



Best Management Practices

Integrated Pest Management Standards Checklist for Quality Potatoes

Grower Name _____

Address _____

City _____

State _____

Zip _____

Email Address _____

Total Potato Acres _____

Field/Farm	1	2	3	4
Field/Farm Identity				
Variety				
Acres				

Acknowledgements

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NRCS Conservation Security Program Note

The NRCS is implementing the Conservation Security Program (CSP) on a rotating schedule with watersheds throughout the state. **Practices that might be required to participate in the CSP have been marked with a “C”. Enhanced practices that could help a producer receive higher payments have been marked with an “E”.** The CSP requires basic practices to be in place for *two years* prior to sign-up. We encourage growers to seriously consider implementing practices now that will prepare your farm for CSP eligibility when the sign-up comes to your area. Your local NRCS office has more information specific to your watershed.

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Scouting

1a What method of scouting did you most commonly use? (*Indicate only one*)

		Points	1	2	3	4
E¹	Weekly scouting utilizing GPS technology and field mapping	5 points				
E	Weekly scouting by crop scouts and use of remote sensing following specific patterns along pivot irrigation tracks, along field borders and in the interior of the field	4 points				
E	Weekly scouting by crop scouts focused mostly on looking for potential hot spots and spot-checking where problems have occurred in the past	3 points				
	Informal observations during routine farming operations (e.g., while spraying or while going out to check irrigation equipment)	1 point				
	Informal observations of what was happening on the edge of the field	0 points				
Point total for question 1a						

E¹ = Enhanced activities for conservation security program, **NOT** required to meet minimum eligibility.

1b Was your scouting done by an IPM trained person, either through the CCA, University of Idaho and/or ISDA programs?

		Points	1	2	3	4
E	Yes	4 points				
	No	0 points				
Point total for question 1b						

1c When was the field scouted for pests? (*Indicate all that apply*)

		Points	1	2	3	4
E	Prior crop for weeds	1 point				
E	Between crops for weeds, wireworms and nematodes	1 point				
E	At preplant for weeds and seed selection	1 point				
E	At planting for weeds	1 point				
E	At crop emergence for weeds, stand emergence, Colorado potato beetle, late blight and early blight	1 point				
E	At vegetative growth for weeds, Colorado potato beetle, late blight, early blight, and aphids	1 point				
E	During tuber growth for weeds, Colorado potato beetle, late blight, early blight, and aphids	1 point				
E	At harvest for weeds and late blight	1 point				
Point total for question 1c						

1d Why did you scout? (*Indicate all that apply*)

		Points	1	2	3	4
E	To determine when levels of a pest in a field reached or exceeded thresholds	2 points				
E	To reduce the amount of pesticides used in order to minimize environmental impact. <i>Describe how you reduced the amount of pesticide used:</i>	2 points				
E	To check on the effectiveness of a pest control measure you applied	1 point				
E	In response to a local or recent pest report you heard or read about	1 point				
E	To monitor areas of the fields where you knew pests were already a problem	1 point				
E	To monitor water and fertility management for good plant health	1 point				
Point total for question 1d						

1e Which of the following best represents how you or your farm manager kept track of the scouting information collected on this field? (*Indicate only one*)

		Points	1	2	3	4
E	A hand-held electronic device was used to record field scouting data for mapping purposes	5 points				
E	Scouting records were analyzed by moving them onto a field map to more effectively identify "hot spots" and observe general patterns of change within the field	4 points				
E	Written records were kept in a file so changes in pest pressure could be tracked over time for this field	2 points				
	No written or electronic records were kept for scouting reports on this field	-1 point				
Point total for question 1e						

1f Bonus Did you generate geo-referenced images of pest populations to identify "hot spots" within fields to keep on file for long-term comparisons of pest populations?

