4-H CROP JUDGING

Event Guidelines

1. The state 4-H crop judging event will take place during the North Dakota Winter Show.

2. This guide shall be used as the official guidelines for the contest and the following printed materials may be used as resources in preparation for the crop judging event.
   GCA671 Crop Judging Guide (changes have occurred in North Dakota Weed laws and this contest since this publication was printed, but it will still be useful for crop identification and information)
   GCA672 Identifying Weeds and Their Seeds (please note that the list of restricted and noxious weeds has changed since this publication was printed, use for identification aid only)
   GCA673 Market Grade Factor Identification scorecard - Hard Red Spring Wheat
   GCA674 Weed Seed Identification scorecard
   GCA675 Weed Mount Identification scorecard
   GCA676 Market Grain Classes scorecard
   GCA677 Crop Judging Classes scorecard
   GCA678 Market Class Grain Inspection Report
   GCA685 Market Grade Factor Identification scorecard - Barley
   GCA686 Market Grade Factor Identification scorecard – Soybeans
   GCA687 Crop and Weed Science Identification scorecard
   GCA688 Crop and Weed Plant Identification scorecard

3. The following divisions will be available.
   **Senior division:** 4-H members age 13-18 at the start of the 4-H year.
   **Junior division:** 4-H members age 8-13 at the start of the 4-H year.
   **Open division:** Any individual, youth or adult, may participate if they are not eligible for one of the other 4-H or FFA divisions.
   **Note:** youth age 13 at the start of the 4-H year are eligible in either the senior or junior 4-H division.

4. Contestants must be enrolled as 4-H members in the county they represent.

5. Counties may enter any number of participants in any of the divisions.

6. Scores of the top three individuals from a county will be combined for the team score. Counties with less than three individuals in a division may combine with another county to form a team. Up to three counties may combine to make a team, provided that none of the counties involve have more than two participants in that division. The combination teams should register together.

7. The 4-H dress code will be required in the senior and junior divisions. Please refer to the contest instructions/registration for specific information.

Contest operation and scoring

1. Use names and other factors as provided in this guide.

2. A committee of Extension agents and volunteers will score cards.
3. An incorrect answer will be considered an error in identification and will be considered one incorrect answer (not two incorrect as one for wrong answer listed and one for correct answer omitted). Extra factors will be discounted as an incorrect answer.

4. Ties will be broken only in cases where individual awards are involved. If a tie still exists, each class will be compared in the following order: Hard Red Spring Wheat seed class, barley seed class, oat seed class, flax seed class, market grade determination, market factor identification, weed seed identification, and weed mount identification. Within each class, the ranking will be determined by 1) total score of class 2) reasons score of classes. Finally, if a tie exists after all classes have been compared, it will be broken on neatness and spelling.

5. Clipboards, notes, or other printed material may not be used in the event.

6. Twelve minutes will be provided for each station. After ten minutes have passed, a two minute warning will be provided.

7. Flashlights and magnification devices may be used only with event supervisors' permission (students with vision impairments, etc. only)

**Contest classes for FFA and Senior 4-H divisions Junior division 4-H contest classes**

**A. Selection of Seed Grain (placing & reasons)**

<table>
<thead>
<tr>
<th>GRAIN</th>
<th>POINTS</th>
<th>GRAIN</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hard Red Spring Wheat</td>
<td>100</td>
<td>Hard Red Spring Wheat</td>
<td>100</td>
</tr>
<tr>
<td>2. Durum Wheat</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Malting Barley</td>
<td>100</td>
<td>Malting Barley</td>
<td>100</td>
</tr>
<tr>
<td>4. Oats</td>
<td>100</td>
<td>Oats</td>
<td>100</td>
</tr>
<tr>
<td>5. Flax</td>
<td>100</td>
<td>Flax</td>
<td>100</td>
</tr>
</tbody>
</table>

**B. Crops and Weeds – Seed and Plant Identification**

6. 15 seed identification                               150  
7. 15 plant mounts identification - seed/mount identification will be a combination of crops and weeds 150  

**C. Market Grains**

8. Market Factor Identification  
   Hard Red Spring Wheat 100  
9. Market Factor Identification  
   Barley 100  
10. Market Factor Identification  
    Soybeans 100  
11. Market Grade Description - Spring Wheat and/or Durum 100  

**TOTAL POINTS** 1,200 800  
* In the 4-H junior division market grade description class, participants do not record percent protein and grade determining factor.

