

*Potato Sustainability Alliance (PSA) Survey  
Resource Manual  
for the 2020 Survey*

**\*\*NO AUDIT WILL BE PERFORMED FOR THE 2020 SURVEY\*\***

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Changes to this manual will be done periodically/annually to adjust for the changes to the PSA survey. This manual along with additional resources are posted at [www.uidaho.edu/potatoes](http://www.uidaho.edu/potatoes). For additional information or comments regarding this manual, please contact us at:

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No.	Minimum Requirements
2.3 (13)	What is the farming operation doing to prevent pest or disease problems and to reduce disease transmission potential? (Mark all that apply.)

- If you used “year-out” seed as allowed in the Idaho state seed law, then provide documentation that the seed adhered to established requirements prior to planting. If uncertified seed potato lots are submitted to ISDA for testing they will issue a letter with results and guidelines to follow for using as seed. Under this circumstance the seed is not considered certified, but has been tested and passed equivalent requirements. You could still answer “yes” to this question (see reference guide; <https://adminrules.idaho.gov/rules/2000/02/0639.pdf>).
- In Washington and Oregon, all commercial potato fields (> 1 acre in WA) must be planted with certified seed. Legally, “no” cannot be answered for this question if farming in the state of Oregon or Washington. Insert seed tags (blue, green or yellow) or seed receipts here.

No.	Minimum Requirements
2.6 (18)	Pesticides and nutrients are mixed, used, stored and disposed of according to legal requirements and farm meets all regulations for employee health and safety; in the absence of legal requirements all components of the PSA audit manual must be followed.

- Disposal/ recycling programs are available in each state:
  - WSDA has a pesticide recycling/disposal program. You can contact them to come to your farm or drop them off at a designated site. See: <https://agr.wa.gov/departments/pesticides-and-fertilizers/pesticides/waste-pesticide-application>
  - ODA: <http://www.oregon.gov/ODA/programs/Pesticides/RegulatoryIssues/Pages/PesticideStorageDisposal.aspx>
  - ISDA: <https://agri.idaho.gov/main/56-2/pesticides/pesticide-disposal/>
  
- You must be able to describe disposal practices of contaminated tank or container rinsate.
  - Rinsate must be utilized according to the pesticide label. Many labels indicate it should be applied to an area that has already been treated. Do not apply rinsate to roads or parking areas etc. It can be further diluted so that the application to crop site is not illegal. It can be placed into the waste disposal program or used as make-up water for another batch.

<b>No.</b> 2.8 (20)	<b>Minimum Requirements</b> Pesticide application equipment is operated within recommended wind-speed limits and with appropriate pressure, nozzle selection, boom height and droplet size to minimize spray drift
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- Large droplets travel less than smaller ones. Spray application equipment is adjusted and used in a manner to minimize spray drift. Maximum wind requirements from labels and local jurisdiction are abided, low pressure, coarse droplets and low release height of pesticides is used to mitigate drift. Air induction nozzles also minimize drift.
- If you do not apply pesticides, then supply name and applicator license number and expiration date of all applicators.
- Resource: Droplet size calculator: <http://pat.unl.edu/droplet-size-calculator>

<b>No.</b> 2.15 (27)	<b>Minimum Requirements</b> Within the past three years, pesticide applicator(s) has taken a pesticide safety course, passed an exam or obtained a license as required by local, state, provincial and federal law.
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Resource: Training materials (English and Spanish) can be found at [pesticideresources.org](http://pesticideresources.org).

<b>No.</b> 2.16 (28)	<b>Minimum Requirements</b> Is all fuel, including portable containers, stored safely and securely and consistent with all legal requirements?
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- Additional resources:
  - Washington State Department of Ecology:  
[fortress.wa.gov/ecy/publications/publications/0308014.pdf](http://fortress.wa.gov/ecy/publications/publications/0308014.pdf)
  - WS DOE Underground Tank Storage: [www.ecy.wa.gov/programs/tcp/ust-lust/tanks.html](http://www.ecy.wa.gov/programs/tcp/ust-lust/tanks.html)
  - Oregon Underground Tank Program: [www.oregon.gov/deq/tanks/Pages/UST.aspx](http://www.oregon.gov/deq/tanks/Pages/UST.aspx)
  - Idaho Underground Tank: [deq.idaho.gov/waste-mgmt-remediation/storage-tanks/](http://deq.idaho.gov/waste-mgmt-remediation/storage-tanks/)

<b>No.</b> <b>3.3</b> <b>(31)</b>	<b>Seed Handling and Planting</b> Does the farm wash and sanitize seed cutting equipment between seed lots?
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- Common cleaning practices include continuous disinfectant (labeled and registered) spray on cutting knives; clean handling equipment and cutter with soap-based detergent and water, followed by disinfectant. Remember that cleaning is a three-step process: washing with a detergent and water; rinsing, and applying a disinfectant.