		Points	1	2	3	4
E	Yes	5 points				
	No	0 points				
Point total for question 1f						

Scouting Total	1	2	3	4
Add question totals (1a – 1f) to find the Scouting section total				

Scouting Comments

Information Sources

2a Did you have access to weather data for this field (e.g., pest alerts or Agrimet)?
(Indicate all that apply)

		Points	1	2	3	4
	Wind data	1 point				
	Degree days _____ Source	1 point				
	Rainfall _____ Source	1 point				
	Did not have access to weather data	0 points				
Point total for question 2a						

2b Did you use weather data (e.g., degree days, rainfall, etc.) in your management decision for any of the following? (Indicate all that apply)

		Points	1	2	3	4
E	Diseases	2 points				
E	Irrigation	2 points				
E	Weeds	1 point				
E	Insects	1 point				
	Did not use weather data	-1 point				
Point total for question 2b						

2c Did you attend the University of Idaho Potato Conference meetings?
(Indicate only one)

		Points	1	2	3	4
	Yes, and I incorporated specific practices during the growing season. <i>Provide specific example:</i>	3 points				
	Yes	2 points				
	No	-1 point				
Point total for question 2c						

2d In the past year, did you or your farm manager attend any university (other than the UI Potato Conference), private consultant field days, or educational meetings where research information was presented with regards to potato crop management?

		Points	1	2	3	4
	Yes – 1 point for each meeting, 5 point max.	1-5 point(s)				
	No	-1 point				
Point total for question 2d						

2e Did you utilize any information from other sources? (*Indicate all that apply*)

		Points	1	2	3	4
E	Private research reports, <i>list:</i>	1 point				
E	University publications, <i>list:</i>	1 point				
E	Farm publications, <i>list:</i>	1 point				
E	Internet pest alerts, <i>list:</i>	1 point				
E	Other, <i>list:</i>	1 point				
Point total for question 2e						

2f Bonus Have you conducted on-farm research in collaboration with the University of Idaho, private research and consulting companies, or farm chemical companies?

		Points	1	2	3	4
	Yes	5 points				
	No	0 points				
Point total for question 2f						

Information Total	1	2	3	4
Add question totals (2a – 2f) to find the Information section total				

Information Sources Comments

Pest Management

3a During this growing season, did you avoid using a pesticide to control a pest because of any of the following? *(Indicate all that apply)*

		Points	1	2	3	4
E	You thought that factors such as beneficial species or weather would be able to control the pests naturally	3 points				
E	The control period of the pest was nearly over and the effectiveness of the control measure may have exceeded the amount of return gained by controlling the pest	2 points				
E	You did not think the pest was damaging the crop	2 points				
Point total for question 3a						

3b This field was planted away from previous year's potato fields in order to minimize pest pressures by: *(Indicate only one)*

		Points	1	2	3	4
E	A large distance (greater than 1/2 mile) between previous and current year's potato fields	5 points				
E	A medium distance (greater than 1/4 mile) between previous and current year's potato fields	3 points				
	A short distance (less than 1/4 mile or adjacent to previous year's potatoes)	1 point				
Point total for question 3b						

3c As a self evaluation, I would characterize my principle or main pest control strategy as: *(Indicate only one)*

		Points	1	2	3	4
E	A cropping system that primarily uses multiple, non-chemical practices (e.g., crop rotation, resistant varieties, cultivation, biological control, etc.). Pesticides are rarely used, and only in response to pest problems diagnosed through scouting or because the pest is uncontrolled using a non-chemical practice	5 points				
E	A cropping system based on a combination of non-chemical practices (e.g., crop rotation, resistant varieties, cultivation, biological control, etc.) and chemical control based on scouting is routinely used	3 points				
	A cropping system that rarely uses non-chemical practices to control pests. Pesticide applications are the primary means to control pests and are based on infrequent scouting	1 point				
	Pests are controlled by pesticide applications based on calendar or stage of plant growth	-1 point				
Point total for question 3c						

3d Was the person who supervised pesticide applications on your farm a certified applicator, either private or professional?