**Awards**

1. Awards will be distributed according to the Winter Show schedule.

2. Senior and junior division participants are eligible for the following:
   a. Ribbons will be awarded to approximately 50% of participants.
b. High overall individual to receive plaque sponsored by the Valley City Lion's Club.
c. Recognition (ribbons or other suitable award) will be presented to the top four individuals of
teams placing second or third in each division.
d. The top four members of the first place team in each division will receive plaques sponsored
by the North Dakota Crop and Seed Improvement Association. These team members in the
senior division are eligible for a trip relating to the crop marketing industry. The trip will be
planned by the team and county extension staff.

3. Open division participants are eligible for the following:
The high individual will receive a plaque sponsored by the North Dakota Crop and Seed
Improvement Association.
   a. Ribbons will be presented to the top ten individuals.

Contest Procedures
A. Seed Grain Classes - A crop can be no better than the quality of seed sown. In this section of crop
selection the individual evaluates four (4) samples of grain, identifies factors that affect seed quality
and ranks these samples for seed purposes. To place one sample of seed over another, you must know
the seriousness of the various factors and their order of importance. To provide a basis for ranking
classes, individual factors are grouped according to their importance, and these groups are ranked.
Factors which are to be considered in order of importance with the least serious factors given first are:

<table>
<thead>
<tr>
<th>Number</th>
<th>Factor</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Inert Matter</td>
<td>Soil, chaff/straw, sticks, stones, insect parts, rodent contamination, bird contamination.</td>
</tr>
<tr>
<td>2</td>
<td>Appearance &amp; Texture</td>
<td>Low test weight, starchiness.</td>
</tr>
<tr>
<td>3</td>
<td>Diseases</td>
<td>WHEAT-smut, ergot, black-point, scab.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BARLEY-smut, blight, ergot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OATS-blight &amp; ergot</td>
</tr>
<tr>
<td>4</td>
<td>Damages</td>
<td>WHEAT - Weathered, heat, sprout, frost, broken, green.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BARLEY - Skinned, broken, heat, sprout, weathered.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OATS - Hulled, weathered, sprout. (Naked Oats will not be used as a base sample.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FLAX - heat</td>
</tr>
<tr>
<td>5</td>
<td>Contrasting Classes</td>
<td>Mixtures of: HRSW &amp; Durum; White Aleurone &amp; Blue Aleurone Barley</td>
</tr>
<tr>
<td>6</td>
<td>Other Crop Seeds</td>
<td>Rye in wheat; oats in barley; barley in wheat, etc. or any crop seed mixed in a sample. Note: some grains are not used in seed classes - see official list.</td>
</tr>
<tr>
<td>7</td>
<td>Other Weed Seeds</td>
<td>Amounts of seeds classed as &quot;Other Weed Seeds&quot; are present in the sample. Note: See the official list for those seeds that will not be used in seed classes.</td>
</tr>
<tr>
<td>8</td>
<td>Low Germination</td>
<td>If a germination percentage is given it will be given for all four samples in the class. If the percentage given is less than 85 percent germination LOW GERMINATION should be identified as a seed quality factor.</td>
</tr>
<tr>
<td>9</td>
<td>Restricted Noxious Weeds</td>
<td>Sample has: dodder, hedge bindweed, quack-grass, or wild oats seed present.</td>
</tr>
<tr>
<td>10</td>
<td>Prohibited Noxious Weeds</td>
<td>Sample has: absinth wormwood,* Canada thistle, leafy spurge, field bindweed, musk thistle, dalmation toadflax, diffuse knapweed,* Russian knapweed, spotted knapweed, purple loosestrife,* saltcedar,* or yellow starthistle* seed present. (*seeds from these weeds will not be used in pan classes.)</td>
</tr>
</tbody>
</table>
Completing the Seed Grain Class Score Card

The crop judge must learn to identify and name the individual factors (such as starchy kernels or frost damaged seed) and then list such conditions under REASONS on their scorecard. Each factor found in a sample must be specifically identified. (Example - write chaff/straw not inert matter.) There may be from zero (pure) to three (3) factors per pan. All samples will be readily placeable. Samples are to be evaluated by each contestant. Samples must then be placed in accordance with the order of importance by the most serious factor found in each sample. If a sample has no defects, the word pure must be written on the "reasons" line on the scorecard.

