# **Appendix A. Question Bank**

The following two tables (Table A-1 and Table A-2) encompass questions intended for this information collection. Questions from Table A-1 are demographic in nature and will be included on all information collections; questions in Table A-2 will vary across collections, depending on information needs. Response options cannot be identified prior to collection as they will vary for reasons such as differing cropping situations and pesticide types. No more than ten questions from Table A-2 will be included on any given information collection. All proposed questions will be supplied to OIRA prior to an information collection for their review.

Given unique production needs of different use sites, bracketed terms are used in the question bank to allow for flexibility in question design while still offering a structured bank from which questions may potentially be asked. The following provides an overview of these bracketed terms.

**Explanation of Bracketed Terms Used in Question Banks**

Treatment: The pesticide active ingredient of interest (might rarely include a biological, biochemical, non-microbial, or behavioral-altering based material, such as pheromone mating disruption in some cases, hence a broad term)

Alternative option(s), Alternative(s): Same as ‘treatment,’ but generally couched in a question about what producers would use in the absence of the treatment under consideration for mitigation.

Number of applications or Specific number of applications: the number of times a treatment is applied usually during a specified time period such as a crop season or year.

Agricultural System(s): In general, this will mostly be an indicator of the crop of interest. But because use patterns can entail non-crop or other outdoor agricultural sites, the ‘agricultural system’ designation allows for broader flexibility to address EPA questions about non-typical use sites. Some examples of non-crop agricultural systems could include:

* Greenhouses or other non-outdoor systems: examples include hoop houses, slat houses, greenhouses, shade houses, high tunnels, hydroponic arrays, etc.
* Fields or other agricultural units (plots, strips, grids)
* ‘Horticultural-related area’ most often associated with ornamental production systems, for example outdoor arrays of pots that are treated by ground or chemigation
* Livestock feeding and/or housing premises, or other outdoor agricultural structures
* Aquaculture ponds or lakes
* Indoor growth media, including hydroponic systems and/or growth chambers
* Turf/golf courses
* Forests, tree nurseries, and tree plantations

Pest: Generally this will be a species that is targeted by a pesticide treatment, and can include weeds, parasitic plants, fungi, insects, vertebrates, nematodes, bacteria, viruses, or other micro-organisms. A pest is a species of organism that negatively impacts the goals of agricultural producers via direct or indirect damage, quality impacts, competition, contamination, etc.

* Periodic/invasive pests of concern: a more limited suite of pests often associated with sporadic occurrence or unexpected infestation of pests not normally found in a given location.
* Pest 1, Pest 2, etc.: used when there is a need for a question to contrast two or more pest species.
* Target pest pressures: This term is generally used to discuss the severity of a pest infestation or potential pest infestation. High pest pressure means that the need for pest management intervention is severe, while low pressure generally means that the situation is less acute, with the relative differences depending on the economic impact of the infestation or potential infestation.

Use site/specific use site: Similar and sometimes synonymous with agricultural system, but open-ended enough to include other use patterns that might not be directly related to agriculture. For example, if a termite bait is used to treat an infestation of a barn, the structure and perimeter would be a ‘use site.’

Agricultural Practice/Task: This can refer to a broad variety of agricultural tasks that are not directly related to a pesticide application, but can be *impacted* by the requirements around a pesticide application. Some broad examples of agricultural practices include tilling land, moving irrigation pipe, training vines, pruning trees, scouting fields, harvesting fruits or vegetables, hand-thinning fruit, de-flowering crops, etc. There are often restrictions on pesticide usage (for example, do not conduct x task within 48 hours of application) that can impact farm operations by limiting the ability to conduct other necessary agricultural practices, and this question allows us to ask those sorts of specific questions that relate to impacts of pesticide mitigation.

User(s): Anyone making use of a treatment, including applicators, mixers/loaders, handlers, etc. Essentially anyone who would make use of a pesticide label. Sometimes, we would want to ask questions specific to only one group, other times the questions may be more general to ‘all uses’ of a given treatment.

Rotated and/or tank mixed: These are common practices by users to manage pest resistance (similar to how drug resistance is managed in medicine by either rotating or combining active ingredients of different modes of action). These are typically in questions specific to resistance management practices.

Application method(s)/Particular application method(s): This includes a long list of varied ways treatments are applied to crops or agricultural system. Some examples include ground broadcast sprays, aerial sprays, chemigation, granular applications to soil, granular incorporation in the furrow, side dressing of crops, banding, ultra-low-volume fogging, individual plant dips/drenches, trunk/vine drenches, spot treatments, etc. This could also refer to specific types of application equipment or mixing/loading/delivery equipment such as SmartBox technology, lock and load systems, closed mixing/loading systems, etc.

Alternative application method(s): Same as above but couched as an alternative, similar to how ‘treatment vs. alternative treatment’ would be used. It would generally be couched in a question about what producers would use in the absence of some application method under consideration for mitigation

Application equipment/Technology: Related to specific apparatus for delivery of treatment, and can be couched in either general or specific terms. This encompasses a wide variety of available technology. While some terms overlap with ‘application methods,’ the questions are generally going to be about specific technological questions. Some examples include airblast sprayers, mechanically pressurized hand wands, backpack sprayers, sprayers with laser technology, groundboom rigs, aerial rigs, etc.

Spraying practice: Related more to methodology, this refers to a long list of potential parameters around how treatments are applied. Some examples include the release height for spray or chemigation applications, the air-speed of an airblast sprayer, the ground speed of an application rig, or the use of some crop specific method to deliver treatments such as alternate-row-middle spraying, strip spraying, altered spray volume per acre as just some examples.