Resource: University of Idaho CIS bulletin 1180: 'Cleaning and Disinfecting Potato Equipment and Storage Facilities' (<https://www.extension.uidaho.edu/publishing/pdf/CIS/CIS1180.pdf>)

<b>No.</b> <b>3.7</b> <b>(35)</b>	<b>Seed Handling and Planting</b> In addition to crop quality, does the farm take into consideration environmental impacts and chemical, foreign material and microbiological hazards when selecting potato fields?
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- Factors considered for specific field selections. Examples could include:
  - Previous crop history with pest pressure
  - Distance from housing, environmentally sensitive area, populated areas
  - Buffer at edge of fields located beside a road for foreign material pickup
  - Areas of old homesteads, corrals, etc.
  - Suitable topography

Resource: "Minimizing Foreign Material" videos in both English and Spanish are available at [www.uidaho.edu/cals/potatoes/food-and-farm-safety](http://www.uidaho.edu/cals/potatoes/food-and-farm-safety)

<b>No.</b> <b>3.9</b> <b>(37)</b>	<b>Seed Handling and Planting</b> When determining suitability of a field for growing potatoes, does the grower consider the potential impact on adjacent land and neighbors?
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- Determine if a field is suitable for potato production in that cropping year and if there is any potential impact on or from neighboring areas. Comments could include:
  - Previous crops (herbicide carryover, pest host), rotation length, power lines/houses to impact aerial applications, canal/waterway adjacent or through field, proximity to other potato fields/crops/natural areas that harbor pests to potatoes. In addition, proximity to sources of foreign material such as a golf course, a landfill, or major roads are considered in deciding suitability of field.
  - Wind patterns, field topography, soil type, availability of water.

<b>No.</b> <b>3.10</b> <b>(38)</b>	<b>Seed Handling and Planting</b> How does the farm use Global Positioning System (GPS) navigation? (Mark all that apply.)
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Global position system (GPS) navigation can be used to improve the following farm operations providing cost savings by increasing efficiency and conserving inputs:

Some examples of the use:

- a) General tillage, minimizing overlap and skips in the field. Reducing a tillage step. No hilling operation prior to planting. Cultivation (dammer-diking) to minimize crop damage.
- b) Planting to optimize row and seed spacing
- c) For designating, then applying to specific regions of fields for variable rate fertilizer, fumigants, etc. Reducing overlap and skips when applying crop protection chemicals including insecticide, fungicide, and herbicides. Rate controllers for field application of crop protection chemicals.

No.	Pesticide and Nutrient
4.1 (39)	All pesticide and nutrient application equipment is appropriate for use and calibrated annually or more frequently if recommended by manufacturer's instruction.

See calibration examples: [extension.missouri.edu/p/G1270](https://extension.missouri.edu/p/G1270)

No.	Pesticide and Nutrient
4.2 (40)	Pesticide spill containment materials and clean water are readily available at pesticide mixing and application sites

A spill kit should be available wherever pesticides are stored or handled. A spill kit can be purchased or easily assembled and should contain the following items:

- Telephone numbers for emergency assistance.
- Personal protective clothing and equipment (gloves, footwear, and apron that are chemically resistant; disposable coveralls; protective eyewear; and a respirator).
- Containment “snakes” or “tubes” to confine the leak or spill to a small area.
- Absorbent materials, such as spill pillows, absorbent clay, kitty litter, activated charcoal, and vermiculite.
- Plastic cover for dry spills.
- A spray bottle filled with water to mist dry spills.
- “Caution tape” to isolate the area.
- A shovel, broom, and dustpan.
- Heavy duty disposal bags with ties.
- Duct tape—a universal tool.
- Sturdy plastic container that will hold the entire volume of the largest pesticide container being handled and that can be tightly closed; can also be used to store the contents of the spill kit.
- A permanent marker to write the name of the spilled pesticide on the container.

