 1st Application1*** | | ***Maximum Rate (Kg/ha)2*** | ***Procedure and Chemical Distribution3*** |
| ***From Label*** | ***Absolute*** |
| Artichoke | Artichoke | Vegetables and ground fruit | VegetableESA | 15-16; 18; 20 | *After planting* up to 7 days of *Harvest* | 20-Feb | 0.14 x 4 @14 d | Broadcast above crop  and Aerial above crop  (Two separate runs) |
| Banana/Plantain | Banana/Plantain | Other orchards | OrchardESA | 3; 8; 12-13; 18; 20 | *Anytime* up to *Harvest* | 1-Mar | 0.11 x 5 @ 14 d | Airblast above crop |
| Bushberry | Blueberries | Vegetables and ground fruit | VegetableESA | 1-12; 14-19 | *After blooming* up to 3 days of *Harvest\** | 1-Jun | 0.11 x 5 @ 7 d | Airblast above crop |
| Currant | Vegetables and ground fruit | VegetableESA | 1-2; 4-5; 7; 9-11; 14; 16-18 |
| G-1: Elderberry; Gooseberry; Huckleberry; Juneberry; Lingonberry; Salal | Vegetables and ground fruit | VegetableESA | 1-19 |
| Citrus | Grapefruit | Citrus | CitrusESA | 3; 8; 11-13; 15-18; 20 | *Anytime* up to *Harvest\** | 15-Apr | 0.28 x 2 @ 10 d | Airblast above crop |
| Kumquat | 3; 8; 12; 15-16; 18; 20 |
| Lemon | 3; 8; 12-13; 15-16; 18 |
| Lime | 3; 12-13; 15-16; 18; 20 |
| Oranges | 3; 8; 11-13; 15-18; 20; 21 |
| Tangelo | 3; 12; 15-16; 18; 20 |
| Tangerines | 3; 8; 11-13; 15-16; 18; 20 |
| G-1: Calamondin; Citrus citron; Satsuma; Mandarin | 2-13; 15-18; 20 |
| Coffee | Coffee | Other orchards | OrchardESA | 21 | *Anytime* up to 7 days of *Harvest\** | 1-Mar | 0.11 x 5 @ 7 d | Airblast above crop |
| Pome Fruits | G-1: Apple; Crabapple; loquat; Mayhaw;  Quince | Other orchards | OrchardESA | 1-20 | *Anytime* up to 7 days of *Harvest\** | 1-Mar | 0.11 x 5 @ 10 d | Airblast above crop |
| G-2: Pear; Pear, Asian | Other orchards | OrchardESA | 1-20 | 0.28 x 2 @ 10 d | Airblast above crop |
| Soybean | Soybean | Soybeans | SoybeanESA | 1-14; 16-18; 20 | *Stages:* V2, R1 & R3 to 21 d. of *Harvest* | 15-Apr | 0.05 x 3 @ 7 d | Broadcast above crop  and Aerial above crop  (Two separate runs) |
| ***1 Timing for 1st Application:*** Application window specified in the label noting windows with “\*” indicate the presence of restrictions for pollinator protection; Absolute timing is the date chosen for the first application after considering label application window/restrictions  ***2Maximum Rate (Kg/ha):*** Maximum single rate in Kg/ha x Maximum number of applications @ Minimum application interval. For example, the Maximum application rate for Artichoke is 0.14 x 4 @14 d= a single application rate of 0.14 kg/hac applied 4 times at 14 days intervals  ***3Procedure and Chemical Distribution:*** The equipment used in application (ground broadcast, airblast and/or aerial) in addition to expected chemical distribution in the crop/soil profile following application; input for the Application Tab of PWC | | | | | | | | |

Table 3. Modeled Crops: Combined Applications at Maximum Total Rate/Year (Soil Plus Foliar, Both Ground Equipment)

| ***Crop/Use site*** | ***Specific crops included***  ***in this group*** | ***Use Data Layer (UDL)*** | ***PWC Scenario*** | ***HUC2's*** | ***Application Parameters*** | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Type*** | ***Timing for 1st Application1*** | | ***Maximum Rate (Kg/ha)2*** | ***Procedure and Chemical Distribution3*** |
| ***From Label*** | ***Absolute*** |
| Brassica Vegetables | Bok choy | Vegetables and ground fruit | VegetableESA | 1-8; 12-13; 15-18; 20 | Soil | **Soil:** *At planting* up to 14 days of *Harvest*  **Foliar:** *Anytime* up to 7 days of *Harvest* | **Soil:**  15-Jan  **Foliar:** 25-Feb | 0.30 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 5 @ 5 d | Broadcast above crop |
| G-2: Broccoli, Chinese (Gai lon); Kohlrabi; Mizuna; Rapini | 1-21 | Soil | 0.30 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 5 @ 5 d | Broadcast above crop |
| G-1: Broccoli; Cabbage; Cabbage, Chinese (napa); Cavalo Broccoli; Kale | 1-20 | Soil | 0.30 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 5 @ 5 d | Broadcast above crop |