Specific location in a production area: Wide variety of possibilities, as EPA often needs specific information on where a particular use is located. Some examples include field margin treatments, spot treatments, livestock house treatments around specific areas or apparatus, targeted spraying of particular production units, etc.

Variable that prohibits application: These most often apply to outdoor applications and include weather variables such as wind speeds, temperatures, precipitation (or lack of precipitation), atmospheric temperature inversions, or some combination of those. Non-weather variables can include things like soil type, topography, crop stage, presence of a non-target species, physical/agronomic obstacles, field setup, or other conditions/events we don’t know about and are querying growers to describe.

Specific pest management program: Describes a variety of approaches to applying treatments to manage target pests. Some examples include a preventative program, avoidance program, monitoring program, suppression program, integrated program, a threshold-based program, a reactive program, a curative program, or others.

Time/Particular Time/Unit of Time/Time Period: Day, week, month, year, season, etc. are the most common examples. Any designation that limits the scope of a particular question based upon when a treatment would be applied, etc.

Crop Stage/Crop or Growth stage term: Refers to a timing based upon a developmental point in the life of a crop. Some examples include emergence, tillering, leaf development, bud break, pre-bloom, bloom, post-bloom, vegetative stages (in agronomic crops, terms like V-1, V-2, V-3, etc.), reproductive stages (in agronomic crops, terms like R-1, R-2, R-3, etc.), pre-harvest, at-harvest, post-harvest, etc. These terms and delineations vary widely by crop.

Droplet size(s): For spray applications, the size of the spray particle can be a point of interest for both applicators and regulators. These can sometimes be defined by the average diameter of spray particles, or by terms such as ultra-fine, super-fine, fine, medium, coarse, ultra-coarse, etc.

Certain formulations: Refers to the formulation of a pesticide being used and can include myriad terms. The term formulation means a pesticide preparation supplied by the manufacturer for practical use and includes the active ingredient and inert ingredients which are included to provide a product in a form that is convenient to handle and can be mixed with water and applied accurately and safely. Some examples include liquids, emuslifiable concentrates, soluble concentrates, flowables, dry flowables, granulars, wettable powders, soluble powders, fumigants, etc.

Unit of measure: Generally used here to refer to field level or crop production area parameters such as acres, hectares, square meters, square feet, or volumetric measures for an indoor space treatment, such as cubic feet, cubic meters, etc.

Delineated Geographic Regions/Areas: Most commonly States, Counties, crop reporting districts (CRDs), regions, watersheds, or other political or physically bounded areas, etc.

Rate measurement unit/Specified application rate: Referring to the rate at which a treatment is applied, and most commonly expressed in units such as grams per acre, pounds per acre, ounces per acre, fluid ounces per acre, (or hectare, or other area unit as described above).

Impact: Generally associated with pesticide restrictions or proposed mitigations, these are the consequences to users that are of interest. Some common examples include: chemical costs, labor costs, convenience, yield, processing quality, nutritional quality, market quality, need for additional field passes, differential equipment costs, lost time/down time, reduced efficacy, enhanced efficacy, etc.

Seed characteristic: Referring to biological, physical or chemical traits of seeds commonly used in agriculture, that might be related to pest management considerations. Some examples for seeds include pelleted, coated, dyed, anti-feedant, growth additive, enhanced, certified, etc.

Soil amendment(s): This can refer to a variety of non-pesticidal treatments added to soil. Some examples include fertilizers, nutrient enhancers, inoculants, additives, bio-stimulants, composts, compost extracts, biological blends, residue, etc.

Conservation Practices: Refers to a number of tactics employed by growers (and often endorsed by government programs) to prevent loss of soil or crop material from land by erosion, runoff, etc. or to provide habitat for beneficial species. Some common examples include conservation tillage, reduced/no tillage, vegetative filter strips, strip cropping, terracing, terrace farming, cropped/grassed terraces, grassed waterways contour tillage/farming, crop residue management, water/sediment control basins, in-field vegetative filter strips, riparian buffers, flowering refuges, habitat enhancement, etc.

Statistics/Stats: Common measurement parameters around questions related to numerical responses. These can include terms like median, mean, average, typical, minimum, maximum, etc.

Term/Insert Term/Other Term: Often included in questions seeking specific info about a grower’s understanding of label verbiage or other commonly used technical language—informative as to whether EPA’s proposed verbiage will be understood.

Type of trap or other monitoring mechanism: Used for questions about pest monitoring and can include various types of traps or monitoring devices. Examples include wing traps, spore traps, delta traps, pitfall traps, pheromone traps, fly strips, pane traps, passive interception, kairomone traps,

**Table A-1. Demographic Questions**

|  |  |
| --- | --- |
| 1. Regarding your specialization in [use site], please select all that apply: | |
|  | a. I work for an academic institution (e.g., professor, researcher, Extension Agent) |
| b. I am a Certified Crop Advisor (CCA) |
| c. I am a member of the National Alliance of Independent Crop Consultants (NAICC) |
| d. I am currently an agricultural producer of [use site] |
| e. I was previously an agricultural producer of [use site] |
| f. Other (please specify): |
| g. None of the above |
| *[if yes to 1a-1f, continue to #2; otherwise skip to question #5]* | |
| 2. Approximately how many years have you been involved with [use site]? | |
|  | <1 year |
| 1 - <5 years |
| 5- <10 years |
| 10 or more years |
| 3. Approximately how many [unit of measure, such as acres] of [use site] are you current involved with? | |
|  | *Response options will depend on use site* |
| 4. In what state(s) are you currently involved with [use site]? Check all that apply | |
|  | *Checklist of U.S. states will be listed* |
| 5. What other [use sites] are you currently involved with? Check all that apply | |
|  | *Checklist of use sites will be provided* |

