



Potato Evaluation

Career Development Event

Handbook

Purpose

The purpose of the Idaho FFA Potato Evaluation Career Development Event is to prepare students who plan to engage in the grading of potatoes, the raising of potatoes, or a related occupation as a career. Potato judging and grading events are used in instructing individuals in a better understanding and appreciation of the various grades and varieties of potatoes

Objectives

The Potato Evaluation Career Development Event provides the opportunity for the participant to:

- demonstrate his/her ability to give oral reasons on the placing of ten potatoes
- grade potatoes according to the U.S. grading standards
- rank plates of seed potatoes according to the grading standards.

Event Rules

- The team will be composed of four members.
- Eligible participants in the Idaho State Potato Judging Career Development Event must be active, dues- paid FFA members.
- It is highly recommended that participants wear FFA Official Dress for this event.
- Any participant in possession of an electronic device in the event area is subject to disqualification.
- All instructors must remain and help with the event until results are declared or their team shall be eliminated.
- Participants may **not** bring any printed or written material to the event.

Event Format

The event consists of grading 50 potatoes, giving oral reasons for the grading of 10 potatoes, and placing four classes of seed potatoes.

The CDE Coordinator is responsible for securing competent judges and overall organization and operation of the event. The CDE Coordinator should select competent judges. Industry professionals should be used whenever possible to officiate the CDE. Idaho State Department of Agriculture inspectors or horticulture inspectors should be used for grading officials wherever possible. Instructor committees may be used for seed judging officials. Other event personnel may include runners, tabulators, group leaders, and timekeepers.

Fifteen minutes shall be allowed for each class judged and 15 minutes for each 50 potatoes graded. A time limit of two minutes will be allowed for giving oral reasons. Students will be cut off at exactly two minutes.

CLASSES OR SECTIONS

SEED JUDGING

Seed judging shall consist of four classes, and at least one-half of the classes shall be Russet. Other classes shall be picked by the superintendent in charge from commercial varieties. No off varieties will be allowed in the judging classes. If two classes other than Russet are judged, they shall not be of the same variety. 4 classes @ 50 pts per class with cuts = 200 pts. Possible.

GRADING - WRITTEN

There will be 50 specimens selected by the judges and prepared for written grading. Liners will be eliminated if possible. Each potato will be numbered. They will be judged in the like manner by the judges. Grading will be U.S. #1, U.S. #2, and culls. Off varieties should be marked as culls.

GRADING - ORAL

Oral grading will consist of 10 potatoes graded orally in the presence of the official judge, with ten points allowed for each potato graded. A maximum of five points will be allowed for the grades and five points for the reasons given for placing the potatoes in that grade. The judge will give either zero or five points on grade and any figure between zero and five inclusive for reasons. A time limit of two minutes will be allowed for giving oral reasons.

Students will be cut off at exactly two minutes. Participants may **not** bring any printed or written material to the event.

POTATO BLEMISHES

Participants will identify 10 different potato blemishes from a list of 13 possible options. Photographs will be used to show the various blemishes. 10 blemishes @ 10 pts. Each = 100 pts. Possible.

Scoring

Activities	Individual Points	Team Points
Grading - Written	50	200
Grading – Oral	100	400
Blemish Identification	100	400
Seed Potatoes	200	800
Total Points	450	1800

TIEBREAKERS

If ties occur, the following events will be used in order to determine award recipients: 1. Oral Reasons 2. Blemish ID

Awards

Awards will be presented to individuals and/or teams based upon their rankings.

References

This list of references is not intended to be inclusive. Other sources may be utilized and teachers are encouraged to make use of the very best instructional materials available. The following list contains references that may prove helpful during event preparation.