Commercially available kits exist:

- [www.newpig.com/pig-pesticide-spill-kit-in-stowaway-bag/p/KIT621?searchTerm=pesticide+spill+kits](http://www.newpig.com/pig-pesticide-spill-kit-in-stowaway-bag/p/KIT621?searchTerm=pesticide+spill+kits)
- <https://www.grainger.com/category/spill-kits-and-stations/spill-control-supplies/safety/ecatalog/N-lc4>



<b>No.</b> 4.3 (41)	<b>Pesticide and Nutrient</b> Pesticide containers are disposed of according to all applicable legal requirements. Disposable pesticide containers are triple rinsed. Refillable pesticide containers are handled as required by the manufacturer or local distributor.
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Pesticide container disposal program. Common practices include:

- Pesticides no longer in use are properly disposed of by returning to the manufacturer or disposal through hazardous waste disposal companies or local/regional disposal programs.
- Disposable containers must be triple rinsed, with rinsate added to the spray tank, and containers, made to not hold contents (punctured, cut out bottom of container) and recycled or disposed of in land fill.
- Do not re-use pesticide containers for anything! Including markers or trash barrels.

Recycling of disposable containers available through: <http://agriplasinc.com/>

<b>No.</b> 4.4 (42)	<b>Pesticide and Nutrient</b> Farm drift management plans are written and readily accessible.
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A written farm drift plan could include employee responsibilities, training protocol for employees, how to determine appropriate weather conditions, options to minimize drift, and protocol if off-target drift occurs.

- An example that could be adapted: <http://www.michag.com/wp-content/uploads/2018/07/MAC-Drift-Management-Plan.pdf>
- Additional resources:  
<https://athenaeum.libs.uga.edu/bitstream/handle/10724/34969/reducing.pdf?sequence=1> (reducing spray drift) and <https://www.ag.ndsu.edu/publications/crops/air-temperature-inversions-causes-characteristics-and-potential-effects-on-pesticide-spray-drift> (air temperature inversions)

Note: Pesticide labels and local laws may be conflicting on maximum wind speed allowable for applying pesticides. When a conflict exists, use slowest allowable wind speed as the maximum.

No.	Pest, Weed, Disease
5.2 (46)	Does the farm have adequate access to Integrated Pest Management (IPM) information resources.

Examples of newsletters (email or hard copy) or bulletins that can be used as IPM resources.

Idaho- [www.extension.uidaho.edu/resources2.aspx?title=Crop%20Production&category1=Crops&category2=Potatoes](http://www.extension.uidaho.edu/resources2.aspx?title=Crop%20Production&category1=Crops&category2=Potatoes)

Oregon- <https://catalog.extension.oregonstate.edu/search/content/potato>

Washington- <https://pubs.extension.wsu.edu/extension-publications>

Sign up for Potato IPM Newsletters in the Pacific Northwest:

WSU Potato Pest Alerts – for the Columbia Basin in Washington

<http://wsu.us13.list-manage.com/subscribe?u=2eff8714011ff4bfba18a0704&id=9dc1a6349a>

Potato Update – from OSU Hermiston <https://extension.oregonstate.edu/newsletter/potato-update-report>

Pacific Northwest Pest Alert Network – for Idaho and Malheur County <http://pnwpestalet.net/user/join/>

Potato Bytes – from OSU Klamath Falls <http://oregonstate.edu/dept/kbrec>

Western Regional IPM Center-- <http://westernipm.org/>

<b>No.</b>	<b>Pest, Weed, Disease</b>
5.3 (47)	Noxious weeds in areas bordering potato fields are controlled, by mowing, cultivation, burning (when recommended as a Best Management Practice) or chemical methods

For more information about noxious weeds:

Idaho – <http://invasivespecies.idaho.gov/noxious-weed-program/>

Oregon – <http://www.oregon.gov/ODA/programs/Weeds/Pages/AboutWeeds.aspx>

Washington - <http://www.nwcb.wa.gov/>

<b>No.</b>	<b>Pest, Weed, Disease</b>
5.7 (51)	Farm participates in regional insect and disease scouting programs or shares own scouting results on blight "hot lines" or newsletters.