		Points	1	2	3	4
C²	Yes	3 points				
	No	-1 point				
Point total for question 3d						

C² = Minimum requirements for NRCS Conservation Security Program (CSP). Any activity with a “C” may qualify as a minimum requirement for the CSP.

3e Was the application equipment calibrated? *(Indicate only one)*

		Points	1	2	3	4
C	Regularly during the season	3 point				
C	Before the season	1 point				
	Not at all	-2 points				
Point total for question 3e						

3f Did you keep accurate and complete pesticide application records according to the USDA Recordkeeping Requirements for Private Applicators?

		Points	1	2	3	4
C	Yes Required items: Brand Name/Product Name EPA Registration Number Total Amount of Pesticide Used Date of Application Description/Location of Treated Area Crop, Commodity, or Stored Product Size of Area Treated Name of Certified Applicator Certification Number Complete Record: within 14 days of application; keep 2 years	3 points				
	No	-1 point				
Point total for question 3f						

3g Bonus Do you reduce the risk of off-site transport (including drift, runoff, volatilization, wind erosion) of pesticides by applying at proper times (based on weather reports, at appropriate crop stage, etc.), rates and placement (need for banding, incorporation, etc.)?

		Points	1	2	3	4
C	Yes	5 points				
	No	0 points				
Point total for question 3g						

Pest Management Total	1	2	3	4
Add question totals (3a – 3g) to find the Pest section total				

Pest Management Comments

Nematode Management

The following practices are recommended to prevent the spread and buildup of the potato cyst nematode as well as other damaging nematodes or soil borne pests.

4a This field is planted: *(Indicate only one)*

		Points	1	2	3	4
E	On a four or more year rotation	7 points				
E	On a three year rotation	3 points				
	On a two out of five year rotation	1 point				
	This field had potatoes last year	- 5 points				
Point total for question 4a						

4b Did you take steps (e.g., sanitation of equipment and trucks before moving between fields and farms) to prevent movement of soil between fields and farms to control the spread of soil-borne pests such as the Potato Cyst Nematode?

		Points	1	2	3	4
	Yes	3 points				
	No	-1 point				
Point total for question 4b						

4c Did you take steps to prevent the spread of tare dirt and/or avoid placing it in areas where it could be spread to farm land?

		Points	1	2	3	4
	Yes	3 points				
	No	-1 point				
Point total for question 4c						

4d Did you place (or already have) trees, sod barriers or sod strips between fields and along highways?

		Points	1	2	3	4
	Yes	3 points				
	No	-1 point				
Point total for question 4d						

4e Did you maintain crop residue or a cover crop on your field to prevent soil movement?

		Points	1	2	3	4
	Yes	3 points				
	No	-1 point				
Point total for question 4e						

4f Did you take steps to ensure that all commercial vehicles (custom applicators, delivery trucks, utility companies, fertilizer companies, etc.) were free of soil and properly sanitized before entering your fields?

		Points	1	2	3	4
	Yes	3 points				
	No	-1 point				
Point total for question 4f						

4g Did you provide the needed equipment and supplies to conduct proper cleaning of field equipment?

		Points	1	2	3	4
	Yes	3 points				
	No	-1 point				
Point total for question 4g						

4h Did you take steps to clean all machinery, trucks, and other equipment when going from field to field?

		Points	1	2	3	4
	Yes	3 points				
	No	-1 point				
Point total for question 4h						

4i Did you take steps to inform people in your operations of the seriousness of certain pests (e.g., PCN) and follow up to ensure that they were following all precautions?

		Points	1	2	3	4
	Yes	3 points				
	No	-1 point				
Point total for question 4i						

4j Before applying pesticides to control nematodes, did you sample soil for plant parasitic nematodes and use any of the following treatment thresholds in your management decision?