- Potato Diseases: Common Scab of Potato (E2990) – Michigan State University
https://www.canr.msu.edu/resources/potato_diseases_common_scab_of_potato_e2990
- Remove Foreign Materials from Potatoes – University of Idaho
<https://www.potatogrower.com/uploads/10327.pdf>
- Judging Russet Potatoes – YouTube Video
https://www.youtube.com/watch?v=euYln4Qey_0
- U.S. Potato Reference Guide – Potatoes USA
https://potatogoodness.com/wp-content/uploads/Retail-Fresh-Guide-Example_English.pdf
- Potato Judging Flashcards – Quizlet
<https://quizlet.com/242198985/potato-judging-flash-cards/>
- USDA Potato Grades and Standards
<https://www.ams.usda.gov/grades-standards/potatoes-grades-and-standards>
- University of Idaho – Aberdeen Research and Extension Center – Potatoes
<https://www.uidaho.edu/cals/aberdeen-research-and-extension-center/potatoes>

SUGGESTIONS FOR DEVELOPING SKILL IN DETERMINING CORRECT GRADE

Definitions of Terms

1. **“Fairly well shaped”** means that the potato is not so pointed, dumbbell shaped, or otherwise ill-formed so that its appearance is materially affected.
2. **“Soft rot or wet breakdown”** means any soft, mushy, or leaky condition of the tissue, such as slimy rot, leak, or wet breakdown following injury or sunscald.
3. **“Damage”** means any injury or defect which materially detracts from the appearance of the individual potato or the general appearance of the potatoes in the container, or which cannot be removed without a loss of more than 5 percent of the total weight of the potato. Loss of outer skin (epidermis) shall not be considered as damage unless the skinned surface is materially affected by very dark discoloration. Any of the following defects or any combination of defects, the seriousness of which exceed the maximum allowed for any one defect, shall be considered as damage:
 - a. Dirt, when the general appearance of the potatoes in the container is more than slightly dirty or stained, or when individual potatoes are badly caked with dirt or badly stained; or other foreign matter which materially affects the appearance of the potatoes.
 - b. Second growth or growth cracks which have developed to such an extent as to materially affect the appearance of the individual potato or the general appearance of the potatoes in the container.
 - c. Air cracks which are deep, or shallow air cracks which materially affect the appearance of the individual potato or the general appearance of the potatoes in the container.
 - d. Shriveling, when the potato is more than moderately shriveled, spongy, or flabby.
 - e. Sprouting, when more than 10 percent of the potatoes have sprouts over $\frac{3}{4}$ " long.
 - f. Surface scab which covers an area of more than 5 percent of the surface of the potato in the aggregate.
 - g. Pitted scab which affects the appearance of the potato to a greater extent than the amount of surface scab permitted, or causes a loss of more than 5 percent of the total weight of the potato.
 - h. Rhizoctonia, when the general appearance of the potatoes in the container is materially affected or when individual potatoes are badly infected.
4. **“Diameter”** means the greatest dimension at right angles to the longitudinal axis. The long axis shall be used without regard to the position of the stem (Stolon).

5. **“Serious damage”** means any injury or defect which seriously detracts from the appearance of the individual potato or the general appearance of the potatoes in the container, or which cannot be removed without a loss of more than 10 percent of the total weight of the potato. Any one of the following defects or any combination of defects, the seriousness of which exceeds the maximum allowed for any one defect, shall be considered as serious damage:
- a. Dirt, when the general appearance of the potatoes in the container is seriously affected by tubers badly caked with dirt or other foreign matter which seriously affects the appearance of the potatoes.
 - b. “Cuts,” when both ends are clipped or when more than an estimated one fourth of the potato is cut away from one end or when the remaining portion of the clipped potato weighs less than 6 ounces. Other cuts which seriously affect the appearance of the individual potato or which cannot be removed without a loss of more than 10 percent of the total weight of the potato.
 - c. Shriveling, when the potato is excessively shriveled, spongy, or flabby.
6. **“Mature”** means that the outer skin (epidermis) does not loosen or “feather” readily during the ordinary methods of handling.
7. **“Bright”** means practically free from dirt or other foreign matter, and that the outer skin (epidermis) has the attractive color normal for the variety.
8. **“Well shaped”** means the normal shape for the variety and that the potato is not pointed, dumbbell shaped, excessively elongated, or otherwise ill-formed.
9. **“Injury”** means any defect which more than slightly affects the appearance of the individual potato or the general appearance of the potatoes in the container, or which cannot be removed without a loss of more than 2 percent of the total weight of the potato.

In developing skill on the part of the student in determining the grade of potatoes that are near the border line between grade No. 2 and a cull due to the percent of waste, it may be necessary to pare several specimens, weighing each specimen both before and after paring to determine percentage loss.