| Brussel sprouts | 1-11; 13-19 | Soil | 0.30 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 5 @ 5 d | Broadcast above crop |
| Cauliflower | 1-19 | Soil | 0.30 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 5 @ 5 d | Broadcast above crop |
| Collards | 1-8; 10-15; 17-20 | Soil | 0.30 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 5 @ 5 d | Broadcast above crop |
| G-3: Mustard, Chinese (Gai choy); Mustard greens; Rape Greens; Rape Greens | 1-8; 10-18; 20 | Soil | 0.30 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 5 @ 5 d | Broadcast above crop |
| Caneberry | G-1: Blackberries; Dewberry; Marionberry | Vegetables and ground fruit | VegetableESA | 1-19 | Soil | **Soil:** *After blooming* up to 7 days of *Harvest\**  **Foliar:** *After blooming* up to 3 days of *Harvest* | **Soil:**  15-Mar  **Foliar:** 01-Jun | 0.22 x 1 | Broadcast incorporated |
| Foliar | 0.11 x 3 @ 7 d | Airblast above crop above crop |
| Boysenberry | 15-19 | Soil | 0.22 x 1 | Broadcast incorporated |
| Foliar | 0.11 x 3 @ 7 d | Airblast above crop |
| Loganberry | 3; 6; 10; 13; 15-18 | Soil | 0.22 x 1 | Broadcast incorporated |
| Foliar | 0.11 x 3 @ 7 d | Airblast above crop |
| Raspberries | 1-11; 13-19 | Soil | 0.22 x 1 | Broadcast incorporated |
| Foliar | 0.11 x 3 @ 7 d | Airblast above crop |
| Cotton | Cotton | Cotton | CottonESA | 2-3, 5-8; 10-13;15; 18 | Soil | At planting | 01-Mar | 0.21 x 1 | Broadcast incorporated |
| Foliar | *Anytime* up to 14 days of *Harvest* | 25-Jun | 0.07x 5 @ 7 d | Broadcast above crop |
| Fruiting Vegetables | G-3: Eggplant; Okra | Vegetables and ground fruit | VegetableESA | 1-18; 20 | Soil | **Soil:** *At planting* up to 21 days of *Harvest*  **Foliar:** *After planting* up to *Harvest* | **Soil:**  15-Mar  **Foliar:** 15-May | 0. 29 x 1 | Broadcast incorporated |
| Foliar | 0.09 x 3 @ 5 d | Broadcast above crop |
| G-1: Ground Cherry; Pepinos; Tomatillo | 1-21 | Soil | 0. 29 x 1 | Broadcast incorporated |
| Foliar | 0.09 x 3 @ 5 d | Broadcast above crop |
| G-2: Peppers; Tomato | 1-20 | Soil | 0. 29 x 1 | Broadcast incorporated |
| Foliar | 0.09 x 3 @ 5 d | Broadcast above crop |
| Grapes | Grapes, Raisin/Table/Wine | Grapes | GrapesESA | 1-20 | Soil | *Anytime* up to 30 days of *Harvest* | 21-Feb | 0.45 x 1 | Broadcast incorporated |
| Foliar | *Anytime* up to *Harvest* | 14-Apr | 0.06 x2 @ 14 d | Airblast above crop |
| Herbs & Spices | G-2: Angelica, Balm (lemon balm); Basil, Sweet; Borage; Bumet; Camomile; Catnip; Cilantro; Costmary; Curry (leaf); Horehound; Hyssop; Lavender; Lemongrass; Lovage (leaf); Marigold; Marjoram; Pennyroyal; Rosemary; Rue; Sage; Savory; Sweet Bay (bay leaf); Tarragon; tansy; Thyme; Wintergreen; Woodruff; Wormwood | Vegetables and ground fruit | VegetableESA | 1-8; 10-20 | Soil | **Soil:** *At planting* (bedding) up to 14 days of *Harvest*  **Foliar:** *After planting* to 7 days of *Harvest* | **Soil:**  15-Mar  **Foliar: 0**1-May | 0.42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Broadcast above crop |
| G-1: Chervil; Oregano | 1-21 | Soil | 0.42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Broadcast above crop |
| Chicory | 1-5; 7-8; 10-11; 15-18 | Soil | 0.42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Broadcast above crop |
| Dill | 2; 9-10; 17-18 | Soil | 0.42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Broadcast above crop |
| Mint | 2; 4-5; 7; 15-18; 20 | Soil | 0.42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Broadcast above crop |
| Parsley | 1-8; 10-18; 20 | Soil | 0.42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Broadcast above crop |
| Hops | Hops | Other row crops | OtherRowESA | 1-7; 10-11; 14-15; 17-18 | Soil | *Anytime* up to 60 days of *Harvest* | 25-Mar | 0.22 x 1 | Broadcast incorporated |
| Foliar | *Anytime* up to 28 days of *Harvest* | 14-Apr | 0.11 x 3 @ 21 d | Broadcast above crop |
| Leafy Green Vegetables | G-1: Amaranth, edible (Chinese spinach); Arugula; Chrysanthemum garland; Corn salad; Cress, Garden; Dandelion greens; Dock (sorrel); Orach; Purslane; Radicchio; Upland Cress | Vegetables and ground fruit | VegetableESA | 1-21 | Soil | **Soil:** *At planting* up to 21 days of *Harvest*  **Foliar:** *After planting* to 7 days of *Harvest* | **Soil:**  21-Feb  **Foliar:** 14-Mar | 0.30 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 5 @ 5 d | Broadcast above crop |