The thresholds for northern root knot nematode:

- a) If 10-50 nematodes per 500 cc of soil were detected and the previous crop was NOT alfalfa or clover, treat with a non-fumigant
- b) If more than 50 nematodes per 500 cc of soil were detected and the previous crop was NOT alfalfa or clover, treat with a fumigant
- c) If the previous crop was alfalfa or clover—fumigate (no counts necessary)

The thresholds for Columbia root-knot nematode:

- a) If any nematodes are detected, use a fumigant

The thresholds for root lesion nematode

- a) If 1 nematode is found and the field has a history of early die, treat with a non-fumigant or a fumigant
- b) If 2000 nematodes per 500 cc of soil and the field has NO history of early die, treat with a non-fumigant

The thresholds for *pratylenchus neglectus*

- a) If 1 nematode is found and the field has a history of early die, treat with a non-fumigant or a fumigant
- b) If 2000 nematodes per 500 cc of soil and the field has NO history of early die, treat with a non-fumigant

The thresholds for *pratylenchus penetrans*

- a) If the field has a history of early die, and 1 nematode is found, treat with a non-fumigant or fumigant
- b) If the field has NO history of early die, and 100 nematodes per 500 cc soil are found, treat with a non-fumigant

The thresholds for stubby root nematode

- a) If the field has a history of corky ring spot, and 1 nematode is found, treat with a non-fumigant or fumigant

Examples of non-fumigant nematicides are; Temik, Mocap, and Vydate.

		Points	1	2	3	4
E	Yes	5 points				
	No	0 points				
Point total for question 4j						

4k Bonus Did you participate in a PCN survey?

		Points	1	2	3	4
E	Yes	5 points				
	No	0 points				
Point total for question 4k						

Nematode Management Total	1	2	3	4
Add question totals (4a – 4k) to find the Nematode section total				

Nematode Management Comments

Weed Management

5a Which of the following practices did you do prior to planting?
(Indicate all that apply)

		Points	1	2	3	4
E	Selected herbicide chemistries based on mode of action in rotational crops to avoid potential resistance in potatoes	3 points				
E	Controlled a known problem weed in previous years' crops (e.g., controlled nightshade in the rotational crops). <i>Please give examples:</i>	3 points				
E	Field cultivated or chisel plowed after harvest last fall to control weeds and volunteer crops	2 points				
E	Used post harvest irrigation to promote germination of volunteer grains and weed seed	2 points				
E	Used mowing or tillage equipment to control weeds on the field edges or adjacent areas to reduce the chance of weeds migrating on this field	2 points				
E	Used composted manure – when applying manure	1 point				
E	Planted certified seed crops in the rotational crops	2 point				
Point total for question 5a						

5b Which of the following practices were used during this growing season?
(Indicate all that apply)

		Points	1	2	3	4
E	Used historical field records to make herbicide selection and rates	3 points				
E	Spot sprayed or cultivated for weeds if scouting reports indicated there was a weedy spot within the field	3 points				
E	Used mechanical methods (e.g., hilling, cultivations, rotary hoeing, mechanical weeder) for weed management	3 points				
E	Scouted potatoes for weeds shortly after planting in a systematic pattern and continued each week until control options were no longer available	3 points				
E	Installed screens on the irrigation system when the water is coming from an irrigation canal	2 points				
E	Kept field records on weed density and species	2 points				
E	Kept field records on herbicides and mode of action	2 points				
E	Cleaned machinery when moving from field to field, to lessen the chance of spreading weeds	2 points				
E	Used glyphosate/gramoxone as a burn-down for early weed germination such as wild oat and alfalfa	1 point				
Point total for question 5b						

5c Bonus Did you use a green manure crop?

		Points	1	2	3	4
E	Yes <i>What green manure crop(s)?</i>	5 points				
	No	0 points				
Point total for question 5c						

Weed Management Total	1	2	3	4
Add question totals (5a – 5c) to find the Weed section total				

Weed Management Comments

Insect Management

6a Which of the following practices did you use to manage insects prior to planting this year's crop? *(Indicate all that apply)*

		Points	1	2	3	4
E	Rotated chemical classes for a resistance management practice	4 points				
E	Sampled soil or used bait stations to determine wireworm populations	4 points				
E	Avoided planting potatoes in fields adjacent to previous year's potatoes	1 point				
Point total for question 6a						