**Table A-2. Question Bank**

| **ID** | **Question Category** | **Question** |
| --- | --- | --- |
| 1 | Alternatives | What are the most likely alternatives to [treatment] for use [on/in] [agricultural system(s)]? |
| 2 | Alternatives | What are the most likely alternatives to [treatment] where [users] currently use this [treatment] at the [highest/average] rate? |
| 3 | Alternatives | What alternatives are available for [the pest(s)] targeted by [treatment] [on/in] [agricultural system(s)]? |
| 4 | Alternatives | What are the most likely alternatives for [pest(s)] targeted by [treatment] [on/in] [agricultural system(s)]? |
| 5 | Alternatives | What alternatives does [entity, such as operation] currently use for [pest(s)] targeted by [treatment] [on/in] [agricultural system(s)]? |
| 6 | Alternatives | What other management options are available if [treatment] was not available? |
| 7 | Alternatives | When using an alternative to [treatment], how [do/does] [this/these] [alternative option(s)] compare to [treatment] in terms of product performance? |
| 8 | Alternatives | When using [alternative(s)] to [treatment], how [do/does] [this/these] [alternative option(s)] compare to [treatment] in terms of their compatibility with current season-long pest management considerations, including resistance management? |
| 9 | Alternatives | If [treatment] could not be used during [time, such as crop stage or bloom stage], what strategies would [the user(s)] likely adopt to control [the pest(s)]? |
| 10 | Alternatives | What are the advantages of [treatment] relative to [other alternative(s)]? |
| 11 | Alternatives | What are the disadvantages of [treatment] relative to [other alternative(s)]? |
| 12 | Alternatives | Besides potential yield or quality losses, what other expected costs would be incurred if [treatment] were no longer available and alternatives had to be adopted? |
| 13 | Alternatives | What are the estimated yield impacts and/or quality losses if [treatment] was not available and there are no other efficacious alternatives? |
| 14 | Alternatives | What are the estimated yield impacts and/or quality losses if [treatment] was not available and the next best alternative(s) [was/were] used? [Please list by [treatment, such as each active ingredient] alternative]. |
| 15 | Alternatives | If [treatment] was not available, how would the chemical costs per acre change? Please list by [treatment, such as each active ingredient] alternative. |
| 16 | Alternatives | What are the additional costs when using the next best alternative to [treatment], such as [the need for additional field passes, different equipment needs, or additional labor needs]? |
| 17 | Alternatives | When using [alternative(s)] to [treatment], how would the cost per [unit of space, such as acre] change? |
| 18 | Alternatives | In [unit of time], what is the cost per application of [major alternative(s) to treatment at hand] in dollars per [unit of measure, such as acres] on [agricultural system(s)]? |
| 19 | Alternatives | Why is [formulation] [used/not used] relative to [another formulation (e.g., not compatible with application equipment, cost, phytotoxicity concerns)]? |
| 20 | Application Method | How is [treatment] applied [on/in] [agricultural system(s)]? |
| 21 | Application Method | What is the primary method of application used when applying [treatment][on/in] [agricultural system(s)]? |
| 22 | Application Method | Do applicators apply the [formulation type(s)] of [treatment] [on/in] [agricultural system(s)]? |
| 23 | Application Method | Do [user(s)] apply [treatment] [on/in] [agricultural system(s)] using [application method(s)]? |
| 24 | Application Method | Why [is/are] [type(s) of application method(s)] when using [treatment] important for use [in/on] [agricultural system(s)]? |
| 25 | Application Method | Are [type(s) of application method(s)] important across the entire [time, such as season] or only in [particular times, such as season(s)]? |
| 26 | Application Method | What [is/are] the primary [time, such as season(s)] for the application of [treatment] [in/on] [agricultural system(s)]? |
| 27 | Application Method | Could [application method(s)] of [treatment?] [in/on] [agricultural system(s)] be replaced by [alternative application method(s)]? |
| 28 | Application Method | Could [formulation(s)] of [treatment] [in/on] [agricultural system(s)] be replaced by [alternative formulation(s)]? |
| 29 | Application Method | Could [a change in application conditions or application directions] affect [application method(s)] of [treatment] [in/on] [agricultural system(s)]? |
| 30 | Application Method | [Is/Are] [droplet size(s)] feasible for [application method(s)] of [treatment?] [in/on] [agricultural system(s)]? |
| 31 | Application Method | What are reasons that [certain application method(s)] are preferred over others when using [treatment] [in/on] [agricultural system(s)]? |
| 32 | Application Method | What are reasons that [certain formulations(s)] are preferred over others when using [treatment] [in/on] [agricultural system(s)]? |
| 33 | Application Method | What type of aircraft is used when making aerial applications of [treatment] [in/on] [agricultural system(s)]? |
| 34 | Application Method | How many [unit of measure, e.g., acres] can be treated with [treatment] using [application method(s)] in [unit of time, e.g., one day] [in/on] [agricultural system(s)]? |
| 35 | Application Method | How frequently are application(s) of [treatment] made to [specific site, e.g., a tree] [in/on] [agricultural system(s)]? |
| 36 | Application Method | When doing a tree drench, is [treatment] more likely to be used as a trunk or soil application under the tree? |
| 37 | Application Method | What type of [application equipment] is primarily used when applying [treatment][on/in] [agricultural system(s)]? |
| 38 | Application Method | Why [is/are] the [formulation type(s)] of [treatment] important for use [in/on] [agricultural system(s)]? |
| 39 | Application Method | Do you use [application equipment type(s)] when applying [treatment] [in/on] [agricultural system(s)]? |
| 40 | Application Method | How often [is/are] [application equipment] used to apply all types of pesticides [in/on] [agricultural system(s)]? |