Potato IPM Newsletters in the PNW:

WSU Potato Pest Alerts for the Columbia Basin in Washington

<http://wsu.us13.listmanage.com/subscribe?u=2eff8714011ff4bfba18a0704&id=9dc1a6349a>

Potato Update from OSU Hermiston <https://extension.oregonstate.edu/newsletter/potato-update-report>

Pacific Northwest Pest Alert Network for Idaho and Malheur County <http://pnwpestalet.net/user/join/>

Potato Bytes from OSU Klamath Falls <http://oregonstate.edu/dept/kbrec>

<b>No.</b>	<b>Pest, Weed, Disease</b>
5.9 (53)	Choose the single best answer to describe how the farm uses biological controls to manage pests (e.g. green manure used as a biofumigant or weed suppressant; introduced natural enemies; or biopesticides such as living organisms or products of living organisms).

Resources:

- Using Green Manures in Potato Cropping Systems: <http://pubs.cahnrs.wsu.edu/publications/wp-content/uploads/sites/2/publications/FS218E.pdf#:~:text=Washington%20potato%20producers%20are%2>

[Using, the%20quality%20of%20their%20soils.&text=These%20changes%20in%20the%20soil's,pest%20management%20\(McGuire%202012\).](#)

- Biological Control: <https://biocontrol.entomology.cornell.edu/purpose.php>

No.	Pest, Weed, Disease
5.13 (57)	When selecting a pesticide for a potato crop, grower considers (mark all that apply):

Resources: Understanding Pesticide Labels

- <https://pesticidestewardship.org/homeowner/how-to-read-the-label/>
- <http://extensionpublications.unl.edu/assets/pdf/g1955.pdf>

No.	Pest, Weed, Disease
5.14 (58)	Farm has actively identified the pesticide-applications with the greatest risk of developing resistance and uses one or more strategies to delay resistance.

Common information resistance management strategy on the farm includes:

- Awareness of pesticide uses, i.e., pest and pesticide combinations, most at risk of resistance, e.g., Colorado potato beetle and neonicotinoid insecticides.
- Follow label requirements and rotate modes of action (knowing IRAC, HRAC, FRAC codes); “sandwiching” same mode of action against a target pest.
- Combining multiple modes of action in a single application.
- Integrate cultural methods with chemical methods
- Crop rotation

Additional resources:

- Insecticide Resistance Action Committee (IRAC) Website: [www.irc-online.org](http://www.irc-online.org)
- Fungicide Resistance Action Committee (FRAC) Website: [www.frac.info](http://www.frac.info)
- Herbicide Resistance Action Committee (HRAC) Website: [www.hracglobal.com](http://www.hracglobal.com)

<b>No.</b> 6.3 (61)	<b>Nutrient Management</b> Is in-season crop nutrition sampling (e.g. petiole or soil testing) performed?
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Resources:

- [www.extension.uidaho.edu/nutrient/crop\\_nutrient/potato.html](http://www.extension.uidaho.edu/nutrient/crop_nutrient/potato.html)
- [www.extension.uidaho.edu/publishing/pdf/BUL/BUL0840.pdf](http://www.extension.uidaho.edu/publishing/pdf/BUL/BUL0840.pdf)

<b>No.</b> 6.5 (63)	<b>Nutrient Management</b> Nutrient application rates (as determined by soil sampling, foliar analysis, nutrient crediting, etc.) take into consideration available nutrients and projected crop need.
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Additional Resource:

- Cover crops for high-desert farming systems in Idaho, University of Idaho CIS Bulletin 889.  
<https://www.extension.uidaho.edu/publishing/pdf/BUL/BUL889.pdf>

<b>No.</b> 6.8 (66)	<b>Nutrient Management</b> Nutrient application practices that maximize uptake and minimize runoff and surface water contamination are used (e.g., broadcasting and quickly incorporating and/or dammer-diking, applying in sideband or in furrow, applying to growing crop, fertigation, using granular applications, etc.).
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Techniques you use when applying nutrients to avoid cropland losses and maximize uptake include:

- Broadcasting and quickly incorporating – this strategy is particularly important to minimize nitrogen volatilization from urea and other N fertilizers, including manure. See also: Management to Minimize Nitrogen Fertilizer Volatilization, MSU Extension Bulletin EB0209.  
<http://msuextension.org/publications/AgandNaturalResources/EB0209.pdf>

- Applying in a sideband or in furrow – placement of fertilizer near the root system where uptake occurs.
- Applying to a growing crop – that is actively taking up nutrients.
- Fertigation – also called spoon-feeding, where nutrients can be applied in small increments as plants need them.

