



# **Collegiate Crops Contest Rules 2026**

Kansas City | Tuesday, November 17, 2026

Chicago | Friday, November 20, 2026

# Table of Contents

|                                                                             |    |
|-----------------------------------------------------------------------------|----|
| Table of Contents .....                                                     | 2  |
| Officers of the Coaches Committee .....                                     | 4  |
| Basics of the Collegiate Crops Contest .....                                | 4  |
| Commercial Grain Grading.....                                               | 4  |
| Plant and Seed Identification .....                                         | 4  |
| Seed Analysis.....                                                          | 4  |
| Contest dates and information.....                                          | 4  |
| Regional Contest Information .....                                          | 4  |
| American Royal Kansas City Collegiate Crops Contest .....                   | 5  |
| Chicago Collgiate Crops Contest.....                                        | 5  |
| General Rules .....                                                         | 6  |
| Commercial Grain Grading Special Rules.....                                 | 7  |
| Scoring System for Grain Grading Score Cards – 75 points each.....          | 11 |
| List From Which Material Will Be Selected For Commercial Grain Grading..... | 12 |
| Barley .....                                                                | 12 |
| Corn .....                                                                  | 12 |
| Oats.....                                                                   | 13 |
| Rye .....                                                                   | 13 |
| Sorghum .....                                                               | 13 |
| Soybeans.....                                                               | 14 |
| Wheat .....                                                                 | 14 |
| Seed Analysis Special Rules .....                                           | 14 |
| Calculating the sample score in seed analysis.....                          | 18 |
| Identification special rules.....                                           | 18 |
| Identification List .....                                                   | 20 |
| Field crops.....                                                            | 20 |
| Crop Diseases.....                                                          | 23 |
| Weeds.....                                                                  | 23 |
| Prohibited Noxious Weeds .....                                              | 23 |
| Restricted Noxious Weeds .....                                              | 24 |
| Common Weeds .....                                                          | 24 |
| Historic Varieties .....                                                    | 25 |
| Forms for contest.....                                                      | 26 |

|                                                              |   |
|--------------------------------------------------------------|---|
| Crops Team Addresses, Phone Numbers, and Email Contacts..... | 4 |
| Coaches .....                                                | 4 |
| Superintendents and Assistant Superintendents .....          | 6 |
| Contest Coordinators .....                                   | 6 |
| Sponsors and Donors .....                                    | 7 |
| Contest Samples and other suppliers.....                     | 7 |

## Officers of the Coaches Committee

| Position                         | Name            | Institution               | Email                                                                        |
|----------------------------------|-----------------|---------------------------|------------------------------------------------------------------------------|
| Chair                            | Beatrix Haggard | Oklahoma State University | <a href="mailto:Beatrix.haggard@okstate.edu">Beatrix.haggard@okstate.edu</a> |
| Vice Chair                       | Sarah Frye      | Kansas State University   | <a href="mailto:szenger@ksu.edu">szenger@ksu.edu</a>                         |
| Co-Secretary/Contest Coordinator | Kevin Donnelly  | Kansas State University   | <a href="mailto:kjd@ksu.edu">kjd@ksu.edu</a>                                 |
| Co-Secretary/Contest Coordinator | Mindy DeVries   | Iowa State University     | <a href="mailto:mdevries@iastate.edu">mdevries@iastate.edu</a>               |

## Basics of the Collegiate Crops Contest

Preparation for crops contests teaches identification and evaluation of crops for quality relative to certification, viability and marketing. Students learn in great depth many skills that can be valuable regardless of their chosen profession in agronomy. A misconception of many is that you must want to be a grain grader to benefit from crops contest training. Such is not the case, as much can be learned which can supplement any field of crop sciences. The basic sections of the contest are:

### COMMERCIAL GRAIN GRADING

Grain grading skills provide students with the ability to recognize crop products for their market worth and involves knowing defects that reduce quality. Grading provides a basis for marketing and provides quality control over grain products, thus determining their ultimate use.

### PLANT AND SEED IDENTIFICATION

Training for this section enables one to develop essential skills used for inspecting and evaluating crops. Weed control and crop production practices often require proper plant and seed identification for making good management recommendations.