| Endive (escarole) | 1-5; 7; 10; 12-13; 17-18 | Soil | 0.30 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 5 @ 5 d | Broadcast above crop |
| Lettuce; Spinach | 1-20 | Soil | 0.30 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 5 @ 5 d | Broadcast above crop |
| Watercress | 1-7; 10; 12; 14-15; 18; 20 | Soil | 0.30 x 1 | Broadcast incorporated |
| Foliar |  | 0.05 x 5 @ 5 d | Broadcast above crop |
| Legume Vegetables | G-1: Beans (Snap, Bush, Pole, String); Peas (Fresh/Green/Sweet) | Vegetables and ground fruit | VegetableESA | 1-20 | Soil | **Soil:** *At planting* up to 21 days of *Harvest*  **Foliar:** *After planting* 7 days of *Harvest* | **Soil:**  01-Jun  **Foliar:** 21-Jun | 0. 42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 7 d | Broadcast above crop |
| Chickpea (garbanzo bean) | 1-21 | Soil | 0. 42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 7 d | Broadcast above crop |
| Dry Beans/Peas | 1-2; 4; 7; 9-18 | Soil | 0. 42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 7 d | Broadcast above crop |
| Lentil | 7; 9-10; 17 | Soil | 0. 42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 7 d | Broadcast above crop |
| Lima Bean | 1-8; 11-18; 20 | Soil | 0. 42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 7 d | Broadcast above crop |
| Peanuts | Peanuts | Other row crops | OtherRowESA | 2-3; 5-6; 8; 11-13; 18 | Soil | At Planting | 15-May | 0. 42 x 1 | Broadcast incorporated |
| Foliar | *Emergence* up to 14 days of *Harvest* | 14-Jun | 0.05 x 3 @ 5 d | Broadcast above crop |
| Pomegranate | Pomegranate | Other orchards | OrchardESA | 2-3; 5-6; 8; 10-18; 20 | Soil | *Anytime* up to 0 days of *Harvest* | 15-Jan | 0.22 x 1 | Broadcast incorporated |
| Foliar | *Anytime* up to 7 days of *Harvest\** | 24-Feb | 0.11 x 3 @ 7 d | Airblast above crop |
| Potato | Potato | Vegetables and ground fruit | VegetableESA | 1-20 | Soil | At Planting | 02-Feb | 0.34 x 1 | Broadcast incorporated |
| Foliar | *Emergence* up to 14 days of *Harvest* | 20-Mar | 0.06 x 4 @ 7 d | Broadcast above crop |
| Root Vegetables | G-1: Beet, garden; Carrots | Vegetables and ground fruit | VegetableESA | 1-20 | Soil | **Soil:** *At planting* up to 45 days of *Harvest*  **Foliar:** *After planting* up to 7 days of *Harvest* | **Soil:**  03-Oct  **Foliar:** 21-Dec | 0. 42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Broadcast above crop |
| G-2: Burdock (edible); Celeriac; Kava; Parsnip; Rutabaga; Salsify; Skirret; Yam | 1-21 | Soil | 0. 42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Broadcast above crop |
| Daikon | 3-7; 10; 12-13; 15; 18; 20 | Soil | 0. 42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Broadcast above crop |
| Ginseng | 1-7; 10; 17 | Soil | 0. 42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Broadcast above crop |
| Horseradish | 1-7; 9-11; 17-18 | Soil | 0. 42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Broadcast above crop |
| Radish | 1-20 | Soil | 0. 43 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 1 | Broadcast above crop |
| Turnip | 1-8; 10-20 | Soil | 0. 42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Broadcast above crop |
| Stone Fruits | Apricot | Other orchards | OrchardESA | 1-18 | Soil | **Soil:** *Anytime* up to 21 days of *Harvest*  **Foliar:** *Anytime* up to *Harvest\** | **Soil:**  21-Feb  **Foliar:** 14-Apr | 0.22 x 1 | Broadcast incorporated |
| Foliar | 0.11 x 3 @ 7 d | Airblast above crop |
| G-1: Nectarine; Peach | 1-8; 10-18 | Soil | 0.22 x 1 | Broadcast incorporated |
| Foliar | 0.11 x 3 @ 7 d | Airblast above crop |
| Strawberry | Strawberry | Vegetables and ground fruit | VegetableESA | 1-19 | Soil | *During transplant* up to *Bud opening/bloom* | 21-Mar | 0.40 x 1 | Broadcast incorporated |
| Foliar | *After planting* up to 7 days of *Harvest\** | 28-Apr | 0.05 x 3 @ 5 d | Broadcast above crop |