No two samples will end with the same worst factor. For example: there may be only one sample of the four that contains any of the seeds designated as prohibited noxious weeds (although that seed sample may have up to three kinds of prohibited noxious weed seeds present). Pure base samples are a must in preparing judging classes. Any treated seeds should be disregarded as the sample is being judged for seed purposes.

Correct weed and crop names shall be used and shall be those listed in this publication. Correct spelling of weed and seed names according to the official list is recommended. However, points will not be deducted if the word is recognizable. A minimum of six (6) seeds or other identifiable items per factor will be present in each sample. Do not count seeds - the factors will be obvious however they may be difficult to see (example: barley in oats)

Use the minus system for scoring - 15 points per sample. Forty (40) points will be allowed for the correct placing using the cut card as the basis for grading (even cuts). Sixty (60) points (15 per line) will be allowed for reasons. Failure to indicate the correct sample number in each row or to place a sample will result in a zero placing score. Failure to identify the class will result in a deduction of ten (10) points. The accepted class names are: HRSW or Hard Red Spring Wheat; Barley or Malting Barley; Durum; Oats; or Flax. If a contestant duplicates two numbers in making his/her placing, the lowest possible score will be used.

Always use the stirring sticks present in each sample – do not use fingers, pencils or other items. Remove coat so sleeves do not tip pans. Use extra care not to mix the samples or spill the entire sample. A twelve (12) minute time period is allowed for each class. (10 minutes with an additional two-minute warning) Placing and reasons scores are added together to give the total score for each class. (100 pts)

SPECIFIC SEED CLASS RULES

1. Inert Matter - These factors are least serious and detract from the appearance of crop seed but do not affect its quality or germination. Inert material includes soil, chaff/straw, sticks, stones, insect parts and rodent or bird contamination.

2. Appearance and Texture - Starchiness and lack of plumpness contribute to poor appearance and texture of the seed sample. Starchiness is found in wheat samples only and an obvious content of starchy kernels will be present in the sample of HRSW or Durum. If Test Weight is provided, it will be given on all four samples. Any weight given below the minimum test weight for U.S #1 grade is to be identified as "low test weight". Minimum test weights = HRSW - 58, Durum - 60, Barley - 47, Oats - 36, Flax - 49, Soybeans - 56

3. & 4. Diseases and Damages -
   HRSW & Durum:
accepted diseases - blackpoint, scab, smut, and ergot.
accepted damages - broken, heat, green, sprout, frost and weathered.

Malting Barley:
accepted diseases - blight, ergot, and smut.
accepted damages - skinned, broken, heat, sprout, and weathered.

Oats:
accepted diseases - ergot and blight.
accepted damages - weathered, hulled and sprouted.

Flax:
no diseases accepted
accepted damage - heat damage
disregard broken in all flax samples

5. Contrasting Classes - Contrasting classes of wheat are obvious mixtures of HRSW and Durum.
For Malting Barley, class mixtures are obvious mixtures of white and blue aleurone varieties.
A vial or bag of pearled barley will be included in the pans to be considered to determine contrasting classes. (Pearled barely in bags or vials should not be considered skinned.) Yellow and brown flax are an acceptable variety mixture and are not considered contrasting classes.

6. Other Crop Seeds - This factor indicates that other crop seeds are mixed in a seed sample (such as rye in wheat or oats in barley). Other crop seeds that could be found in a seed sample include:

<table>
<thead>
<tr>
<th>Alfalfa</th>
<th>Flax</th>
<th>Rye</th>
<th>Sunflower (non-oil)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barley</td>
<td>Lentils</td>
<td>Safflower</td>
<td>Sweetclover</td>
</tr>
<tr>
<td>Black Turtle Bean</td>
<td>Millet - Foxtail</td>
<td>Smooth Brome</td>
<td>Triticale</td>
</tr>
<tr>
<td>Buckwheat</td>
<td>Millet - Proso</td>
<td>Sorghum (grain)</td>
<td>Wheat - Durum</td>
</tr>
<tr>
<td>Canola</td>
<td>Navy Bean</td>
<td>Soybean</td>
<td>Wheat - HRSW</td>
</tr>
<tr>
<td>Corn</td>
<td>Oats</td>
<td>Sugarbeet</td>
<td>Yellow Mustard</td>
</tr>
<tr>
<td>Crambe</td>
<td>Pinto Bean</td>
<td>Sudangrass</td>
<td></td>
</tr>
<tr>
<td>Field Pea</td>
<td>Reed Canarygrass</td>
<td>Sunflower (oil)</td>
<td></td>
</tr>
</tbody>
</table>