### SEED ANALYSIS

Crops grown from pure seed maintain genetic purity and good quality. Seed analysis is a means of determining the value of seed for planting and for market, thus providing a guide for all using crop seed.

## Contest dates and information

### REGIONAL CONTEST INFORMATION

The following regional contests are planned for the fall of 2026:

- Upper Midwest Region, TBD – Dawn Lee, University of Wisconsin-Platteville
- Central Region, October 3<sup>rd</sup> – Rachel Cott, Kansas State University

If you or your school are interested in a regional contest or the national contests, please contact the coordinator nearest your location or a member of the Coaches Committee.

## AMERICAN ROYAL KANSAS CITY COLLEGIATE CROPS CONTEST

The contest will be held on Tuesday, November 17<sup>th</sup> at the National Grain Center, 10383 North Ambassador Drive, Kansas City, MO. Superintendent of the contest is Eric Fabrizius, Kansas Crop Improvement Association, Manhattan, KS. Assistant Superintendents are Jeri Geren, Geren Farms, Altamont, KS, and Hanna Glass, Sterling Seed, Garden City, KS.

Seed analysis samples are prepared by the South Dakota State Seed Testing Laboratory. Grain grading samples are prepared by USDA-AMS-FGIS, Board of Appeals and Review, Kansas City, MO.

A tour covering a variety of businesses in the Kansas City area provides an educational look at the agribusiness located there. Visits have included National Grain Center/Federal Grain Inspection Service, Innerspace Storage/AGCO Equipment Co, The American Royal, Federal Reserve Bank, The Roasterie, Sporting KC Arena, Royals Stadium, Ingredion, DeLong Company, Guetterman Brothers Farms, Deveron, John Deere, Bartlett Company, Bayer Crop Science, Holganix, Strawberry Hill Bakery, and others.

The sponsors, whose names appear on this page, host the contestants and coaches at activities, support the tour, and provide the awards. All American designation is given to individuals scoring 95% or above by the American Society of Agronomy. Results are announced in CSA NEWS. Sponsors and the American Royal provide \$2000 in team scholarships to the top five teams.

### **Sponsors:**

- Corteva Agriscience
- Stine Seed Company
- American Society of Agronomy
- South Dakota Crop Improvement
- American Royal Association
- CHS Foundation
- Association of Official Seed Analysts (AOSA)
- American Seed Trade Association (ASTA)

## CHICAGO COLLEGIATE CROPS CONTEST

The contest will be held on Friday, November 20<sup>th</sup> at CME Group, 20 S Wacker Drive, Chicago, IL. Superintendent of the contest is Dan Smith, University of Wisconsin Extension. Assistant Superintendent is Anastasia Kurth, University of Wisconsin Extension.

Seed analysis samples are prepared by the South Dakota State Seed Testing Laboratory. Grain grading samples are prepared by USDA-AMS-FGIS, Field Office Staff, Kansas City, MO.

Teams often schedule their own agriculture industry tours during their travel from Kansas City to Chicago, and visit various historical and cultural sites in downtown Chicago during the days leading up to the contest. The sponsors of this contest, whose names appear on this page, support costs associated with conducting the contest and the awards banquet, and provide suitable awards to team and individual winners. All American designation is given to individuals scoring 95% or above by the American Society of Agronomy. Results are announced in CSA NEWS. Scholarships in the amounts of \$2000, \$1500, \$1000, \$750 and \$500 are presented to the first through fifth place individuals, respectively, by CME Group.

### **Sponsors:**

- CME Group
- Society of Commercial Seed Technologists (SCST)
- Crop Science Society of America