| Tobacco | Tobacco | Other row crops | OtherRowESA | 1-8; 10-11 | Soil | At Transplant | 01-Apr | 0.25 X 1 | Broadcast below crop |
| Foliar | *Emergence* up to 14 days of *Harvest* | 15-May | 0.05 x 6 @ 7 d | Broadcast above crop |
| Tree nuts | Almond | Other Orchards | OrchardESA | 2-8; 10-18 | Soil | **Soil:** *Anytime* up to 7 days of *Harvest*  **Foliar:** *Anytime* up to 7 days of *Harvest\** | **Soil:**  15-Jan  **Foliar:** 31-Mar | 0.16 x 1 | Broadcast below crop |
| Foliar | 0.10 x 3 @ 6 d | Airblast above crop |
| G-1: Beechnut; Brazil Nut; Butter nut; Cashew; Chinquapin; Hickory Nut | 1-8; 10-20 | Soil | 0.16 x 1 | Broadcast below crop |
| Foliar | 0.10 x 3 @ 6 d | Airblast above crop |
| Chestnut | 1-8; 10-12; 14; 16-18; 20 | Soil | 0.16 x 1 | Broadcast below crop |
| Foliar | 0.10 x 3 @ 6 d | Airblast above crop |
| Hazelnut | 1-12; 14; 16-18 | Soil | 0.16 x 1 | Broadcast below crop |
| Foliar | 0.10 x 3 @ 6 d | Airblast above crop |
| Macadamia Nut | 15; 18; 20 | Soil | 0.16 x 1 | Broadcast below crop |
| Foliar | 0.10 x 3 @ 6 d | Airblast above crop |
| Pecan | 2-3; 5-8; 10-13; 15-16; 18 | Soil | 0.16 x 1 | Broadcast below crop |
| Foliar | 0.10 x 3 @ 6 d | Airblast above crop |
| Pistachio | 12-18 | Soil | 0.16 x 1 | Broadcast below crop |
| Foliar | 0.10 x 3 @ 6 d | Airblast above crop |
| Walnut | 1-5; 7; 10-18 | Soil | 0.16 x 1 | Broadcast below crop |
| Foliar | 0.10 x 3 @ 6 d | Airblast above crop |
| Tuberous and Corm | Arracacha; Arrowroot; Canna; Cassava; Chayote; Chufa; Leren | Vegetables and ground fruit | VegetableESA | 1-21 | Soil | **Soil:** *At planting* up to 125 days of *Harvest*  **Foliar:** *After planting* up to 7 days of *Harvest* | **Soil:**  15-May  **Foliar:** 01-Jun | 0.42 x 1 | Broadcast below crop |
| Foliar | 0.05 x 3 @ 5 d | Broadcast above crop |
| Dasheen (taro) | 20 | Soil | 0.42 x 1 | Broadcast below crop |
| Foliar | 0.05 x 3 @ 5 d | Broadcast above crop |
| Ginger | 1-2; 20 | Soil | 0.42 x 1 | Broadcast below crop |
| Foliar | 0.05 x 3 @ 5 d | Broadcast above crop |
| Sweet potato | 1-8; 10-13; 15-18; 20 | Soil | 0.42 x 1 | Broadcast below crop |
| Foliar | 0.05 x 3 @ 5 d | Broadcast above crop |
| ***1 Timing for 1st Application:*** Application window specified in the label noting windows with “\*” indicate the presence of restrictions for pollinator protection; 1st application date is absolute after considering label application window/restrictions  ***2Maximum Rate (Kg/ha):*** Maximum single rate in Kg/ha x Maximum number of applications @ Minimum application interval. For example, the Maximum application rate for Bok choy is 0.31 x 1= One soil application of 0.31 kg/ha and 0.05 x5 @5 d= a single application rate of 0.05 kg/hac applied 5 times at 5 days intervals  ***3Procedure and Chemical Distribution:*** The equipment used in application (ground broadcast, airblast and/or aerial) in addition to expected chemical distribution in the crop/soil profile following application; input for the Application Tab of PWC | | | | | | | | | |

**Table 4. Modeled Crops: Combined Applications at Maximum Total Rate/Year (Ground Equipment for Soil and Aerial Equipment for Foliar)**

| ***Crop/Use site*** | ***Specific crops included***  ***in this group*** | ***Use Data Layer (UDL)*** | ***PWC Scenario*** | ***HUC2's*** | ***Application Parameters*** | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Type*** | ***Timing for 1st Application1*** | | ***Maximum Rate (Kg/ha)2*** | ***Procedure and Chemical Distribution3*** |
| ***From Label*** | ***Absolute*** |
| Brassica Vegetables | Bok choy | Vegetables and ground fruit | VegetableESA | 1-8; 12-13; 15-18; 20 | Soil | **Soil:** *At planting* up to 14 days of *Harvest*  **Foliar:** *Anytime* up to 7 days of *Harvest* | **Soil:**  15-Jan  **Foliar:** 25-Feb | 0.30 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 5 @ 5 d | Aerial above crop |
| G-2: Broccoli, Chinese (Gai lon); Kohlrabi; Mizuna; Rapini | 1-21 | Soil | 0.30 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 5 @ 5 d | Aerial above crop |