7. Other Weed Seeds - This factor includes all other weed seeds not included as Prohibited or Restricted Noxious. (See Official Weed List)

8. Low Germination - If germination percentage is provided it will be given on all four samples in the class. Any percent given below the minimum standard germination is to be called "Low Germination". Minimum acceptable percentage for all grains = 85 % germination

9. Restricted Noxious Weeds - These include seeds of weeds that are very objectionable in fields or weed seeds that are hard to clean out of crop seed. Under North Dakota State Seed Law, crop seed containing more than specified amounts of these seeds must be labeled accordingly.

<table>
<thead>
<tr>
<th>Dodder</th>
<th>Quack grass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hedge Bindweed</td>
<td>Wild Oats</td>
</tr>
</tbody>
</table>

10. Prohibited Noxious Weeds - These are persistent and difficult to control weeds that reproduce by seed, or spread by roots or underground stems. Under North Dakota Seed Law, crop seed containing these seeds cannot be sold.

<table>
<thead>
<tr>
<th>Absinth Wormwood*</th>
<th>Musk Thistle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada Thistle</td>
<td>Purple Loosestrife*</td>
</tr>
</tbody>
</table>
Dalmation Toadflax*  
Diffuse Knapweed*  
Field Bindweed  
Leafy Spurge  
Russian Knapweed  
Saltcedar*  
Spotted Knapweed  
Yellow Starthistle*

*seeds from these weeds will not be used in pan classes.

B. Plant and Seed Identification
Scoring - 15 plants and 15 seeds will be identified at a value of 10 points per correct answer for a total of 300 points.

Excellent plant and seed mounts can be prepared locally with cardboard, tag board or press board and lamination or clear contact paper. (Mounting on a white background preferred.) This can be an excellent summer project for students. Dry mount presses and laminating machines can prepare "professional" plant mounts that will be flexible and will retain their original color indefinitely. Any variation from the official list of names will be wrong. Correct spelling is recommended, however points will not be deducted if the name is recognizable.

1. Official Weed List (47)

**Prohibited Noxious Weeds**
Absinth Wormwood**
Canada Thistle
Dalmation Toadflax**
Diffuse Knapweed**
Field Bindweed
Leafy Spurge
Musk Thistle
Purple Loosestrife**
Russian Knapweed
Saltcedar**
Spotted Knapweed
Yellow Starthistle**

**Other Weeds (Continued)**
Curly Dock
Eastern Black Nightshade
Erect Knotweed**
Field Pennycress
Field Sandbur
Flixweed**
Foxtail Barley**
Giant Ragweed
Green Foxtail
Gumweed**
Hoary Cress
Kochia
Lanceleaf Sage
Marshelder
Nightflowering Catchfly
Pennsylvania Smartweed
Perennial Sowthistle
Prickly Lettuce
Prostrate Knotweed**
Prostrate Pigweed**
Redwood Pigweed
Russian Thistle
Wild Buckwheat
Wild Mustard
Wild Proso Millet
Wild Rose
Wild Sunflower
Yellow Foxtail

**Restricted Noxious Weeds**
Dodder
Hedge Bindweed
Quackgrass
Wild Oats

**Other Weeds**
Barnyardgrass
Common Cocklebur
Common Lambsquarters
Common Mallow
Common Milkweed
Common Ragweed
2. Official Grain and Forage Crops List (35 seeds, 30 plants)

- Alfalfa
- *Barley - two row
- Barley - six row
- **Black Turtle Bean
- **Buckwheat
- **Canola
- **Corn
- **Crambe
- Field Bean ***
- Field Pea
- Flax
- *Kentucky Bluegrass
- **Lentils
- Millet - Foxtail
- Millet - Proso
- **Navy Bean
- Oats
- **Pinto Bean

- Reed Canarygrass
- *Russian Wild Rye
- Rye
- Safflower
- Smooth Brome
- Sorghum
- Soybean
- Sudangrass
- **Sugarbeet
- **Sunflower - Non-oil
- **Sunflower - Oil
- Sweetclover
- **Triticale
- Wheat - Durum
- Wheat - Hard Red Spring (HRSW)
- *Wheatgrass, Crested
- *Wheatgrass Slender
- **Yellow Mustard

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*Plant and seed identification only (not included in seed grain pan classes)

**Seed identification and pan classes only

***In Plant Identification - black turtle bean, navy bean & pinto bean are “field beans”. The term “field bean” is not used in seed ID or pan classes.