<b>No.</b>	<b>Management Systems</b>
7.1 (67)	Which of the following management systems has the farm implemented? (Mark all that apply.)

Information for a farm’s written soil and water conservation plan.

- a) The plan should include strategies to reduce soil erosion on the farm. Identify problem areas and develop a soil erosion prevention plan. Most plans pay special attention to wetland areas and highly erodible land. Mitigating measures may include windbreaks and cover crops to prevent wind erosion, buffer zones surrounding wetland areas, reservoir tillage (dammer diker) to limit runoff, etc.
- b) Include in the nutrient plan information from soil analysis, petiole testing, manure or compost applications, and other results from variable rate and nutrient applications.
- c) Include in the plan a comprehensive soil and water program aimed at maintaining or improving soil health and quality. It should include water sources on and adjacent to the farm and potential threats to water quality. Wetland areas and creeks/stream/seepage areas on the farm should be included. Include in the plan what measures are taken to reduce contamination and erosion of water and soil sources.
- d) The plan includes all of the above but is documented that it is reviewed yearly and updated as needed. Keep a date on the document and revise the date when reviewed or updated.
- An example from Benton County, WA is located on the website [www.uidaho.edu/potatoes](http://www.uidaho.edu/potatoes) under PSI Sustainability Audit Information/ Resources/Soil and Water Conservation Plan example.

- Contact your state conservation service for assistance in developing conservation plans specific to your farming operations:

Idaho: <https://scc.idaho.gov/>

Oregon: <http://www.oregon.gov/ODA/programs/NaturalResources/SWCD/Pages/SWCD.aspx>

Washington: <http://scc.wa.gov/>

<b>No.</b> <b>7.3</b> <b>(69)</b>	<b>Management Systems</b> Grower or third party has used science-based procedures to conduct and document on-farm research (e.g., new varieties, soil amendments, pesticides, equipment, techniques, etc.) within the past three years.
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Resources on how to do on-farm research:

- <http://www.fao.org/docrep/006/Y5146E/y5146e05.htm>
- <https://www.agry.purdue.edu/ext/corn/news/timeless/onfarmresearch.pdf>

<b>No.</b> <b>8.2</b> <b>(72)</b>	<b>Working Conditions</b> Which of the following best describe farm employment policies? (Mark all that apply.)
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Resources and examples for a farm employment policy handbook:

- [https://www.dol.gov/whd/ag/ag\\_flsa.htm](https://www.dol.gov/whd/ag/ag_flsa.htm)
- [https://farmanswers.org/Library/Record/agriculture\\_employee\\_handbook\\_template](https://farmanswers.org/Library/Record/agriculture_employee_handbook_template)
- <http://agsci.oregonstate.edu/main/health-and-safety-training-manual>
- <http://fyi.uwex.edu/agsafety/files/2011/02/Farm-Safety-Handbook.doc>

<b>No.</b> 8.4 (74)	<b>Working Conditions</b> Does employee housing comply with all federal, state/provincial or local laws?
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Resource: US Dept. of Labor Website <https://www.dol.gov/whd/mspa/>

<b>No.</b> 8.5 (75)	<b>Working Conditions</b> Farm maintains open communications with employees, including an established process that resolves grievances in a timely and equitable manner.
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A document or written farm employment policy or employee handbook that includes farm policies on decision making, grievances, and expectations could help with this communication.

- An example from Michigan State University is shown below.

[https://farmanswers.org/Library/Record/agriculture\\_employee\\_handbook\\_template](https://farmanswers.org/Library/Record/agriculture_employee_handbook_template)

*“Employee concerns/suggestions*

*...The policies and procedures listed in this handbook are meant to be consistent with, and in support of our Mission and Values. If at any time you find your work environment in conflict with these written policies and procedures, we encourage you to share your concerns about the areas that are diverging from these policies. These questions, as well as any concerns or suggestions, should be shared with your immediate supervisor. If he/she is not available, please share your concerns or suggestions with the owner. We understand that in order to be the best that we can be, we need your input.”*



<b>No.</b> 8.6 (76)	<b>Working Conditions</b> Compensation calculations are clear and accessible to workers.
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Examples to explain compensation calculations to your employees could include:

- Explained at employee orientation or training sessions.
- Described when filling out employment paperwork.
- Described in written farm employment policy or employee handbook.
- Described in letter with first paycheck.

Details on how wage is calculated could include amount earned, deductions taken, and net earnings per paycheck. Example given on next page.