| G-1: Broccoli; Cabbage; Cabbage, Chinese (napa); Cavalo Broccoli; Kale | 1-20 | Soil | 0.30 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 5 @ 5 d | Aerial above crop |
| Brussel sprouts | 1-11; 13-19 | Soil | 0.30 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 5 @ 5 d | Aerial above crop |
| Cauliflower | 1-19 | Soil | 0.30 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 5 @ 5 d | Aerial above crop |
| Collards | 1-8; 10-15; 17-20 | Soil | 0.30 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 5 @ 5 d | Aerial above crop |
| G-3: Mustard, Chinese (Gai choy); Mustard greens; Rape Greens; Rape Greens | 1-8; 10-18; 20 | Soil | 0.30 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 5 @ 5 d | Aerial above crop |
| Foliar | 0.11 x 3 @ 7 d | Airblast above crop |
| Cotton | Cotton | Cotton | CottonESA | 2-3, 5-8; 10-13;15; 18 | Soil | At planting | 01-Mar | 0.21 x 1 | Broadcast incorporated |
| Foliar | *Anytime* up to 14 days of *Harvest* | 25-Jun | 0.07x 5 @ 7 d | Aerial above crop |
| Fruiting Vegetables | G-3: Eggplant; Okra | Vegetables and ground fruit | VegetableESA | 1-18; 20 | Soil | **Soil:** *At planting* up to 21 days of *Harvest*  **Foliar:** *After planting* up to *Harvest* | **Soil:**  15-Mar  **Foliar:** 15-May | 0. 29 x 1 | Broadcast incorporated |
| Foliar | 0.09 x 3 @ 5 d | Aerial above crop |
| G-1: Ground Cherry; Pepinos; Tomatillo | 1-21 | Soil | 0. 29 x 1 | Broadcast incorporated |
| Foliar | 0.09 x 3 @ 5 d | Aerial above crop |
| G-2: Peppers; Tomato | 1-20 | Soil | 0. 29 x 1 | Broadcast incorporated |
| Foliar | 0.09 x 3 @ 5 d | Aerial above crop |
| Herbs & Spices | G-2: Angelica, Balm (lemon balm); Basil, Sweet; Borage; Bumet; Camomile; Catnip; Cilantro; Costmary; Curry (leaf); Horehound; Hyssop; Lavender; Lemongrass; Lovage (leaf); Marigold; Marjoram; Pennyroyal; Rosemary; Rue; Sage; Savory; Sweet Bay (bay leaf); Tarragon; tansy; Thyme; Wintergreen; Woodruff; Wormwood | Vegetables and ground fruit | VegetableESA | 1-8; 10-20 | Soil | **Soil:** *At planting* (bedding) up to 14 days of *Harvest*  **Foliar:** *After planting* to 7 days of *Harvest* | **Soil:**  15-Mar  **Foliar: 0**1-May | 0.42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Aerial above crop |
| G-1: Chervil; Oregano | 1-21 | Soil | 0.42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Aerial above crop |
| Chicory | 1-5; 7-8; 10-11; 15-18 | Soil | 0.42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Aerial above crop |
| Dill | 2; 9-10; 17-18 | Soil | 0.42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Aerial above crop |
| Mint | 2; 4-5; 7; 15-18; 20 | Soil | 0.42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Aerial above crop |
| Parsley | 1-8; 10-18; 20 | Soil | 0.42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Aerial above crop |
| Hops | Hops | Other row crops | OtherRowESA | 1-7; 10-11; 14-15; 17-18 | Soil | *Anytime* up to 60 days of *Harvest* | 25-Mar | 0.22 x 1 | Broadcast incorporated |
| Foliar | *Anytime* up to 28 days of *Harvest* | 14-Apr | 0.11 x 3 @ 21 d | Aerial above crop |
| Leafy Green Vegetables | G-1: Amaranth, edible (Chinese spinach); Arugula; Chrysanthemum garland; Corn salad; Cress, Garden; Dandelion greens; Dock (sorrel); Orach; Purslane; Radicchio; Upland Cress | Vegetables and ground fruit | VegetableESA | 1-21 | Soil | **Soil:** *At planting* up to 21 days of *Harvest*  **Foliar:** *After planting* to 7 days of *Harvest* | **Soil:**  21-Feb  **Foliar:** 14-Mar | 0.30 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 5 @ 5 d | Aerial above crop |
| Endive (escarole) | 1-5; 7; 10; 12-13; 17-18 | Soil | 0.30 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 5 @ 5 d | Aerial above crop |
| Lettuce; Spinach | 1-20 | Soil | 0.30 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 5 @ 5 d | Aerial above crop |
| Watercress | 1-7; 10; 12; 14-15; 18; 20 | Soil | 0.30 x 1 | Broadcast incorporated |
| Foliar |  | 0.05 x 5 @ 5 d | Aerial above crop |