| 41 | Application Method | If chemigation applications of [treatment] are typically watered in for efficacy, what was the target depth? |
| 42 | Application Method | If [treatment] is typically [type of incorporation, such as mechanically incorporated or buried in the crop furrow], what was the target depth? |
| 43 | Application Method | For [type of application(s)], do you routinely use [application method(s)/tools for application]? |
| 44 | Application Methods and Practices | In [unit of time], what was the cost per application of [treatment] in dollars per [unit of measure, such as acres] on [agricultural system(s)]? |
| 45 | Application Methods and Practices | Were any of the following pesticide spraying practices or activities used on this operation [in/during] [unit of time]? |
| 46 | Application Methods and Practices | Were any of the following pesticide spraying practices or activities used keep [treatment(s)] application(s) on-target (i.e., reduce pesticide drift)? |
| 47 | Application Methods and Practices | If any of the following pesticide spraying practices or activities used in [unit of time], how easy or difficult was it to implement this practice or activity in terms of labor, training, capital expenditures, and other costs? |
| 48 | Application Methods and Practices | If any of the following pesticide spraying practices or activities used in [unit of time], why was this practice or activity NOT used? |
| 49 | Application Methods and Practices | Which of the following spraying practices resulted in a sprayer re-calibration in [unit of time]? |
| 50 | Application Methods and Practices | Which of the following methods of spraying did this operation use to make [treatment] applications in [unit of time]? |
| 51 | Application Methods and Practices | What [treatment(s)] were used in this [insert tank system type] in [unit of time]? |
| 52 | Application Methods and Practices | What is the typical spray volume, in Gallons per Acre (GPA), for [treatment(s)] application(s) in [unit of time]? |
| 53 | Application Methods and Practices | What is the typical operating pressure, in PSI, for [treatment(s)] in [unit of time]? |
| 54 | Application Methods and Practices | What is the typical nozzle used when spraying [treatment(s)] application(s) in [unit of time]? |
| 55 | Application Methods and Practices | What is the typical ground speed when spraying [treatment(s)] application(s) in [unit of time]? |
| 56 | Application Methods and Practices | What is the typical [spraying practice, such as boom height above the ground or plant canopy] when [utilizing treatment(s)] in [unit of time]? |
| 57 | Application Methods and Practices | What is the typical target droplet size spectrum for [treatment(s)] applications in [unit of time]? |
| 58 | Application Methods and Practices | Which of the following drift reducing practices were used in [year]? |
| 59 | Application Methods and Practices | In which direction is the majority of spray material from this operation’s air blast sprayer(s) directed? |
| 60 | Application Methods and Practices | How often did [entity, such as operation] clean the [application equipment] in [time period]? |
| 61 | Application Methods and Practices | For each time that the [application equipment] was cleaned, how often was a tank cleaner used? |
| 62 | Application Methods and Practices | What were the most common reasons for replacing the nozzles on the sprayers in [unit of time]? |
| 63 | Application Methods and Practices | In an effort to reduce off-target impacts to [plants, pollinators, and/or beneficial insects], did this operation communicate with or consult any of the following sources in [unit of time]? |
| 64 | Application Methods and Practices | What nozzles were typically used most often for any [specific time period for application, such as pre-emergence] [treatment(s)] applications? |
| 65 | Application Methods and Practices | Did this operation use separate spray rigs for [treatment(s)] applications? |
| 66 | Application Methods and Practices | For [specific area, such as a field], what material were a majority of the nozzles made of that were used across [treatment(s)] in [unit of time]? |
| 67 | Application Methods and Practices | For the selected field, what were the most common reasons for replacing the nozzles on the [type of] sprayers in [time period]? |
| 68 | Application Methods and Practices | Were the spraying practices for [field or other agricultural unit]] for this [entity, such as an operation] similar to the spraying practices for this [area, such as a field] during [unit of time]? |
| 69 | Application Rate | What is the lowest effective application rate of [treatment] that could be used to control for [pest(s)] [in/on] [agricultural system(s)]? [specify rate measurement unit] |
| 70 | Application Rate | What is the lowest effective rate of [treatment] that could be used during [time, such as crop stage] [in/on] [agricultural system(s)]? [specify rate measurement unit] |
| 71 | Application Rate | What is the lowest effective application rate of [treatment] when used in tank mixes with other harvest aids that could be used [in/on] [agricultural system(s)]? [specify rate measurement unit] |
| 72 | Application Rate | What is the lowest effective application rate of [treatment] when used in tank mixes with other harvest aids that could be used to control for [pest(s)] [in/on] [agricultural system(s)]? [specify rate measurement unit] |
| 73 | Application Rate | What are the typical application rate(s) for [treatment] when used [in/on] [agricultural system(s)]? [specify rate measurement unit] |
| 74 | Application Rate | What are the typical application rate(s) for [treatment] when used to treat for [pest(s)] [in/on] [agricultural system(s)]? [specify rate measurement unit] |
| 75 | Application Rate | What is the maximum application rate of [treatment] that is used for [pest(s)] [in/on] [agricultural system(s)]? [specify rate measurement unit] |
| 76 | Application Rate | What is the maximum application rate of [treatment] that is used to treat for [pest(s)] [in/on] [agricultural system(s)]? [specify rate measurement unit] |
| 77 | Application Rate | For what purposes are higher application rates of [treatment] used [in/on] [agricultural system(s)]? |