## Pay stub for an employee paid an hourly wage

The diagram shows a pay stub for an hourly employee with several callout boxes explaining the fields:

- The name and address of the legal entity that is the employer:** SMITH AND COMPANY, INC., 123 West Street Smalltown, CA 98765
- Last 4 digits of the employee's social security number or an employee ID number:** XXX-XX-6789
- All applicable hourly rates:** 18.00 regular, 27.00 overtime
- The inclusive dates of the period for which the employee is paid:** 2/11/02 to 2/17/02
- Name of the employee:** Johnson, Bob
- Total hours worked:** 40.00 (Regular) + 2.00 (Overtime) = 42.00
- Gross wages earned:** 774.00
- All deductions:** Federal W/H (60.45), FICA (49.67), Medicare (12.36), CA State W/H (10.04), CA State DI (7.12), 401k (77.40)
- Net wages earned:** 556.96

<b>SMITH AND COMPANY, INC.</b> 123 West Street Smalltown, CA 98765		<b>SOCIAL SECURITY NO.</b> XXX-XX-6789	<b>PAY RATE</b> 18.00 regular 27.00 overtime	<b>PAY PERIOD</b> 2/11/02 to 2/17/02
<b>EMPLOYEE</b> Johnson, Bob				
<b>EARNINGS</b>	<b>HOURS</b>	<b>AMOUNT</b>	<b>DEDUCTIONS</b>	<b>AMOUNT</b>
Regular	40.00	720.00	Federal W/H	60.45
Overtime	2.00	54.00	FICA	49.67
			Medicare	12.36
			CA State W/H	10.04
			CA State DI	7.12
			401k	77.40
<b>GROSS EARNINGS:</b>		774.00		
<b>TOTAL DEDUCTED:</b>		217.04		
<b>NET EARNINGS:</b>		556.96		

This pay stub is not applicable to an employee whose compensation is solely based on a salary and who is exempt from payment of overtime under Labor Code section 515(a) or any applicable IWC order.

<b>No.</b> 8.7 (77)	<b>Working Conditions</b> Farm provides opportunities for employee advancement (e.g., educational benefits, training etc.).
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Examples of opportunities provided for employee advancement at your farm:

- As outlined in our employee manual, opportunities for employee advancement include:
  - Cost share and/or leave time for education
  - In-house training
  - Internal advancement policy
- Example template from Michigan State University:

[https://farmanswers.org/Library/Record/agriculture\\_employee\\_handbook\\_template](https://farmanswers.org/Library/Record/agriculture_employee_handbook_template)

“Training and Continuing Education

Consider whether you wish to include a statement in support of training/education and/or a financial budget for such activities. An example policy is as follows: [Farm Name] believes in the continuing development of all of our team members, employees and management as well. We believe that professional and personal growth are both important. In order to encourage continuing education, we provide each team member with \$500 annually to use for professional or personal development. This could be training around a specific skill that may help you with your job or it may be training that you wish to attend that relates to a favorite hobby. We ask that you present your request to your supervisor for pre-approval, and then we ask that you share back with us how the training helped you.

In addition to this employee directed improvement, [Farm Name] may from time to time ask that you attend a specific training. In these cases of farm directed professional improvement, we will cover the cost of your attending the event, and also pay you an eight hour day’s pay for each day spent at the training.”

<b>No.</b> 8.10 (80)	<b>Working Conditions</b> Which of the following describes how the farm manages nuisance activity? (Mark all that apply.)
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Resource: CIS 814 Cull and Waste Potato Management at

[www.extension.uidaho.edu/publishing/pdf/CIS/CIS0814.pdf](http://www.extension.uidaho.edu/publishing/pdf/CIS/CIS0814.pdf) for more information.

<b>No.</b> <b>10.1</b> <b>(88)</b>	<b>Economic Sustainability</b> Farm has management plans in place that address the following. (Mark all that apply.)
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Resource on succession planning:

- <https://extension.umn.edu/business/transfer-and-estate-planning>

<b>No.</b> <b>11.3</b> <b>(91)</b>	<b>Water Conservation and Quality</b> If you answered yes to the previous question, explain what practices you are using.
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Common programs include:

- Low flow toilets and showerheads
- Waterless urinals
- Rainwater collection systems
- Grey-water recycling systems
- Routinely check faucets and pipes for leaks
- Planted drought resistant trees, shrubs and lawns around offices and/or worker housing

This question does not refer to water conservation related to irrigation. The Environmental Protection Agency sponsors a program (WaterSense) that labels water-efficient products and serves as a resource for water conservation (<https://www.epa.gov/watersense>).