| Legume Vegetables | G-1: Beans (Snap, Bush, Pole, String); Peas (Fresh/Green/Sweet) | Vegetables and ground fruit | VegetableESA | 1-20 | Soil | **Soil:** *At planting* up to 21 days of *Harvest*  **Foliar:** *After planting* 7 days of *Harvest* | **Soil:**  01-Jun  **Foliar:** 21-Jun | 0. 42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 7 d | Aerial above crop |
| Chickpea (garbanzo bean) | 1-21 | Soil | 0. 42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 7 d | Aerial above crop |
| Dry Beans/Peas | 1-2; 4; 7; 9-18 | Soil | 0. 42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 7 d | Aerial above crop |
| Lentil | 7; 9-10; 17 | Soil | 0. 42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 7 d | Aerial above crop |
| Lima Bean | 1-8; 11-18; 20 | Soil | 0. 42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 7 d | Aerial above crop |
| Peanuts | Peanuts | Other row crops | OtherRowESA | 2-3; 5-6; 8; 11-13; 18 | Soil | At Planting | 15-May | 0. 42 x 1 | Broadcast incorporated |
| Foliar | *Emergence* up to 14 days of *Harvest* | 14-Jun | 0.05 x 3 @ 5 d | Aerial above crop |
| Potato | Potato | Vegetables and ground fruit | VegetableESA | 1-20 | Soil | At Planting | 02-Feb | 0.34 x 1 | Broadcast incorporated |
| Foliar | *Emergence* up to 14 days of *Harvest* | 20-Mar | 0.06 x 4 @ 7 d | Aerial above crop |
| Root Vegetables | G-1: Beet, garden; Carrots | Vegetables and ground fruit | VegetableESA | 1-20 | Soil | **Soil:** *At planting* up to 45 days of *Harvest*  **Foliar:** *After planting* up to 7 days of *Harvest* | **Soil:**  03-Oct  **Foliar:** 21-Dec | 0. 42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Aerial above crop |
| G-2: Burdock (edible); Celeriac; Kava; Parsnip; Rutabaga; Salsify; Skirret; Yam | 1-21 | Soil | 0. 42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Aerial above crop |
| Daikon | 3-7; 10; 12-13; 15; 18; 20 | Soil | 0. 42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Aerial above crop |
| Ginseng | 1-7; 10; 17 | Soil | 0. 42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Aerial above crop |
| Horseradish | 1-7; 9-11; 17-18 | Soil | 0. 42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Aerial above crop |
| Radish | 1-20 | Soil | 0. 43 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 1 | Aerial above crop |
| Turnip | 1-8; 10-20 | Soil | 0. 42 x 1 | Broadcast incorporated |
| Foliar | 0.05 x 3 @ 5 d | Aerial above crop |
| Strawberry | Strawberry | Vegetables and ground fruit | VegetableESA | 1-19 | Soil | *During transplant* up to *Bud opening/bloom* | 21-Mar | 0.40 x 1 | Broadcast incorporated |
| Foliar | *After planting* up to 7 days of *Harvest\** | 28-Apr | 0.05 x 3 @ 5 d | Aerial above crop |
| Tobacco | Tobacco | Other row crops | OtherRowESA | 1-8; 10-11 | Soil | At Transplant | 01-Apr | 0.25 X 1 | Broadcast below crop |
| Foliar | *Emergence* up to 14 days of *Harvest* | 15-May | 0.05 x 6 @ 7 d | Aerial above crop |
| Foliar |  |  | 0.10 x 3 @ 6 d | Airblast above crop |
| Tuberous and Corm | Arracacha; Arrowroot; Canna; Cassava; Chayote; Chufa; Leren | Vegetables and ground fruit | VegetableESA | 1-21 | Soil | **Soil:** *At planting* up to 125 days of *Harvest*  **Foliar:** *After planting* up to 7 days of *Harvest* | **Soil:**  15-May  **Foliar:** 01-Jun | 0.42 x 1 | Broadcast below crop |
| Foliar | 0.05 x 3 @ 5 d | Aerial above crop |
| Dasheen (taro) | 20 | Soil | 0.42 x 1 | Broadcast below crop |
| Foliar | 0.05 x 3 @ 5 d | Aerial above crop |
| Ginger | 1-2; 20 | Soil | 0.42 x 1 | Broadcast below crop |
| Foliar | 0.05 x 3 @ 5 d | Aerial above crop |
| Sweet potato | 1-8; 10-13; 15-18; 20 | Soil | 0.42 x 1 | Broadcast below crop |
| Foliar | 0.05 x 3 @ 5 d | Aerial above crop |
| ***1 Timing for 1st Application:*** Application window specified in the label noting windows with “\*” indicate the presence of restrictions for pollinator protection; 1st application date is absolute after considering label application window/restrictions  ***2Maximum Rate (Kg/ha):*** Maximum single rate in Kg/ha x Maximum number of applications @ Minimum application interval. For example, the Maximum application rate for Bok choy is 0.31 x 1= One soil application of 0.31 kg/ha and 0.05 x5 @5 d= a single application rate of 0.05 kg/hac applied 5 times at 5 days intervals  ***3Procedure and Chemical Distribution:*** The equipment used in application (ground broadcast, airblast and/or aerial) in addition to expected chemical distribution in the crop/soil profile following application; input for the Application Tab of PWC | | | | | | | | | |