C. Market Grain

1. This section tests identification of market factors affecting the quality of wheat, barley, and soybeans. These factors affect grade designation and the premium and discount system of pricing. Factors to be identified include the following:

**HRS Wheat - Market grade factor identification**

- No Defects (U.S.No.1)
- Kernel Damage - Heat
- Kernel Damage - Frost
- Kernel Damage - Green
- Kernel Damage - Sprout
- Blackpoint or Scab
- Foreign Material
- Low Test Weight Per Bushel
- Broken Kernels
- Contrasting Wheat Classes
- Treated - Condemned
- Inseparable Stone
- Contamination - Rodent or Bird
- Ergotty

**Barley - Market grade factor identification**

- No Defects (U.S. No. 1)
- Kernel Damage - Heat
- Kernel Damage - Sprout
- Blight
- Foreign Material - Other Grains
- Foreign Material - Wild Oats
- Other Foreign Material
- Skinned or Broken Kernels
- Thin and/or Low Test Weight
- Smutty
- Ergotty
- Weathered
- Contamination - Rodent or Bird
- Inseparable Stone
Soybean - Market grade factor identification

- No Defects (U.S. No. 1)
- Kernel Damage - Splits
- Kernel Damage - Heat
- Kernel Damage - Insect
- Kernel Damage - Sprout
- Kernel Damage - Frost and/or Immature Green
- Kernel Damage - Weathered or Moldy
- Foreign Material
- Purple Mottled - Stained
- Inseparable Stone
- Treated - Condemned
- Contamination - Rodent or Bird
- Low Test Weight per Bushel

Ten samples will be inspected by contestants in each class. The participants will examine each sample and identify the most obvious factor that most limits or determines the final market grade. Check only one factor for each sample. There will be one obvious factor present in the sample. These factors will be readily identifiable. Remember that each sample represents an unspecified quantity of grain to be used as feed or food - not for seed. If no limiting factor is present, it should be identified as No Defects US #1

Scoring - Ten (10) points per correct answer, ten (10) samples per class for a total of 100 points. See sample scorecards for this section. Place an (X) in the single market factor box that most affects the grade and value of the sample.

Grade Factors of Wheat, Barley, and Soybeans

1. No Defects US No.1. Refers to wheat, barley or soybeans that are nearly free of defective kernels or contaminants. None of the factors listed are present in the sample that would limit its quality as a food.

2. Kernel Damage Heat. Kernels or pieces of grain that are distinctly discolored, black or dark brown throughout (into the endosperm or interior of the kernel) many also appear swollen and puffy. This can be caused by extreme external heat, or as a result of heating/fermentation in storage. Barley hulls have a burnt to toasty brown appearance. Soybeans are severely discolored black or dark brown either from external heating, such as from improper drying or from heating as a result of excess moisture and spoiling. Almost all heat damage is the result of storing grain too wet.

3. Kernel Damage Frost. Signs of frost damage are green, black or brown kernels; frost blisters extending around the kernel and into the crease; bran coat partially flaked off; or wax-like, candied or caramelized appearance along with typically dull coffee-brown color; and blistered bran coat extending into the crease. Not used for barley, see # 5 for soybeans.

4. Kernel Damage Green. A distinctive green coloration of kernels is caused by premature harvesting of the grain or the presence of late maturing heads. Many of the green kernels are shriveled and not filled. Not used for barley, see #5 for soybeans.

5. Kernel Damage - Frost and/or Immature Green. Soybeans which are immature from any cause and have a green color and or a mealy or chalky consistency.


7. Kernel Damage Sprout. Kernels with the germ end broken open from germination with the root or shoot visible, or kernels that have sprouted so much that the bran or hull over the germ is broken. Check germ ends and hulls where sprouts (either root or shoot) may have broken off in handling the grain. Soybeans show definite evidence of having sprouted including splitting of seed and growth of the germ.

8. Kernel Damage Splits. Any soybean having more than 3 of the seed missing. Seeds are generally split during mechanical harvesting/handling.