<b>No.</b> 11.5 (93)	<b>Water Conservation and Quality</b> Irrigation records are kept, and farm monitors rainfall received.
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Resources for Water Measurement:

- <http://irrigation.wsu.edu/Content/Select-Calculators.php>

Resources for Recording Precipitation: AgWeatherNet (<http://www.weather.wsu.edu/>) provides easy access to weather data (including precipitation) from a network of weather stations in Washington and some in northern Oregon. Click on “Calculators” for rain totals for a given period of time at any of their 177 automated stations. Agrimet (<https://www.usbr.gov/pn/agrimet/>) is a similar resource with weather stations throughout the Pacific Northwest (including Idaho, Oregon, and Washington). Click on “Historical Weather Data” and then the “Historical Archive (Daily) Access” to calculate precipitation totals.

<b>No.</b> 11.6 (94)	<b>Water Conservation and Quality</b> Irrigation system maintenance is performed at system startup and repaired/adjusted as needed.
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- Evaluate irrigation system performance and improve uniformity of water application before planting the crop. Common practices include checking nozzles every year and replacing broken ones; measuring water output with catch cans.

Resource: Irrigation Uniformity:

[https://cdm17254.contentdm.oclc.org/utils/getfile/collection/ui\\_ep/id/25222/filename/uiext25222.pdf](https://cdm17254.contentdm.oclc.org/utils/getfile/collection/ui_ep/id/25222/filename/uiext25222.pdf).

Extension bulletin includes information on how to evaluate the water output from center pivot, linear move, and wheel line irrigation systems and how to maintain good performance.

<b>No.</b> 11.7 (95)	<b>Water Conservation and Quality</b> Which of the following describe how irrigation is scheduled? (Mark all that apply.)
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Evapotranspiration estimates are available online from Agrimet (Pacific Northwest States) (<https://www.usbr.gov/pn/agrimet/>) by clicking on “Crop Water Use”, or from AgWeatherNet (WA and northern OR) (<http://weather.wsu.edu/>) by clicking on “Calculators” and selecting the ET Table.

<b>No.</b> 12.2 (100)	<b>Soil Conservation and Quality</b> Which of the following practices describe the farm's strategy to monitor and minimize soil compaction? (Mark all that apply.)
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Compaction monitoring with a testing device (compaction rod or meter) within the past year on one or more fields where compaction has been suspected. A penetrometer is a common device for use, see guide: <http://extension.psu.edu/plants/crops/soil-management/soil-compaction/diagnosing-soil-compaction-using-a-penetrometer>

<b>No.</b> 12.4 (102)	<b>Soil Conservation and Quality</b> Advanced soil testing methods (excluding soil pH and nutrients) are utilized to monitor soil quality and health. Examples include, organic material, soil bulk density, electrical conductivity, soil texture, infiltration rate, available water holding capacity, aggregate stability, surface hardness, soil biological activity/respiration, earthworm population, permanganate oxidizable carbon (POX-C) and autoclaved-citrate extractable (ACE) soil protein, etc. (Mark all that apply.)
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Additional resources:

- NRCS Maps: <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>
- NRCS Soil texture calculator: [https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/?cid=nrcs142p2\\_054167](https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/?cid=nrcs142p2_054167)
- Infiltration rate can be tested as described: [https://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs142p2\\_052494.pdf](https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052494.pdf)

<b>No.</b> <b>13.2</b> <b>(104)</b>	<b>Biodiversity</b> Sensitive areas (e. g. aquifers, surface water, wetlands, endangered/threatened species habitat, roadways, residences, wells, etc.) are monitored at least annually and measures are in place to protect them.
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- Common practices for protection from soil erosion could include:
  - Creating banks to prevent water from running off into sensitive areas.
  - Fence areas or post “No Trespassing” signs to prevent vehicles from entering and causing erosion or disruption to sensitive areas.
- Common practices to protect breeding areas:
  - Maintain undeveloped areas as reserves for animals and native plant species.
  - Filter strips (areas of vegetation between disturbed farmland and environmentally sensitive areas).