| 78 | Application Rate | For what purposes are maximum rates of [treatment] used [in/on] [agricultural system(s)]? |
| 79 | Application Rate | For what purposes are maximum rates of [treatment] used [during crop stage/time] [in/on] [agricultural system(s)]? |
| 80 | Application Rate | What is a range of typical rates for application of [soil amendment] to fields [(specify rate measurement unit)] [in/on] [agricultural system(s)]? |
| 81 | Application Rate | What is your [time period, such as annual] application rate for [treatment] [in/on] [agricultural system(s)]? [specify rate measurement unit] |
| 82 | Application Rate | Under what circumstances [provide examples, as needed] would [treatment] [time, such as annual] application rates be above [specify rate] [in/on] [agricultural system(s)]? |
| 83 | Application Rate | How frequently is [specify rate] used [in/on] [agricultural system(s)]? |
| 84 | Application Rate | How would [treatment] application rates differ when used alone versus in combination with other [treatment(s)] [in/on] [agricultural system(s)]? |
| 85 | Application Rate | What is the lowest effective application rate of [treatment] when used in tank mixes with other harvest aids that could be used during [crops stage/time] [in/on] [agricultural system(s)]? [specify rate measurement unit] |
| 86 | Application Rate | What are the typical application rate(s) for [treatment] when used during [crop stage/time] [in/on] [agricultural system(s)]? [specify rate measurement unit] |
| 87 | Application Rate | What are the typical application rate(s) for [treatment] when used to treat for [pest(s)] during [crop stage/time] [in/on] [agricultural system(s)]? [specify rate measurement unit] |
| 88 | Application Rate | What is the maximum application rate of [treatment] that was used [in/on] [agricultural system(s)]? [specify rate measurement unit] |
| 89 | Application Rate | What is the maximum application rate of [treatment] that was used during [crop stage/time] [in/on] [agricultural system(s)]? [specify rate measurement unit] |
| 90 | Application Rate | What is the maximum application rate of [treatment] that was used to treat for [pest(s)] during [crop stage/time] [in/on] [agricultural system(s)]? [specify rate measurement unit] |
| 91 | Application Rate | For what purposes are higher application rates of [treatment] used during [crop stage/time] [in/on] [agricultural system(s)]? |
| 92 | Application Rate | What application rates of [treatment] per seed are typically used [in/on] [agricultural system(s)]? |
| 93 | Application Rate | What are the maximum application rates of [treatment] per seed typically used [in/on] [agricultural system(s)]? |
| 94 | Application Rate | For what purposes would different application rates of [treatment] per seed be used [in/on] [agricultural system(s)]? |
| 95 | Application Rate | Under what conditions is [treatment] used at [specified application rate] [in/on] [agricultural system(s)]? |
| 96 | Application Rate | If so, how many [unit of measure, such as acres] can [one or more individual(s)] treat during a [time period, such as a single day] with [a specific application method or tool, such as a mechanically pressurized handgun]? |
| 97 | Application Timing | When is [treatment] typically applied [in/on] [agricultural system(s)]? |
| 98 | Application Timing | Please explain why [treatment] is typically applied at [this time] [in/on] [agricultural system(s)]? |
| 99 | Application Timing | How often does [variable that prohibits application, such as wind speed] impede applications of [treatment] for control of [pest]? |
| 100 | Benefits | [Is/Are] [treatment(s)] a component of [specific pest management program] [in/on] [agricultural system(s)]? |
| 101 | Benefits | What are your primary [target pest(s)] pressure(s) [in/on] [agricultural system(s)]? |
| 102 | Conservation Practices | Do you manage runoff from [agricultural system(s)] areas treated with [treatment]? |
| 103 | Conservation Practices | What methods do you use to manage runoff from [agricultural system(s)] areas treated with [treatment]? |
| 104 | Conservation Practices | How widespread are runoff management systems in different [delineated geographic areas]? |
| 105 | Conservation Practices | What methods do you manage runoff from [agricultural system(s)] areas? |
| 106 | Conservation Practices | Do you manage runoff from [agricultural system(s)] areas? |
| 107 | Conservation Practices | What application methods(s) are used to enhance [conservation practices (conservation tillage, conventional tillage, etc.)]? |
| 108 | Conservation Practices | What conservation practices are used in [field or other agricultural unit]? |
| 109 | Conservation Practices | On what proportion did this operation use hedge rows or other wind-breaking structures (that are at least one and a half times the height of the crop canopy) for drift reduction in [unit of time]? |
| 110 | Conservation Practices | How often were the following Best Management Practice (BMPs) used during the season in [unit of time]? |
| 111 | Educational Resources | [In/during] [unit of time], was [resource or data source(s)] used to assist in determining [either the need or when to make] applications of [treatment]? |
| 112 | Educational Resources | How often were the following sources of information used to inform [pest management decisions] in [unit of time]? |
| 113 | Educational Resources | Which of the following types of services offered by the University and/or Agricultural Cooperative Extension were most often used as sources of pest management decisions in [unit of time]? |
| 114 | End Products | What are the end products that are produced using [agricultural system(s)] after [agricultural system(s)] are treated with [treatment]? |
| 115 | End Products | What is the end product distribution [for example, locally or distributed for national consumption] for end products produced from [agricultural system(s)] after [agricultural system(s)] are treated with [treatment]? |
| 116 | Geographic Considerations | Where does the use of[treatment] occur [in/on] [agricultural system(s)]? |
| 117 | Geographic Considerations | Are there any [delineated geographic areas, such as states or regions] where [treatment] is an important control measure for [target pets]? |