## General Rules

1. The plan of the contest and all rules included herein are official for the contest. They may not be modified or supplemented until at the next official coaches meeting. The secretary shall correct typographical errors.
2. Institutions entitled to send competing teams: Agricultural colleges and schools of similar rank and purpose in the United States and Canada. Other international teams may compete upon request and approval by the Coaches Committee.
3. Eligibility of students: Three regular members selected from undergraduate students of good standing shall represent an institution. Students who have a Bachelor's Degree in Agricultural or Biological Sciences are not eligible to participate in the contest. Alternate(s) may accompany the team if desired. A maximum of three alternates per team may participate in grain grading and seed analysis, providing space is available. Any number of alternates may participate in identification only. A contestant may compete another year provided he/she as an individual did not place fifth or higher in either entire contest. Students must be registered as full-time students, i.e. 12 hours.
4. Certification by a responsible school official of the eligibility of the students from which the team will be selected must be in the hands of the superintendent of the contest on the day of the contest. The student's name, his/her classification, and the number of hours he/she is carrying must be included. Coaches should bring a copy for each contest.
5. The coaches shall meet at the site of the contest in both Kansas City and Chicago at 7:00 the morning of the contests for set up. Contestants shall report to the Superintendent at 8:00 the day of the contests in both Kansas City and Chicago. It shall be the duty of the Coaches Committee Vice-Chair to supply all copies of the official forms (labeled A-1, A-2, A-3, B-1, etc.) for identification and seed analysis for both contests in Kansas City and Chicago. It shall be the duty of the Secretary to supply extra ID mounting sheets, and the Chairman to provide envelopes for seed analysis, if requested.
6. The contests will be divided into three groups: (a) commercial grain grading (8 samples); (b) seed analysis (10 samples); and (c) identification (200 samples).
7. A list of the plants, seeds, and diseases which may be included in the identification group is attached and constitutes a portion of the rules and regulations.
8. The list of materials from which selections may be made for the seed analysis and grading groups follows and is a part of the rules and regulations.
9. It shall be the duty of the Coaches to supply, without charge, such materials as may be needed for the contest. The Vice Chair is responsible for bringing copies of the answer forms for seed analysis and identification (45 sets per contest).
10. No communication with other contestants or anyone else except the superintendent and assistant superintendent will be permitted while the contest is underway, and at no time with other members of the team or the coach.
11. It is permissible for the contestant to take into the contest any ordinary equipment for making hand separations such as small containers, sheets or cards for picking surfaces, and forceps. Any other equipment for making separations shall be approved by a majority of the Coaches Committee in attendance prior to the contest. Sieves of any type are prohibited. Copies of the Official Rules and Regulations shall not be taken into the contest. Only information pertaining to the grading of grain may be added to the Handbook of Official Grain Grading Standards for use by contestants during the

contest. Grain grading worksheets are included with the official contest answer forms and will be supplied to the contestant. Students may design and bring their own grain grading worksheets. Electronic calculators may be used in the contest. Hand-held, battery-powered-illuminated magnifiers may be used by contestants. Timers are allowed in any event but must not be set for intermittent warning beeps during the 1.5-hour official contest time or they will be confiscated. Timers may only beep at the end. Shielded desk lamps for seed analysis may be provided by schools.

12. Legible writing is important and the judges will consider this factor in determining scores including the proper use of capitals, hyphens, apostrophe, and separation of words.
13. In case any contestant who competes in part of the contest is unable to continue and is replaced by an alternate, the team shall automatically be placed not higher than fourth. Any regular member of the team who makes a score which entitles him/her to individual awards shall receive such awards.
14. Infraction of the rules shall be followed by penalties varying from subtracting points to dismissal from the contest.
15. All identification specimens shall remain in place until all the contest papers are graded.
16. The Superintendent of the contest shall notify contestants of the time remaining at 45 minutes, 30 minutes, 15 minutes, 10 minutes, 5 minutes, and 2 minutes.
17. A university or college may participate as non-scored individual student or team participants in one, two, or three phases of the contest.
18. Each coach should leave ID samples (30 plants and 30 seeds) along with eligibility letters for the Kansas City contest at the hotel front desk by 8:00 am on Monday before the tour. Coaches should bring ID samples (30 plants and 30 seeds) along with eligibility letters for the Chicago contest to the Superintendent at the hotel on Wednesday night. If you cannot provide samples on Wednesday night, please leave them along with eligibility letters at the front desk of the hotel by 7:00 am Thursday morning, or send them with another team.
19. Identification samples shall be mounted using the standard card stock: WAUSAU Exact Index Heavy Card Stock, 110 lb, Smooth Finish, Blue – No. 49521, available in office supply stores. Do not cover samples with plastic or a laminated covering of any kind. Mount plants with ½" or ¾" wide clear plastic tape (not frosted or write on tape) in only three places on the sample. Label the mount with number and common name as given in the Rules and Regulations taped over one of the three mounting tapes so it can be easily removed. Any samples not properly mounted on the correct paper will not be used. If you do not have the official cardstock, contact me to obtain some.
20. No cell phones, smart watches, fitbits, iPads, or other wireless communication devices are allowed during the contest, **including during breaks between sections.**
21. Schools with new teams that attend the national contest may take home all of the identification samples from that contest if needed. **If practice samples are needed, contact the coaches' committee or add to discussion at coaches' meeting.**