Table 5. Modeled Non-Agricultural Use: Foliar Ground Applications at Maximum Total Rate/Year

| ***Crop/Use site*** | ***Specific crops included***  ***in this group*** | ***Use Data Layer (UDL)*** | ***PWC Scenario*** | ***HUC2's*** | ***Application Parameters*** | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ***Timing for 1st Application1*** | ***Maximum Rate (Kg/ha)2*** | ***Procedure and Chemical Distribution3*** |
| Christmas trees | Christmas trees | Xmas Trees | XmasTreeESA | 1-18 | 15-Mar | 0.11 x 5 @ 7 d | Airblast above crop |
| Forestry | Cottonwood (for pulp/timber) | Managed Forest | OtherTreeESA | 1-21 | 1-Mar | 0.11 x 5 @ 10 d | Airblast above crop |
| Forestry | Poplar (for pulp/timber) | Managed Forest | OtherTreeESA | 1-21 | 1-Mar | 0.11 x 5 @ 10 d | Airblast above crop |
| Ornamentals | Ornamentals in Nurseries | Nurseries | NSLandcoverESA | 1-21 | 30-Mar | 0.45 x 1 | Ground Broadcast above crop |
| Turf | Sod turf | Other crops | OtherCropESA | 1-20 | 15-Mar | 0.56 x 1 | Ground Broadcast above crop |
| Turf | Golf turf | Open Space Developed | GolfESA | 1-21 | 15-Mar | 0.56 x 1 | Ground Broadcast above crop |
| Turf | All other turf | Developed | DevelopedOSESA | 1-21 | 15-Mar | 0.56 x 1 | Ground Broadcast above crop |
| Poultry Liter Min | Minimum use | Poultry Liter | CornESA | 1-18 | -10 d (relative) | 0.04 x 1 | Applied with liter |
| Poultry Liter Max | Maximum use | Poultry Liter | CornESA | 1-18 | -10 d (relative) | 0.54 x 1 | Applied with liter |
| Poultry Liter Min | Minimum use | Poultry Liter | VegetableESA | 19 | -10 d (relative) | 0.04 x 1 | Applied with liter |
| Poultry Liter Max | Maximum use | Poultry Liter | VegetableESA | 19 | -10 d (relative) | 0.54 x 1 | Applied with liter |
| Residential | Residential use (all) | Developed | ResidentialESA | 1-21 | 1-Apr | 0.29 x 1 | Aerial above crop |
| ***1 Timing for 1st Application:*** Absolute or relative to crop emergence timing for foliar applications which is the date chosen for the first application after considering label application window/restrictions  ***2Maximum Rate (Kg/ha):*** Maximum single rate in Kg/ha x Maximum number of applications @ Minimum application interval  ***3Procedure and Chemical Distribution:*** The equipment used in application (ground broadcast, airblast and/or aerial) in addition to expected chemical distribution in the crop/soil profile following application; input for the Application Tab of PWC | | | | | | | |

Table 6. Modeled Non-Agricultural Use: Foliar Aerial Applications at Maximum Total Rate/Year

| ***Crop/Use site*** | ***Specific crops included***  ***in this group*** | ***Use Data Layer (UDL)*** | ***PWC Scenario*** | ***HUC2's*** | ***Application Parameters*** | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ***Timing for 1st Application*** | ***Maximum Rate (Kg/ha)*** | ***Procedure and Chemical Distribution*** |
| Christmas trees | Christmas trees | Xmas Trees | XmasTreeESA | 1-18 | 15-Mar | 0.11 x 5 @ 7 d | Aerial above crop |
| Forestry | Cottonwood (for pulp/timber) | Managed Forest | OtherTreeESA | 1-21 | 1-Mar | 0.11 x 5 @ 10 d | Aerial above crop |
| Forestry | Poplar (for pulp/timber) | Managed Forest | OtherTreeESA | 1-21 | 1-Mar | 0.11 x 5 @ 10 d | Aerial above crop |
| Ornamentals | Ornamentals in Nurseries | Nurseries | NSLandcoverESA | 1-21 | 30-Mar | 0.45 x 1 | Aerial above crop |
| Turf | Sod turf | Other crops | OtherCropESA | 1-20 | 15-Mar | 0.56 x 1 | Aerial above crop |
| Turf | Golf turf | Open Space Developed | GolfESA | 1-21 | 15-Mar | 0.56 x 1 | Aerial above crop |
| Turf | All other turf | Developed | DevelopedOSESA | 1-21 | 15-Mar | 0.56 x 1 | Aerial above crop |