In potato grading contests, the individual potato will be graded as a unit and upon its merit. Decision must be made on waste from paring the potato as a whole rather than any scheme of carving the potato to enable grading up on the carved specimens. Students will be allowed to use a sizing instrument in class work only to determine whether the diameter meets the requirements. In using the sizing instrument, do not attempt to force the potatoes through the holes. A potato that drops through easily is under that size, while one that touches has the same diameter as the hole in sizing instruments and would be considered as meeting this requirement for the grade.

SUGGESTIONS FOR DEVELOPING SKILL IN GIVING ORAL REASONS

In giving oral reasons for grading a potato as “Grade No. 1,” reasons should include the size, shape, appearance, and waste due to defects or blemishes. But in stating reasons for grading as “Grade No. 2,” it is not necessary to mention shape or appearance, but the student should include the size and waste due to defects or blemishes. In giving reasons for grading as “Grade Cull” the size should not be included except when the specimen is under 1 ½ inches.

Frequently a student simply states “Grade No. 1” without giving any reason. The student in this case would be graded five points out of the possible ten points. Sometimes the student states “Grade No. 1 – meets all requirements.” The student’s grade on this would be five points for giving correct grade and two points for reasons, or a total of seven points out of the possible ten points.

SAMPLE OF CORRECT WAYS IN STATING REASONS

These reasons would score ten points each provided the grade and the reasons given were accurate.

1. Grade No. 1 – Sufficient size, and has no defects which will detract from the appearance or which will cause more than 5 percent waste.
2. Grade No. 2 – Sufficient size, and has shape defects which will cause more than 5 percent waste, but less than 10 percent waste. 3. Grade No. 2 – Sufficient size, slight touch of indistinct greening. No other defects producing as much as 10 percent waste.
4. Grade Cull – Less than 1 ½ inches in diameter.
5. Grade Cull – Growth cracks causing more than 10 percent waste.
6. Grade No. 2 – More than 1 ½ inches but less than 2 inches in diameter and has no defects that cause waste.
7. Grade Cull – One end of potato affected with soft rot.
8. Grade Cull – Second growth producing over 10 percent waste.
9. Grade No. 2 – Sufficient size, wire worm injury causing less than 10 percent waste.

POINTS ON A POTATO JUDGING CARD

- Freedom from disease
- Uniformity
- Trueness of variety type
- Freedom from mechanical or other injury

Potato Judging

Name: _____ Chapter: _____

Grade #1 = A, Grade #2 = B, Cull = C. Enter each grade in the appropriate number on the Exam section of the Scantron Sheet (front).

Number	Grade		
1	1 (A)	2 (B)	C (C)
2	1 (A)	2 (B)	C (C)
3	1 (A)	2 (B)	C (C)
4	1 (A)	2 (B)	C (C)
5	1 (A)	2 (B)	C (C)
6	1 (A)	2 (B)	C (C)
7	1 (A)	2 (B)	C (C)
8	1 (A)	2 (B)	C (C)
9	1 (A)	2 (B)	C (C)
10	1 (A)	2 (B)	C (C)
11	1 (A)	2 (B)	C (C)
12	1 (A)	2 (B)	C (C)
13	1 (A)	2 (B)	C (C)
14	1 (A)	2 (B)	C (C)
15	1 (A)	2 (B)	C (C)
16	1 (A)	2 (B)	C (C)
17	1 (A)	2 (B)	C (C)
18	1 (A)	2 (B)	C (C)
19	1 (A)	2 (B)	C (C)
20	1 (A)	2 (B)	C (C)
21	1 (A)	2 (B)	C (C)
22	1 (A)	2 (B)	C (C)
23	1 (A)	2 (B)	C (C)
24	1 (A)	2 (B)	C (C)
25	1 (A)	2 (B)	C (C)