## Commercial Grain Grading Special Rules

1. **Time — one and one-half hours. Value — 600 points. (Eight samples - 75 points per sample.) (No more than 75 points may be deducted per sample.)**
2. **Material — eight samples of grain shall be selected from barley, corn, wheat, oats, rye, sorghum, and soybeans. No more than three samples of any one grain may be included in the contest. A heat-sealed sleeve packet will be provided for each sample consisting of a representative quantity of the dockage free base sample at the top, with multiple sub-sections shown below, each containing items that have been hand-picked from the representative quantity. The representative quantity will be 30 grams for wheat, oats, rye, sorghum, and barley; 100 grams for soybeans; and 200 grams for corn, in**

lieu of the amounts required for official grade determination. Weights for the items in each sub-section item will be given on the packet. The kind of grain for each sample will be listed on packets and given information.

3. Given Information — A separate sheet shall be provided that includes information on test weight per bushel, moisture content and odors for each sample. It will also include values which must be determined on quantities larger than those supplied in the contest, such as for sieved quantities, special grades, sample grade factors and dockage. General appearance factors ordinarily determined by observations will be given. Percentages of hard and vitreous kernels will be given for wheat if appropriate. Live insects found in the samples shall be disregarded. Any material displayed in the sub-sections that could have been found in the picked portion which might function as a special grade or sample grade factor that are not kernels of the grain being graded must be added to foreign material (i.e., ergot bodies, stones, crotalaria seeds, etc.), and shall not be considered in determining special grades or sample grade. Only the information from the givens sheet is used for these determinations. Sample grade odors must be given only as musty, sour or commercially objectionable foreign odor.
4. Evaluation of Samples — Contestants must evaluate the representative sample, all items shown in the hand-picked sub-sections, and all information on the givens sheet to complete an answer form specific for each crop. On the answer form, contestants must complete the grade box for all columns in the factor table and correctly write the complete grade designation and grade determining factors. Items in the sub-sections may include damaged kernels, foreign material, other grains, other colors or classes different from the base sample, or material that may be ignored (see next section). Depending on the standards for each crop, items may count in multiple categories (ie. heat damaged wheat in sorghum is HT, DKT and FM; damaged corn in rye is DKT, FM and FMOW; damaged durum wheat in any red wheat is DKT and CCL; insect damaged wheat in malting barley is OG, DK and counts against SBLY). If information for any damage factor is given, then that factor will not be added to the hand-picked sub sections. For example, if the amount of heat damaged soybeans is provided on the givens sheet, then heat damaged soybean seeds will not appear in the hand-picked sub-section.
5. Possible Items Shown That May Be Ignored — In hand-picked samples, there may be material present that might suggest a defect, but is actually sound and is not used in grade determination. Since our attempt is to make the pre-picked samples a best representation of what contestants would have observed while actually picking samples, these items may still be presented in the hand-picked sub-sections and contestants will need to identify and evaluate them appropriately. Such items will be shown in the sub-sections with a corresponding weight, but might be ignored completely or partially. Following are some examples:

Sound hulled out whole and/or broken oat groats are not damaged and are ignored.

Sound hulled out whole or broken barley caryopses are not damaged and are ignored. (Also do not count toward skinned and broken kernels since that factor must be given.)

Exposed germs in rye are ignored (must have visible sprout for sprout damage).

Split germs in sorghum are ignored (must have visible sprout for sprout damage).