9. Kernel Damage – Insect. Soybeans that show evidence of damage by insects such as weevils.
10. Blackpoint or Scab. Kernels affected by scab often have a) a pinkish appearance due to mold growth, b) a dull, lifeless and chalky appearance as a result of decay, c) germ with moldy appearance, d) mold in the kernel crease, e) the bran coat is broken open. Blackpoint is a fungus that causes black coloration of the germ face and covers more than 1/2 of the germ. Not used for barley or soybeans.

11. Foreign Material. This is all material other than wheat or soybeans remaining in the sample after the removal of dockage and cracked and broken kernels. In barley we use two specific designations of foreign material in which we identify wild oats and other grains. Wild oats is not separable from barley and other grains may affect the feed value of the barley for livestock. All other dockage will be identified as other foreign material in barley.

12. Low Test Weight per Bushel. A price discount is usually assessed on low test weights wheats. Low test weight is an indicator of yield and is a factor that often determines numerical grade if other factors are not significant. Test weight will be clearly provided and test weight not meeting minimum standard weights per bushel should be checked (see Seed Class Rules - Appearance and Texture.)

13. Thin and/or Low Test Weight Barley. Barley that is obviously low in plump kernels. Thin barley kernels will readily pass through a 5/64 x 3/4 sieve. Barley that does not meet test weight standards can be listed as thin barley.

14. Broken Kernels. Mechanically damaged wheat kernels and pieces of kernels of a dockage-free sample that will readily pass through a 0.064 by 3/8 inch oblong holed sieve. Term used only for wheat.

15. Skinned or Broken Kernels. In Barley we use the term Skinned or Broken. Skinned kernels are those with one third of the hull removed or which has the hull loosened or removed over the germ, which affects malting quality. Broken kernels are seeds injured during mechanical harvesting/handling. Term used only for Barley.

16. Contrasting Wheat Classes. The sample of hard red spring wheat contains an obvious quantity of durum wheat, white wheat or other unclassed wheat. Not used for Barley or Soybeans.

17. Soybeans of Other Colors. A mixture of soybeans that does not meet the requirements of yellow soybeans. Other colors include black, brown and bicolor. Yellow soybeans must be less than 1% other colors to grade US # 1. The hilum is not used in this determination.

18. Purple Mottled or Stained. Soybeans which are mottled or stained purple on the surface by weather and/or disease. The soybean kernels will have 50% or more of their surface discolored by dirt or dirt-like substances to be considered.

19. Treated & Condemned. Wheat, barley or soybeans that have been scoured, limed, washed sulfured, or commercially treated in any way that true quality is not reflected by numerical grade. Look for evidence of fungicidal or insecticidal treatment (artificially colored kernels) which the US Food and Drug Administration holds to be detrimental to the health of wheat consumers or unfit for human or livestock consumption.

20. Inseparable Stone. Concreted, earthy or mineral matter and other substances of similar hardness that do not disintegrate readily in water fit in this category.

21. Contamination Rodent or Bird. Rodent pellets or bird droppings are obviously present in the sample.

22. Ergotty. The sample contains obvious quantities of ergot. Look for purplish to black bodies in place of normal kernels in the sample. Not used for soybeans.

23. Smutty. A special designation for barley that has a smut odor and smut balls and pieces of smut balls obviously throughout the sample. Not used for wheat or soybeans.

24. Weathered. Barley or soybeans that has obvious discoloration from weathering and includes being bleached, or ground stained and possibly moldy from weathering and deterioration in the field or in storage. Moldy soybeans may contain white, grey or pink mold on exposed areas. Not used for wheat.
D. Market Grade Description and Evaluation of Spring Wheat and Durum (GRAIN GRADING)

From information provided on a market class Grain Inspection Report contestants will determine grade, subclass, special grade (including dockage and protein %) and the grade determining factor, of five (5) lots of hard red spring wheat and/or durum

Contestants will compare information given in the Grain Inspection Report to an Official Wheat Grading Chart that is provided to determine the grade, subclass and special grade of each lot. They will express the correct figures (rounded to the nearest tenth of a percent) for dockage in HRSW and Durum and protein in HRSW and Durum, and identify the Grade Determining Factor for each lot.

Special Instructions - Grain Grading

Grade - Determined by comparing given percentages from the grain inspection report to the grading chart. If any factor does not meet the minimum test weight or maximum allowed percentage in any grade and does for a lower grade, the grade given to the lot will remain at the lower grade. Grades used are: U.S. No. 1, U.S. No. 2, U.S. No. 3, U.S. No. 4, U.S. No. 5 and U.S. Sample.