<b>No.</b> <b>13.4</b> <b>(106)</b>	<b>Biodiversity</b> Mark all of the following that apply to the farm's written plan to manage native species.
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- A list of some native species in Idaho can be found at <https://idfg.idaho.gov/species/taxa>, Oregon at [www.dfw.state.or.us/wildlife/diversity/species/index.asp](http://www.dfw.state.or.us/wildlife/diversity/species/index.asp), Washington at <https://wdfw.wa.gov/species-habitats>.

Additional resources:

- Visit your local USDA Farm Service Agency county office (<http://offices.usda.gov>) and ask about the Conservation Reserve Program (CRP), or go to [www.fsa.usda.gov/crp](http://www.fsa.usda.gov/crp) for more information.

<b>No.</b> 13.6 (108)	<b>Biodiversity</b> Farm identifies invasive plant species and puts measures in place to avoid their presence and spread.
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Additional resources:

- Idaho – <http://invasivespecies.idaho.gov/noxious-weed-program>
- Oregon – <http://www.oregon.gov/ODA/programs/Weeds/Pages/AboutWeeds.aspx>
- Washington - <http://www.nwcb.wa.gov>
- University of Idaho CIS bulletin 1180: ‘Cleaning and Disinfecting Potato Equipment and Storage Facilities’ at <https://www.cals.uidaho.edu/edcomm/pdf/CIS/CIS1180.pdf>

<b>No.</b> 15.1 (113)	<b>Pollinator Protection</b> Which of the following actions does the farm take to enhance pollinator abundance and species diversity? (Mark all that apply.)
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Additional resources:

- Idaho Pollinator Protection Plan: <https://agri.idaho.gov/main/wp-content/uploads/2018/06/Idaho-Pollinator-Protection-Plan-1-17.pdf>
- How to reduce bee poisoning from pesticides: <https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/pnw591.pdf>
- EPA pollinator risk assessment guidance: <https://www.epa.gov/pollinator-protection/pollinator-risk-assessment-guidance>



<b>No.</b> 16.1 (114)	<b>Energy Conservation</b> Which of the following actions are taken to conserve energy on the farm? (Mark all that apply.)
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Additional resources:

- On-farm Energy Initiative:  
<https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/financial/equip/?cid=stelprdb1046252>

<b>No.</b> 16.3 (116)	<b>Energy Conservation</b> At least once during the past three years, farm has used or participated in the Cool Farm Tool, FieldPrint Calculator or other software tools to assess contribution to greenhouse gas production.
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Greenhouse gas assessments can be calculated from several on-line software tools. Examples include:

- CoolFarm Tool (<https://coolfarmtool.org/>)
- FieldPrint Calculator (<https://fieldtomarket.org/>)
- Farm Carbon Calculator (<https://farmcarbontoolkit.org.uk/carbon-calculator>)
- COMET-Farm (<http://www.comet2.colostate.edu/>)

<b>No.</b> 17.2 (118)	<b>Waste</b> Which of the following best describes the farm's approach to burning vegetation? (Choose the single best answer.)
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- Burning ditch banks is described by regional canal companies as a routine and standard practice.
- Check local regulations as well and cite those.
  - Washington Department of Ecology Outdoor Agricultural Burning  
<https://ecology.wa.gov/Air-Climate/Air-quality/Smoke-fire/Agricultural-burning>
  - Idaho Department of Environmental Quality  
<http://www.deq.idaho.gov/air-quality/burning/crop-residue-burning/>
  - Oregon Department of Agriculture Burning  
<http://www.oregon.gov/oda/programs/NaturalResources/Pages/Burning.aspx>

<b>No.</b> 17.4 (120)	<b>Waste</b> To protect surface and groundwater from direct and indirect pollution, farm manages waste water (e.g., tail-water, potato wash water) according to all applicable federal, state/provincial and local regulations and requirements.
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Compliance with local canal company or irrigation district recommendations for surface runoff.

- If you are chemigating/fertigating, describe how the farm follows regulations related to use of backflow prevention assemblies to prevent contamination.
- If you wash potatoes prior to hauling, common practice would include not discharging the water, but rather pumping it back into a retaining pond.
- Additional resources:
  - Washington State Department of Ecology: <https://ecology.wa.gov/>
  - Idaho Department of Environmental Quality  
<http://www.deq.idaho.gov/laws-rules-etc/deq-guidance/>
  - Idaho State Department of Agriculture: [http:// www.agri.idaho.gov/](http://www.agri.idaho.gov/)