In any crop, clean cut insect chewed germs or insect cut areas that you can see the bottom of the hole are not considered insect damaged, thus do not count as damaged kernels or broken kernels and are ignored. HOWEVER, they could impact other colors or classes if color or class is clearly distinguished, or impact foreign material if found in another crop.

In corn, wheat, rye, and sorghum, broken kernels or pieces of kernels not otherwise damaged that are large enough to have not been removed in sieving or dockage procedures do not count as broken kernels or damaged kernels and are ignored. HOWEVER, they could impact other colors or classes if color or class is clearly distinguished, or impact foreign material if found in another crop. (This situation does not apply to soybeans, because such broken kernels would count as splits)

Purple mottled soybeans are ignored since they are not considered damaged kernels. The special grade purple mottled or stained is based on a visual observation of the base sample and must be given as an appearance factor.

At least 50% of the kernels in admixture should clearly show the intended characteristic injury as described FGIS \_\_\_\_\_. For example, if 50% of the kernels are insect damaged and 50% are insect chewed the subsection should be considered insect damage. Heat-damage, mold-damage, and other variable injuries should follow this same guideline. If heat-damage is present in an admixture it is the only damage to be recorded for that admixture.

Any other special grade item (ie. garlic bulbs, ergot) or sample grade item (ie. stones, crotalaria, pieces of glass, animal filth, castor, cockleburrs) that may be shown in the hand-picked sub-sections are ignored for assigning special or sample grades, since data for all special and sample grades is based on the base sample or larger cuts and must be given. HOWEVER, if these items are shown in the sub-sections, they are counted by their weight against foreign material.

6. Recording Answers - Commercial grades shall be designated and written out on the answer form in the manner followed in commerce according to the FGIS *Grain Inspection Handbook - Book II, Grain Grading Procedures*. Abbreviations are not acceptable. The factor or factors which determine the numerical grade, excepting Grade No. 1, must be stated on the answer form. Official FGIS standard abbreviations may be used for listing any factor(s) determining the grade (see Scoring System for Grain Grading Scorecards), including sample grade factors and appearance factors. To record numerical grades in the columns in the factor table where more than one grade has the same percent limit e.g. (heat damaged wheat is 0.2% for both grades 1 and 2 and contrasting classes is 10.0% for both grades 4 and 5) the **Sliding Scale Rule** is used. Record the lower grade only if another grading factor such as TW, FM, or DKT is also graded at the lower limit. If this is the only grade determining factor, or if another grading factor pulls the grade below the lower limit, record the higher grade. Each contestant must provide his/her own copy of the Grain Standards Handbook.
7. The sub-classes, White Club Wheat and Western White Wheat; and the class, Unclassed Wheat; and the special grades, Treated Wheat and Mixed Grain, shall not be included in Grain Grading. Tannin Sorghum and the special grades Flint Corn, Flint and Dent Corn, Bleached Oats and Waxy Corn may be used as a given factors in Grain Grading. ~~Wheat subclass determinations must be made by the contestant, when percentages of hard and vitreous kernels do not accompany packets.~~ Optional grade designations will not be included in grain grading.
8. **Triticale**, Hard Red Spring, Hard Red Winter, and Soft Red Winter Wheat will not be mixed together in base samples of Rye, White Wheat and Durum Wheat, although each may be added individually. When **triticale** or any of the red vulgare wheats are to be considered as a class mixture in a base sample of another red vulgare wheat, the percentage will be given. The base samples of red vulgare wheat must be typical of the market class. Red durum wheat will not be used in grain grading. When Hard White Wheat is to be considered as a class mixture in a base sample of Soft White Wheat or Amber Durum Wheat, and vice versa, the percentages of the mixture will be given.
9. Heat damaged barley, heat damaged oats, heat damaged rye, sick wheat, sick rye, injured by mold, injured by heat, and injured by frost damage in barley, green soybeans, stinkbug stung kernels in

soybeans, bicolored soybeans, excessive smut, large stones, wreckage, diatomaceous earth, and commonly recognized harmful or toxic substances will not be used as factors in grading. This does not prohibit the factor heat damage in barley, oats and rye when the damage is other grains. Two-rowed and six-rowed barley will not be mixed.