Number	Grade		
26	1 (A)	2 (B)	C (C)
27	1 (A)	2 (B)	C (C)
28	1 (A)	2 (B)	C (C)
29	1 (A)	2 (B)	C (C)
30	1 (A)	2 (B)	C (C)
31	1 (A)	2 (B)	C (C)
32	1 (A)	2 (B)	C (C)
33	1 (A)	2 (B)	C (C)
34	1 (A)	2 (B)	C (C)
35	1 (A)	2 (B)	C (C)
36	1 (A)	2 (B)	C (C)
37	1 (A)	2 (B)	C (C)
38	1 (A)	2 (B)	C (C)
39	1 (A)	2 (B)	C (C)
40	1 (A)	2 (B)	C (C)
41	1 (A)	2 (B)	C (C)
42	1 (A)	2 (B)	C (C)
43	1 (A)	2 (B)	C (C)
44	1 (A)	2 (B)	C (C)
45	1 (A)	2 (B)	C (C)
46	1 (A)	2 (B)	C (C)
47	1 (A)	2 (B)	C (C)
48	1 (A)	2 (B)	C (C)
49	1 (A)	2 (B)	C (C)
50	1 (A)	2 (B)	C (C)

Potato Judging Seed Classes

Name: _____

Chapter: _____

Contestant No.: _____

Class 1		Class 2		Class 3		Class 4	
1-2-3-4		1-2-3-4		1-2-3-4		1-2-3-4	
1-2-4-3		1-2-4-3		1-2-4-3		1-2-4-3	
1-3-2-4		1-3-2-4		1-3-2-4		1-3-2-4	
1-3-4-2		1-3-4-2		1-3-4-2		1-3-4-2	
1-4-2-3		1-4-2-3		1-4-2-3		1-4-2-3	
1-4-3-2		1-4-3-2		1-4-3-2		1-4-3-2	
2-1-3-4		2-1-3-4		2-1-3-4		2-1-3-4	
2-1-4-3		2-1-4-3		2-1-4-3		2-1-4-3	
2-3-1-4		2-3-1-4		2-3-1-4		2-3-1-4	
2-3-4-1		2-3-4-1		2-3-4-1		2-3-4-1	
2-4-1-3		2-4-1-3		2-4-1-3		2-4-1-3	
2-4-3-1		2-4-3-1		2-4-3-1		2-4-3-1	
3-1-2-4		3-1-2-4		3-1-2-4		3-1-2-4	
3-1-4-2		3-1-4-2		3-1-4-2		3-1-4-2	
3-2-1-4		3-2-1-4		3-2-1-4		3-2-1-4	
3-2-4-1		3-2-4-1		3-2-4-1		3-2-4-1	
3-4-1-2		3-4-1-2		3-4-1-2		3-4-1-2	
3-4-2-1		3-4-2-1		3-4-2-1		3-4-2-1	
4-1-2-3		4-1-2-3		4-1-2-3		4-1-2-3	
4-1-3-2		4-1-3-2		4-1-3-2		4-1-3-2	
4-2-1-3		4-2-1-3		4-2-1-3		4-2-1-3	
4-2-3-1		4-2-3-1		4-2-3-1		4-2-3-1	
4-3-1-2		4-3-1-2		4-3-1-2		4-3-1-2	
4-3-2-1		4-3-2-1		4-3-2-1		4-3-2-1	

Scoring only

Class 1

Class 2

Class 3

Class 4

Total Score

Potato Judging Potato Blemishes

Name: _____ Chapter: _____

Place the number of the Blemish next to the Specimen Number. Enter under Identification B on your Scantron Sheet. 10 blemishes @ 10 pts each = 100 pts total.

Specimen Number (Identification B)	Blemish Number
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Blemish Name	Blemish Number
Rhizoctonia	001
Pitted Scab	002
Soft Rot	003
Dry Rot	004
Nematode	005
Wire Worm	006
Mechanical Damage	007
Rodent Damage	008
Sun Burn	009
Hollow Heart	010
Black Heart	011
Second Growth	012
Subject to Break	013
Freeze Damage	014
Caked Dirt	015
Growth Crack	016

Potato Judging Oral Reasons Judges Scoresheet

Name: _____ Chapter: _____

Specimen	Grade (0-5 pts.)	Oral Reasons (0-5 pts.)	Total (0-10 pts.)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
Grand Total			

- 2 minute time limit to grade and give reasons
- Up to 5 reasons per potato unless it is a cull. 1 reason needed for culls.