6b Which of the following practices did you use to manage insects during the growing season? *(Indicate all that apply)*

		Points	1	2	3	4
E	Selected less risky insecticides when insecticides were needed (i.e., abamectin, Bt, imidacloprid (Admire, Genesis, Gaucho, Provado), pymetrozine (Fulfill), spinosad (Success, Entrust), thiamethoxam (Platinum, Actara), Cryolite (Kryocide))	4 points				
E	Rotated chemical classes for a resistance management practice	4 points				
E	Scouted potatoes for insect pests at least weekly throughout the growing season in a systematic pattern	2 points				
E	Kept field records on the density of each insect pest for long-term comparisons	2 points				
E	Managed the health of the crop to enhance its ability to withstand a degree of pest pressure	1 point				
E	Avoided spraying for insects just before vine kill or harvest	1 point				
Point total for question 6b						

6c Which of the following practices were used to control Colorado potato beetle?
(Indicate all that apply)

		Points	1	2	3	4
E	Colorado potato beetle control was targeted at first generation larvae and treated when 2 nd instar larvae were present at damaging levels (confirmed by scouting)	3 points				
E	Spot treated for Colorado potato beetle when infestations were localized on field edges	3 points				
E	Applied microbial insecticides or Kryocide to control beetles or caterpillars	3 points				
E	Scouted for Colorado potato beetle using plant counts to determine the number of adults and larvae during growing season	2 points				
E	Controlled potato volunteers and nightshade	2 points				
Point total for question 6c						

6d Which of the following practices were used for green peach aphid (GPA) control? (Indicate all that apply)

		Points	1	2	3	4
E	GPA populations were scouted using leaf samples and economic thresholds were used in making pest management decisions (spray at GPA detection)	3 points				
E	Beneficial populations (predators, parasitoids) were incorporated into treatment decisions for aphids	3 points				
E	Fields were scouted every 3-4 days and evaluated for new infestations of wingless aphids	2 points				
E	Controlled overwintering aphids on nearby Prunus spp. (e.g., apricot, peach)	1 point				
E	Planted a potato variety that does not express tuber net necrosis	1 point				
Point total for question 6d						

6e Which of the following practices were used for Potato Tuberworm (PTW) control? *(Indicate all that apply)*

		Points	1	2	3	4
E	Pheromone traps were deployed to help detect adult tuber moths, and traps were checked weekly.	3 points				
E	Planted certified seed from areas where PTW has not been found.	3 points				
	Rendered cull piles non-viable (e.g., remnants of last year's crop, waste from cutting, waste from storage) prior to emergence to prevent the spread of disease	3 points				
	Managed volunteer potatoes in non-potato fields during the growing season	2 points				
Point total for question 6e						

Potato Tuberworm Best Management Practices

If a tuber moth is detected in a pheromone trap, growers should work closely with the Idaho State Department of Agriculture and University of Idaho to initiate a proper management program, which could include the following steps:

1. Screening the potato plants for the presence of larvae infestation
2. Keeping the soil moist at and after vine kill to prevent soil cracking
3. Reduce the length of time between desiccation and harvest
4. Roll or cover hills with soil to reduce exposing tubers to the surface
5. Insecticide application after vine kill
6. Proper pesticide timing and application

(source: Biology and Management of the Potato Tuberworm in the Pacific Northwest, April 2007)

6f What additional IPM tactics did you use for insect management? *(Indicate all that apply)*

		Points	1	2	3	4
E	Harvested potatoes were inspected to determine level of wireworm infestation and to look for tuberworms	2 points				
E	Armyworms, loopers and other insects were not controlled unless they surpassed the economic threshold (10% to 15% defoliation)	1 point				
Point total for question 6f						

6g Bonus Did you manage the habitat in or around the field to enhance populations of beneficial insects?