| 118 | Geographic Considerations | Are there any [delineated geographic areas, such as states or regions] where [treatment] is an important control measure for pests other than [target pest(s)]? |
| 119 | Geographic Considerations | Where in [geographically delineated areas, such as the U.S. or a county] is [treatment] typically used? |
| 120 | Geographic Considerations | Do use patterns for [treatment] [in/on][agricultural system] vary by [geographically delineated area, such as region]? |
| 121 | Geographic Considerations | What are the differences in application rates of [treatment] across [geographically delineated area, such as region]? |
| 122 | Geographic Considerations | What are the differences in the frequency of applications of [treatment] across [geographically delineated area, such as region]? |
| 123 | Geographic Considerations | To what [delineated geographic areas, such as states or regions] do your answers pertain? |
| 124 | Geographic Considerations | What are the [geographically delineated area, such as regional] differences in importance of [treatment]? |
| 125 | Geographic Considerations | In what [geographically delineated area, such as regional] is the use of [treatment] most important? |
| 126 | Geographic Considerations | What are the [geographically delineated area, such as regional] differences in the use of [treatment]? |
| 127 | Geographic Considerations | What are the [geographically delineated area, such as regional] differences in the importance of [treatment]? |
| 128 | Geographic Considerations | What niche uses exist for the use of [treatment] in [geographically delineated area, such as state]? |
| 129 | Geographic Considerations | What factors are unique to [treatment] or the areas treated with [treatment] that limit the area that can be treated? |
| 130 | Geographic Considerations | Where in the [geographically delineated area, such as U.S. or state] is [treatment] typically used? |
| 131 | Geographic Considerations | Does the [treatment] use pattern vary by [geographically delineated area, such as region]? |
| 132 | IPM | Why was [pest] scouting conducted? |
| 133 | IPM | Was [pest] scouting done after a [pest control application] to evaluate degree of control? |
| 134 | IPM | Was [pest] scouting data compared to published information on [infestation thresholds] to determine when to take measures to manage [pests] in this [field or other agricultural unit]? |
| 135 | IPM | Did you conduct any of the following activities for the [agricultural system(s)] grown specifically for the purposes of [pest] control or reducing the spread of [pests] |
| 136 | IPM | Do you monitor [pest(s)] by [type of trap of other monitoring mechanism] in [agricultural system(s)]? |
| 137 | IPM | Did you do any of the following other types of pest management practices for the specific purpose of managing or reducing the spread of pests in [field or other agricultural unit]? |
| 138 | Niche Use | What are the niche uses of [treatment] on [agricultural system(s)]? |
| 139 | Number of Applications | Why are multiple applications of [treatment] needed [in/on] [agricultural system(s)]? |
| 140 | Number of Applications | How likely is it that multiple applications of [treatment] will be made [in/on] [agricultural systems] within a [time period, such as a season]? |
| 141 | Number of Applications | What is a reasonable estimate of the [minimum, average, typical, median, or maximum] number of [time period, such as days] a [agricultural system(s)] applicator might be expected to apply [treatment] in a given [season/year]? |
| 142 | Number of Applications | For [application types(s)] applications, what is the typical number of applications per [time period, such as a year]? |
| 143 | Number of Applications | Under what circumstances [provide examples, as needed] would the number of applications of [treatment] exceed [unit of measurement] [in/on] [agricultural system(s)]? |
| 144 | Number of applications | Is [treatment] typically applied more than [number of applications in a given time period] in agricultural system(s)]? |
| 145 | Number of applications | What are the typical application intervals used when applying [treatment] to control for [target pest(s)] [in/on] [agricultural system(s)]? |
| 146 | Number of applications | What are the drivers for [specific number of applications] of [treatment] [in/on] [agricultural system(s)]? |
| 147 | Organic | Would loss of availability of [treatment] affect the feasibility of organic production? |
| 148 | Organic | How important is [treatment] for organic production of [agricultural system(s)]? |
| 149 | Pesticide Use & Usage | How much [treatment] is used annually [in/on] [agricultural system(s)]? |
| 150 | Pesticide Use & Usage | What is the maximum number of [unit of measure, such as acres] that are treated with [treatment] in a [time period, such as in a day]? |
| 151 | Pesticide Use & Usage | What is the typical number of [unit of measure, such as acres] that are treated with [treatment] in a [time period, such as in a day]? |
| 152 | Production Practices | Are [crop] seeds pelleted? |
| 153 | Production Practices | What percent of [crop] acres are planted with pelleted seeds? |
| 154 | Production Practices | What size are pelleted [crop] seeds? |
| 155 | Production Practices | Could [crop] seeds be pelletized to [specific size for size range] |
| 156 | Production Practices | What is typical seeding rate per acre for [crop]? |
| 157 | Production Practices | Why do you use this seeding rate for [crop]? |
| 158 | Production Practices | What is the maximum seeding rate per acre for [crop]? |
| 159 | Production Practices | If a [specific mitigation] were required to use [treatment], what are your resource considerations would arise for you? [examples may be provided, such as cost, difficulty in installation, maintenance]. |
| 160 | Production Practices | Do you implement [specific agricultural practice, such as girdling and/or turning] in your [agricultural system(s)]? |
| 161 | Production Practices | On what percent of your acres do you implement [specific agricultural practice, such as girdling and/or turning] in your [agricultural system(s)]? |