Subclass - determined by the charts expressing subclasses based on the percentage of Hard Vitreous Kernels in the lot. Be sure to use the Hard Red Spring Wheat or Durum chart that pertains to the lot. Abbreviations as shown in the chart may be used.

Special Grade - give these special grades to the lot if applicable. Write the special grade in the box provided or write None and/or a diagonal slash, in the box provided.

- Ergoty - contains more than 0.05% of ergot
- Garlicky - contains more than 2 green garlic bulblets (or an equivalent quantity of dry bulblets) per 1000 gram sample.
- Infested - infested with live weevils injurious to stored grain.
- Treated - has been scoured, limed, washed, sulfured, or commercially treated in such a manner that the true quality is not reflected by either the numerical grade or the U.S. sample grade alone.
- Light Smutty - Wheat that has an unmistakable odor of smut, or which contains 6 to 30 smut balls, portions of smut balls or spores of smut per 250 gram sample.
- Smutty - contains more than 30 smut balls, portions of smut balls, or spores of smut per 250 gram sample.

% Protein - (HRSW and Durum) Round the amount given in the grain inspection report to the nearest tenth of a percent. (example: 14.24 = 14.2; 14.25 = 14.3; 14.26 = 14.3; etc.) Protein percentage will be given for Hard Red Spring Wheat and Durum. If protein is not given for HRSW or Durum, write None, a diagonal slash or 0 in the box provided.

% Dockage - Round the amount given in the grain inspection report to the nearest tenth of a percent. (example: 1.44 = 1.4; 1.45 = 1.5; 1.46 = 1.5; etc.) if percentage of dockage is not given or is zero write No Dock in the box provided or None, a diagonal slash or 0.

Grade Determining Factor - The factor (or factors) that takes the lot to its lowest grade must be identified in the boxes provided. The factor or factors that takes a lot to a lower grade is called the Grade Determining Factor. The Grade Determining Factor maybe written out for clarity or abbreviated according to the following: T.W.= test weight; H.D.= heat damaged; T.K.D.= total kernel damage; F.M.=foreign material; S.B.= shrunken & broken; T.D.= total defects; C.C.=...
contrasting class; or T.W.O.C= total wheat of other classes, AF = Animal filth, CB = Castor Beans, CS = Crotalaria Seeds, GL = Glass, ST = Stones, UFS = Unknown Foreign Substance, ID = Insect Damage, and TC = Other Materials Total Count

In a grain inspection report, the total of T.K.D. + F.M. + S.B. = T.D. Total defects may not be given in the contest, but can be found (calculated) by the contestant by adding these three factors.

If there is more than one factor, determining the grade, all of these factors must be listed. If the grade is U.S. No. 1, write None and/or a diagonal slash in the box provided for the grade determining factor.

Scoring - Two (2) points per box are allotted for protein percentage and dockage percentage. All other boxes are worth four (4) points each for a total of 100 points.

Failure to write the class name on the score card results in a deduction of ten (10) points. Contestants are to write "HRSW" or "Durum" or "HRSW and Durum" on the class name line.

If the lot is a sample grade as determined by the grading chart (be sure to read qualifications for this grade) write U.S. Sample or Sample in the grade box provided on the scorecard. Treated has no bearing on the U.S. grade number, it is a special grade only. Do not leave any box empty on the score card. Use a diagonal slash, the word None, 0, or use No Dock in % dockage. Samples with greater than 10% contrasting classes and wheat of other classes would be considered Mixed Wheat and will not be used in the grain grading class.

Maximum Count Limits of Other Materials
The count of other materials found in a 1000 gram sample will be given on the Market Class Grain Inspection Report card. Counts of materials such as Animal filth, Castor Beans, Crotalaria Seeds, Glass, Stones, Unknown Foreign Substances and Insect Damage per 100 grams will be given. The chart easily shows that counts that exceed these limits take the sample to "U.S. Sample" grade. If any one factor exceeds the count limit, it must be listed as a "Grade determining factor".

If the total count of any combination of animal filth, castor beans, crotalaria seeds, glass, stones or unknown foreign substances exceeds 4, the sample must be given the U.S. Sample grade and the grade determining factor would be "Total Count" (or T.C.). The contestant may need to add these counts to determine this factor.