		Points	1	2	3	4
E	Yes, <i>describe:</i>	5 points				
	No	0 points				
Point total for question 6g						

6h Bonus Did you release beneficial insects in this field during this growing season? (*Indicate only one*)

		Points	1	2	3	4
E	Yes <i>Which beneficial?</i> _____ <i>For what pest?</i> _____	5 points				
	No	0 points				
Point total for question 6h						

Insect Management Total

	1	2	3	4
Add question totals (6a – 6h) to find the Insect section total				

Insect Management Section Comments

Disease Management

7a Which of the following practices did you use, prior to planting this year's potato crop, to lower the potential for potato disease in the field? *(Indicate all that apply)*

		Points	1	2	3	4
E	Rendered cull piles non-viable (e.g., remnants of last year's crop, waste from cutting, waste from storage) prior to emergence to prevent the spread of disease	3 points				
E	Used a three-year or longer crop rotation	3 points				
E	Changed the crop rotation on this field to lower the probability of certain soil-borne diseases occurring (e.g., plant a crop that decreases nematode populations)	3 points				
E	Used green manures	2 points				
E	Warmed seed to recommended temperatures before cutting and planting	2 points				
E	Waited until soil temperatures were at least 48 degrees F and were increasing before planting the seed	2 points				
E	Selected resistant or tolerant varieties for the suppression of plant disease (e.g. plant a scab resistant variety in a field where there has been a history of scab)	2 points				
E	Controlled volunteer potatoes as hosts of plant disease	2 points				
E	Controlled weed hosts of plant diseases (e.g., hairy nightshade as a host for late blight)	2 points				
Point total for question 7a						

7b Did you plant certified seed?

		Points	1	2	3	4
E	Yes	4 points				
	No	-1 point				
Point total for question 7b						

7c Which of the following seed sanitation practices did you use?
(Indicate all that apply)

		Points	1	2	3	4
E	Cleaned and disinfected seed cutting equipment before cutting each new seed lot	2 points				
E	Disinfected conveyers and other seed handling equipment	2 points				
Point total for question 7c						

7d Which of the following practices did you use to control diseases during the growing season? *(Indicate all that apply)*

		Points	1	2	3	4
E	Managed irrigation to minimize conditions favorable to disease	3 points				
E	Monitored plant health and disease spread in the field with remote sensing	3 points				
E	Scouted potatoes weekly for disease in a systematic pattern throughout the growing season, or for late blight, scouted areas that are more conducive to disease development such as in areas that remain wet	3 points				
E	Continued to render cull piles non-viable, including rock piles with potatoes, scrapings of storage, and cutting remnants on the farm prior to potato emergence	2 points				
E	Adjusted equipment to avoid bruising potatoes during planting and harvesting	2 points				
E	Managed fertility to produce healthy plants to resist disease (Nitrogen and Phosphorus)	2 points				
E	Managed volunteer potatoes in non-potato fields during the growing season	2 points				
E	When late blight was present, managed disease until leaves and stems were completely dead	2 points				
E	Kept field records on fungicides and mode of action	2 points				
E	Used records to make fungicide selection and rates	2 points				

E	Destroyed or eliminated plants or area in a field where late blight was detected	2 points				
E	Utilized pest alerts (for forecasting) to initiate fungicide sprays for late blight	1 point				
E	Kept field records on disease occurrence	1 point				
Point total for question 7d						

7e Bonus Did you plant a cover crop specifically for the suppression of Verticillium or plant parasitic nematodes?

		Points	1	2	3	4
E	Yes <i>List Cover Crop:</i>	5 points				
	No	0 points				
Point total for question 7e						

7f Bonus Did you apply a biological control agent to reduce the chance of disease (e.g., Serenade, compost tea, Messenger), and did you include a control strip to test the effectiveness of the biological control agent?

		Points	1	2	3	4
E	Yes <i>Biocontrol Agent</i> _____ <i>for</i> _____	5 points				
	No	0 points				
Point total for question 7f						

7g Bonus Did you grid sample this field for Verticillium and nematodes in order to apply pesticides site specific?