| ***1 Timing for 1st Application:*** Timing for foliar applications which is the date chosen for the first application after considering label application window/restrictions  ***2Maximum Rate (Kg/ha):*** Maximum single rate in Kg/ha x Maximum number of applications @ Minimum application interval  ***3Procedure and Chemical Distribution:*** The equipment used in application (ground broadcast, airblast and/or aerial) in addition to expected chemical distribution in the crop/soil profile following application; input for the Application Tab of PWC | | | | | | | |

Table 7. Seed Treatment: Modeled at Maximum Rate

| ***Crop/Use site*** | ***Use Data Layer (UDL)*** | ***PWC Scenario*** | ***HUC2's*** | ***Application Parameters*** | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ***Timing1*** | ***Maximum Rate (Kg/ha)2*** | ***Seed Planting Depth (cm)*** | ***Chemical Distribution3*** |
| Barley | OtherGrain | OtherGrainESA | 1-19 | -10 days | 0.15 | 2.54 | ∆ |
| Beans | Vegetables and ground fruit | VegetableESA | 1-20 | -10 days | 0.56 | 2.54 | ∆ |
| Borage | Vegetables and ground fruit | VegetableESA | 1-8; 10-20 | -10 days | 0.17 | 3.00 | ∆ |
| Broccoli | Vegetables and ground fruit | VegetableESA | 1-20 | -10 days | 0.21 | 0.64 | ∆ |
| Buckwheat | OtherGrain | OtherGrainESA | 1-5; 7; 9-11; 17-18 | -10 days | 0.02 | 2.54 | ∆ |
| Canola | OtherGrain | OtherGrainESA | 1-18 | -10 days | 0.09 | 1.20 | ∆ |
| Carrots | Vegetables and ground fruit | VegetableESA | 1-20 | -10 days | 0.03 | 0.64 | ∆ |
| Corn, field | Corn | CornESA | 1-18; 20-21 | -10 days | 0.13 | 3.81 | ∆ |
| Corn, Pop | Vegetables and ground fruit | VegetableESA | 1-8; 10-11; 13-18 | -10 days | 0.06 | 3.81 | ∆ |
| Corn, sweet | Vegetables and ground fruit | VegetableESA | 1-20 | -10 days | 0.09 | 3.81 | ∆ |
| Cotton | Cotton | CottonESA | 2-3; 5-8; 10-13; 15; 18 | -10 days | 0.11 | 1.27 | ∆ |
| Crambe | OtherGrain | OtherGrainESA | 1-5; 7; 9-11; 17-18 | -10 days | 0.22 | 2.54 | ∆ |
| Flax | OtherGrain | OtherGrainESA | 1-5; 7; 9-11; 16-18 | -10 days | 0.50 | 1.89 | ∆ |
| Leek | Vegetables and ground fruit | VegetableESA | 1-8; 10-20 | -10 days | 0.17 | 0.85 | ∆ |
| Millet | OtherGrain | OtherGrainESA | 2-5; 7; 9-18 | -10 days | 0.08 | 2.54 | ∆ |
| Mustard | Vegetables and ground fruit | VegetableESA | 1-8; 10-18; 20 | -10 days | 0.08 | 1.27 | ∆ |
| Oats | OtherGrain | OtherGrainESA | 1-19 | -10 days | 0.09 | 2.54 | ∆ |
| Onion | Vegetables and ground fruit | VegetableESA | 1-20 | -10 days | 0.17 | 1.27 | ∆ |
| Peanuts | OtherRow crops | OtherRowESA | 2-3; 5-6; 8; 11-13; 18 | -10 days | 0.16 | 3.81 | ∆ |
| Peas | Vegetables and ground fruit | VegetableESA | 1-20 | -10 days | 0.56 | 2.54 | ∆ |
| Potato | Vegetables and ground fruit | VegetableESA | 1-20 | -10 days | 0.35 | 7.62 | ∆ |
| Rye | OtherGrain | OtherGrainESA | 1-14; 16-18 | -10 days | 0.11 | 1.27 | ∆ |
| Safflower | OtherGrain | OtherGrainESA | 9-12; 14; 16-18 | -10 days | 0.20 | 2.54 | ∆ |
| Scallion | Vegetables and ground fruit | VegetableESA | 1-8; 10-21 | -10 days | 0.17 | 0.64 | ∆ |
| Sorghum | OtherGrain | OtherGrainESA | 1-18; 20 | -10 days | 0.03 | 2.54 | ∆ |
| Soybean | Soybeans | SoybeanESA | 1-14; 16-18; 20 | -10 days | 0.23 | 2.54 | ∆ |
| Sugarbeets | OtherRow crops | OtherRowESA | 1-2; 4-5; 7; 9-11; 14-18 | -10 days | 0.33 | 1.27 | ∆ |
| Sunflower | OtherRow crops | OtherRowESA | 1-14; 17-18; 20 | -10 days | 0.02 | 2.54 | ∆ |
| Switch Grass | Grassland | GrasslandESA | 2-9; 11; 18 | -10 days | 0.003 | 0.64 | ∆ |
| Teosinte | OtherGrain | OtherGrainESA | 1-18; 20 | -10 days | 0.002 | 0.64 | ∆ |
| Triticale | OtherGrain | OtherGrainESA | 1-7; 9-18 | -10 days | 0.11 | 1.27 | ∆ |
| Wheat | Wheat | WheatESA | 1-19 | -10 days | 0.20 | 2.54 | ∆ |
| ***1 Timing:*** Timing of application relative to crop emergence  ***2Maximum Rate (Kg/ha):*** Maximum Application rate in Kg/ha calculated from the maximum rate used for seed treatment and the maximum seeding rate for the crop.  ***3Chemical Distribution:*** Expected chemical distribution in the soil profile resulting from placing the seeds at the appropriate depth for the crop; input for the Application Tab of PWC | | | | | | | |