| 162 | Production Practices | [Is/Are] [specific agricultural practice, such as girdling and/or turning] implemented in [delineated geographical area, such as a region]? |
| 163 | Production Practices | Why [is/are] [specific agricultural practice, such as girdling and/or turning] implemented? |
| 164 | Production Practices | What method(s) are used to plant [crop]? |
| 165 | Production Practices | How deep are [crop] seeds typically planted? |
| 166 | Production Practices | Are bittering agents available to prevent [pests] from consuming [crop] seed? |
| 167 | Production Practices | For [crop], in a high end scenario, what would be the likely proportion of nutrient input that is provided by [soil amendment(s)]? |
| 168 | Production Practices | How likely is it that [soil amendment] would be spread on [crop(s)]? |
| 169 | Production Practices | What are the most typical [soil amendment(s)] practices on [crop(s)] in [delineated geographical area(s)]? |
| 170 | Production Practices | Are nursery pots typically placed on bare ground or over a fabric/polymer ground cover? |
| 171 | Production Practices | What percentage of your nursery pots that are treated with [treatment] are typically placed on bare ground or over a fabric/polymer ground cover? |
| 172 | Production Practices | What is the typical area/size of a [horticulture-related] block? |
| 173 | Production Practices | What proportion of the [horticulture-related area] would likely be treated simultaneously with [treatment]? |
| 174 | Production Practices | What are the advantages of [application method(s)] methods of application for [treatment]]? |
| 175 | Production Practices | What are the disadvantages of [application method(s)] methods of application for [treatment]]? |
| 176 | Production Practices | How deep in the soil (in inches) is a [treatment] typically integrated for [method(s) of application] (i.e., at the same depth as the seed, below the seed, or above the seed)? |
| 177 | Production Practices | If a [treatment] label requires soil incorporation but does not specify a depth, what depth would most farmers typically use for [crop]? |
| 178 | Production Practices | What proportion of the planted [crop] seed remains on top of the soil for [each application method(s)]? |
| 179 | Production Practices | Which of the following auditing systems, if any, did this operation participate in in [unit of time]? |
| 180 | Resistance Management | Were [treatment(s)] different Modes of Action (MOA) [rotated and/or tank mixed] for the purpose of keeping [pest(s)] from becoming resistant? |
| 181 | Resistance Management | Do you [rotate and/or tank mix] [treatment(s)] for the purpose of [specific goal, such as resistance management] |
| 182 | Resistance Management | Was [treatment] tank mixed with [a treatment(s)] from different mechanisms of action? |
| 183 | Resistance Management | How often were the following practices used during the season to manage [treatment(s)] resistance in [unit of time]? |
| 184 | Seeds | What is the cost of [treatment] treated [crop] seed? |
| 185 | Seeds | What is the cost of [seed characteristic, such as pelleted seed]? |
| 186 | Seeds | What are the advantages of [seed characteristic] seeds? |
| 187 | Seeds | What type of [impact] would be observed if [seed characteristic] is mandatory? |
| 188 | Seeds | What percentage of your acres were planted with [specific variety/trait(s)] seeds in [time period]? |
| 189 | Tank Mixing | Is [treatment] primarily used alone or in combination with other [treatments]? |
| 190 | Tank Mixing | Is [treatment] used outside of tank mixes [in/on] [agricultural system(s)]? |
| 191 | Tank Mixing | If [treatment] is used outside of tank mixes [in/on] [agricultural system(s)], what percentage of total acres treated with [treatment] to these account for? |
| 192 | Tank Size | What is the standard size of tanks for [technology] used for [application method] for [treatments] [in/on] [agricultural system(s)]? |
| 193 | Target Pests | What are the target pest(s) that drive the use of higher rates of [treatment] [in/on] [agricultural system(s)]? |
| 194 | Target Pests | What are the target pest(s) that drive the use of higher rates of [treatment] [in/on] [agricultural system(s)]? |
| 195 | Target Pests | What are the target pest(s) that drive the use of maximum rates of [treatment] [in/on] [agricultural system(s)]? |
| 196 | Target Pests | What are the target pest(s) that drive the use of higher rates of [treatment] during [crop stage/time] [in/on] [agricultural system(s)]? |
| 197 | Target Pests | What are the target pest(s) that drive the use of maximum rates of [treatment] during [crop stage/time] [in/on] [agricultural system(s)]? |
| 198 | Target Pests | What pest(s) are targeted when applying [treatment] at [specified application rate] [in/on] [agricultural system(s)]? |
| 199 | Target Pests | What are the target pests of [treatment] [in/on] [agricultural system(s)]? |
| 200 | Target Pests | What are the major target pests of [treatment] [in/on] [agricultural system(s)]? |
| 201 | Target Pests | What are the [periodic or invasive pests of concern] for which [treatment] is a control option? |
| 202 | Target Pests | For which [agricultural system(s)] is [treatment] a control option for [periodic or invasive pests of concern] for which [treatment]? |
| 203 | Target Pests | Is [treatment] used to control [pest(s)] [in/on] [agricultural system(s)]? |
| 204 | Target Pests | What application rate of [treatment] is used to control [target pest(s)] [in/on] [agricultural system(s)]? |
| 205 | Target Pests | What is the minimum rate of [treatment] needed to control [target pest(s)] [in/on] [agricultural system(s)]? |
| 206 | Target Pests | How much [treatment] is used [time period] [target pest(s)] [in/on] [agricultural system(s)]? |
| 207 | Target Pests | How many applications of [treatment] are needed [time period, typically annually] to control [target pest(s)] [in/on] [agricultural system(s)]? |
| 208 | Target Pests | What are important target pests when using [treatment] [in/on] [agricultural system(s)]? |
| 209 | Target Pests | What are potential alternatives to [treatment] for target pests [in/on] [agricultural system(s)]? |