		Points	1	2	3	4
E	Yes	5 points				
	No	0 points				
Point total for question 7g						

7h Bonus Did you consult your certified seed grower to determine growing conditions and/or disease concerns?

		Points	1	2	3	4
E	Yes	3 points				
	No	0 points				
Point total for question 7h						

Disease Management Total	1	2	3	4
Add question totals (7a – 7h) to find the Disease section total				

Disease Management Comments

Soil and Water Quality

8a Did you take soil samples on this field to a NAPT-PAP (North American Proficiency Testing) Lab in preparation for this growing season?
(Indicate only one)

		Points	1	2	3	4
C	Yes	3 points				
	No	0 points				
Point total for question 8a						

8b Which of the following practices did you use as part of your nutrient management strategy? (Indicate all that apply)

		Points	1	2	3	4
E	Applied nutrients following University of Idaho fertilizer guides \pm 10%, including soil testing recommendations as prescribed in the guides	3 points				
E	Applied nutrients in multiple applications according to University of Idaho recommendations \pm 10%	2 points				
E	Used plant tissue sampling to fine-tune nutrient requirements and/or timing of application	2 points				
C	Applied nutrients based on a nutrient budget that considers ALL sources of nutrients, including legume credits, organic matter, animal manure, crop residues, and irrigation water	2 points				
C	Kept soil test, petiole test, and nutrient application records	2 points				
	Soil tests and nitrogen applications were done in the spring	2 points				
Point total for question 8b						

8c Which of the following options best describes your irrigation management strategy? (*Indicate only one*)

		Points	1	2	3	4
C	Monitor moisture using a granular matrix sensor (e.g. Water Mark ®) device that goes below the potato root zone	4 points				
C	Irrigation based on field scheduling tools such as evapotranspiration and field verification to reduce risk of leaching pesticides and fertilizer below the root zone, while still meeting the water demands of the crop	3 points				
	Irrigation schedules were adjusted according to transpiration and rainfall rates for the area, but field information was not collected	2 points				
	Irrigation was based on soil and crop moisture need as determined by only using the feel method	2 points				
Point total for question 8c						

8d Which components of irrigation system management did you evaluate? (*Indicate all that apply*)

		Points	1	2	3	4
	Checked pumping efficiency	3 points				
	Checked water distribution accuracy (e.g. infrared photography)	3 points				
	Checked to be sure fertigation equipment was properly maintained and calibrated (including back-flow device or check valve)	3 points				
	Checked nozzles for wear	1 point				
	Checked gaskets	1 point				
	Checked for leaks	1 point				
Point total for question 8d						

8e Did you maintain and/or implement any practices to prevent wind and water erosion? (*Indicate all that apply*)

		Points	1	2	3	4
C	Used reservoir tillage (dammer-diker ®)	2 points				
C	Small grains residue was left	2 points				
C	Used windbreaks or other vegetative wind barriers	2 points				
C	Used irrigation (surface wetting)	2 points				
C	Planted cover crops	2 points				
C	Used spring tillage, not fall tillage	2 points				
C	Used mulches (applied manure and/or compost)	2 points				
	More than half of the stubble was baled and removed	-1 point				
	Used a moldboard plow or disc	-2 points				
	Burned stubble	-3 points				
Point total for question 8e						

8f Which of the following practices did you use to build your soil organic matter? (*Indicate all that apply*)

		Points	1	2	3	4
C	Utilized a long-term crop rotation with sufficient crop residue	4 points				
C	Incorporated a cover crop or green manure	3 points				
C	During the previous fall and spring (post harvest), incorporated an organic amendment <i>List types:</i>	2 points				
C	Utilized practices in the non-potato years to increase soil organic matter (such as planting deep rooted alfalfa) <i>List practices:</i>	2 points				
Point total for question 8f						

8g Did you implement any practice to enhance wildlife or general biodiversity in and/or around your farm and/or privately owned lands (e.g., buffer zones, windbreaks, planting of corners for food and habitat)? *(Indicate all that apply)*

		Points	1	2	3	4
E	Use of buffer zones	2 points				
E	Use of windbreaks	2 points				
E	Planting of corners for wildlife food and habitat	2 points				
E	Use of CRP land	2 points				
E	Other (please describe)	2 points				
	Did nothing	-1 point				
Point total for question 8g						

8h Bonus Used practices to prevent or correct hardpan or compaction problems and to improve growth, root development, and efficiency of the crop.

		Points	1	2	3	4
C	Yes List Practices:	5 points				
	No	0 points				
Point total for question 8h						

8i Bonus Have you consulted with local NRCS to determine your Soil Condition Index?

		Points	1	2	3	4
C	Yes	5 points				
	No	0 points				
Point total for Question 8i						

Soil and Water Quality Total	1	2	3	4
Add question totals (8a – 8i) to find the Soil and Water section total				

Soil and Water Quality Comments

Storage

If potatoes are shipped to market immediately, do not complete this section (place an X in the total). If potatoes are stored at another location, check with the person responsible for storage and ask that person if they are going to implement the following storage questions. The following practices should be implemented during storage to ensure high quality, disease-free tubers. Since certification will occur prior to storage, this section assumes your normal storage practices.

9a Did you harvest when soil/tuber temperatures were above 45 degrees Fahrenheit but below 65 degrees Fahrenheit?

		Points	1	2	3	4
E	Yes	4 Points				
	No	-1 point				
Point total for question 9a						

9b Did you sort potatoes going into storage and avoid storing injured, diseased, or immature potatoes?

		Points	1	2	3	4
E	Yes	2 points				
	No	-1 point				
Point total for question 9b						

9c Which of the following practices are implemented to aid in good storage management? (*Indicate all that apply*)

		Points	1	2	3	4
E	Adjust temperatures, relative humidity and ventilation to ensure suberization during curing period (50- 55 degrees Fahrenheit, 90-95% RH)	3 points				
E	Adjust temperatures and relative humidity for most effective storage during holding period	3 points				
E	Increase temperatures to at least 45 degrees F prior to removal to avoid bruising	3 points				
E	Scout storage areas frequently, for hot spots, condensation problems, sprouting, general tuber quality, and proper temperature and humidity	5 points				
Point total for question 9c						

9d Do you examine the storage facility for late blight and other storage diseases and problems?

		Points	1	2	3	4
E	Yes, scouting is done	2 points				
E	If disease/problems are detected, the storage management involves adjustments in temperature, humidity, or airflow	2 points				
	Disease/problems are detected, but no adjustments to temperature, humidity or airflow are made	0 points				
	No, scouting is not done during storage	-1 point				
Point total for question 9d						

9e Bonus Have you or whoever is storing your potatoes experimented with alternatives (compared to CIPC) for sprout inhibition?
(Indicate all that apply)

		Points	1	2	3	4
E	I used MH-30 prior to storage	2 points				
E	Yes, I tried new compounds in storage (i.e., DIPN (Amplify), DMN (1,4-Sight), mint oils, clove oil).	2 points				
	No, I applied traditional compounds (CIPC)	0 points				
Point total for question 9e						

9f Bonus Do you use a biological product to control storage diseases (i.e., BioSave 10LP, Cloveoil, Serenade, Messenger, Potassium Sorbate)?

		Points	1	2	3	4
E	Yes	5 points				
	No	0 points				
Point total for question 9f						

Storage Total	1	2	3	4
Add question totals (9a – 9f) to find the Storage section total				

Storage Comments

Summary

Section	Points Available (per field)	Bonus Points Available (per field)	Total Score (per field)			
			1	2	3	4
Scouting	30	5				
Information Sources	22	5				
Pest Management	26	5				
Nematode Management	36	5				
Weed Management	36	5				
Insect Management	60	10				
Disease Management	56	18				
Soil and Water Quality	67	10				
Total without Storage	333	63				
Storage	22	9				
Total including Storage	355	72				