| 210 | Target Pests | Are applications of [treatment] that target more than one pest common [in/on] [agricultural system(s)]? [likely an example will provided, such as explaining the treatment may be used both for target insects and nematodes, either purposefully or incidentally] |
| 211 | Target Pests | Is [treatment] used to control [pest #1], [pest #2], or both? |
| 212 | Terminology | What is the [term, such as a physiological signal or crop stage name (familiar to growers)] that indicates [crop stage/timing]? |
| 213 | Terminology | What does the term "[insert term]" mean to you? |
| 214 | Terminology | How does the term "[insert term]" differ from "[other term(s)]"? |
| 215 | Use and Usage | Are [type of application(s)] made in [greenhouses or other non-outdoor system] or outdoors? |
| 216 | Use and Usage | What is the [typical, average, maximum, minimum] [area, such as number of acres] treated per [time period, such as a day] using [application equipment] [in/on] [agricultural system(s)]? |
| 217 | Use and Usage | What is the [typical, average, maximum, minimum] [area, such as number of acres] that are treated with [active ingredient] using [application method] in a [time period, such as a day]? |
| 218 | Use and Usage | What percent of direct seeded [crop(s)] are treated with [treatment(s)]? |
| 219 | Use and Usage | Is [a specific treatment(s)] used more than [other treatments]? |
| 220 | Use and Usage | Is [a specific treatment(s)] used more than [other treatments] at [timing/crop stage]? |
| 221 | Use and Usage | What percent of [agricultural system(s)] are typically treated with [treatment(s)] at [timing/crop stage]? |
| 222 | Use and Usage | Is [treatment] used more often as a [application method] or as a [alternative application method]? |
| 223 | Use and Usage | What percentage of acres is [treatment] used on as a [application method] or as a [alternative application method]? |
| 224 | Use and Usage | Is it appropriate to extrapolate [treatment] use patterns from other [agricultural system(s)] to reflect the use of [treatment] on [agricultural system(s)], such as [example(s)}? |
| 225 | Use and Usage | Do [agricultural system(s)] producers who utilize [specific practice] use [treatment(s)]? |
| 226 | Use and Usage | Would rotating chemistries in [agricultural system(s)] reduce the likelihood that [number of applications] are needed [unit of time}? |
| 227 | Use and Usage | When treating with [treatment], how much of the [production area(s)] are treated? |
| 228 | Use and Usage | When treating with [treatment], what percentage of applications only occur [at a specific location in the production area, such as around drippers]? |
| 229 | Use and Usage | What is the estimated proportion of [soil amendment] applied [in/on] [production area(s) that would be treated with [treatment]? |
| 230 | Use and Usage | What [agricultural systems(s)] is [treatment] used in? |
| 231 | Use and Usage | What minor crops have important niche uses of [treatment]? |
| 232 | Use and Usage | [Is/Are] the [formulation(s)] of [treatment] used in [agricultural system(s)]? |
| 233 | Use and Usage | What is the importance of [formulation(s)] of [treatment] used in [agricultural system(s)]? |
| 234 | Use and Usage | [Is/are] the [application method(s)] of [treatment] used in [agricultural system(s)]? |
| 235 | Use and Usage | What is the importance of [application method(s)] of [treatment] used in [agricultural system(s)]? |
| 236 | Use and Usage | What problems [do/does] [application method(s)] of [treatment] pose for [agricultural system(s)]? |
| 237 | Use and Usage | What problems [do/does] [formulation(s)] of [treatment] pose for [agricultural system(s)]? |
| 238 | Use and Usage | What [application equipment] changes would be required if [formulation(s)] of [treatment] where switched to [formulation(s)] in [agricultural system(s)]? |
| 239 | Use and Usage | What [application equipment] changes would be required if [application method(s)] of [treatment] where switched to [application methods(s)] in [agricultural system(s)]? |
| 240 | Use and Usage | Do [producer(s)] typically buy, share, rent, and/or lease the equipment and/or have the planting done by a custom applicator? |
| 241 | Use and Usage | What is the preferred [formulation(s)] of [treatment] in [agricultural system(s)]? |
| 242 | Use and Usage | Why is [formulation] of [treatment] preferred in [agricultural system(s)]? |
| 243 | Use and Usage | What [is/are] the preferred [application methods(s)] of [treatment] in [agricultural system(s)]? |
| 244 | Use and Usage | Why [is/are] [a particular application method(s)] of [treatment] preferred in [agricultural system(s)]? |
| 245 | Use and Usage | In [unit of time], how many [unit of measure, such as acres] did this operation treat with [treatment] in [agricultural system(s)]? |
| 246 | Worker Considerations | What [is/are] the number of refill events of [treatment] per [time period, such a s day], per applicator? |
| 247 | Worker Considerations | What are the specific worker activities [examples provided, such as setting irrigation equipment, hand weeding, harvesting, etc.] that might be impacted or changed if the re-entry Interval (REI) is greater than [time period, usually number of days]? |
| 248 | Worker Considerations | What is the maximum re-entry interval (REI) that would be acceptable for [task(s)] [in/on] [agricultural system(s)]? The current REI for [task(s) is [time period, such as days or hours]. |
| 249 | Worker Considerations | How soon after [treatment] is applied do [users (or their workers)] for [task(s)] need to enter the [agricultural system]? |
| 250 | Worker Considerations | When [users (or their workers)] re-enter the [field or other agricultural system unit], what activities are done [examples provided]? |
| 251 | Worker Considerations | How often is [treatment] applied by an applicator [explanatory examples or clarification may be provided]? |
| 252 | Worker Considerations | Will a requirement to use a respirator when [conducting task(s)for treatment] [in/on] [agricultural system(s)] impact the use of [treatment]? |
| 253 | Worker Considerations | What would be the expected impacts from a requirement to use a respirator when [conducting task(s)for treatment] [in/on] [agricultural system(s)]? |