10. The following information must be given for barley grading: Suitable malting type, aleurone color, all barley damages, broken kernels, and skinned and broken kernels.
11. All oat damages must be given for oat grading.
12. Green damaged soybeans and soybeans damaged due to heating must be given for soybean grading.
13. A maximum of 4 factors may be used to determine the numerical grade in grain grading.
14. Other grains and foreign material shown in the sub-sections of the grain grading samples must be a suitable representation from the identification list.
15. Information in the Grain Inspection Handbook - Book II, Grain Grading Procedures from Tables on 1) Certifying Percentages and Test Weight, 2) Basis of Determination, 3) Insect Infestation, 4) Sample Grade Factors, 5) Contrasting Classes (wheat only), and 6) IDK determination (wheat only) should be added to student's Grain Grading books and will be used in the contest. Tables included are: Chapter 1 General Information - Table 5; Wheat - Tables 2, 4, 5, 7 and 8; Barley - Tables 4, 6 and 7; Corn, Sorghum, Soybeans, Oats, and Rye - Tables 2, 4, and 5.

Images of grain grading damages may be included in students' Grain Grading books and/or FGIS Grain Grading mats may be used during the grain Grading portion of the contest.

For References, the Grain Inspection Handbook - Book II, Grain Grading Procedures can be located at:

<https://www.ams.usda.gov/sites/default/files/media/Book2.pdf>. The interactive resources site at:

<https://www.ams.usda.gov/resources/interactive-resources> has both "eBooks" and "eLearning" sections with resources including Grain Grading Tutorials for grading each type of grain, with images of interpretive line slides. A complete book of Visual Reference Images can be located here. The abbreviated US Standards are located at <https://www.ams.usda.gov/grades-standards/grain-standards>

## Scoring System for Grain Grading Score Cards – 75 points each

**Table Factors** – Minus 3 points for each wrong box. Recorded by placing appropriate numerical grade in "Grade Box" at the bottom of each factor column on the answer card. All boxes must be filled in with appropriate grade, including number 1. Each box will be scored as correct or incorrect against the grade level on the key. The number of grades off does not matter. Area marked "Level" is for contestant to record data and make calculations. It will not be scored. Record sample grade factors as "SG," "Sample," or "Sample Grade." For wheat factors disregarded if Mixed class (ie. CCL, WOCL) record "N/A", "X", leave blank, or write "Mixed" in box. For WOCL in Durum wheat, record "N/A", "X", or leave blank.

### Complete Grade Designation

Grade -10 for each grade off (max -30). Numerical grade must be written in grade designation area on answer card (if numerical grade is omitted but is correct in table -10; if numerical grade is omitted but one grade off in table -20)

Crop Omitted -5  
Class Wrong -10 (except -5 for Durum Wheat, Hard Red Spring Wheat, and Barley)  
Subclass Wrong -5 (applies to Durum Wheat, Hard Red Spring Wheat, and Barley)

- Special grades deduct 5 points for each one omitted or wrongly added.
- Deduct 5 points if Flint Corn % is not listed (i.e. Flint and Dent, Flint Corn 7%) (round to whole number)
- Dockage deduct 5 points if omitted or wrong value. If dockage is 0.0% don't list for all crops except wheat and rye. If listed, deduct one point. For wheat and rye, a measurable amount of dockage which rounds to 0.0% is listed as 0.0%. If not listed, deduct one point.
- When Light Garlicky is stated for Garlicky, or Light Smutty for Smutty, and vice versa, deduct only 5 points.
- Improper order of special grades (not alphabetical), deduct a maximum of 2 points.
- Special grades or dockage wrongly written, deduct 1 point for each infraction.

**Factors for Determination Grade** - Must be written out (or use official FGIS standard abbreviations) in the determining factors area on answer card.

|               |         |     |         |     |                             |
|---------------|---------|-----|---------|-----|-----------------------------|
| One factor    | 1 Wrong | -24 |         |     |                             |
| Two factors   | 2 Wrong | -24 | 1 Wrong | -12 |                             |
| Three factors | 3 Wrong | -24 | 2 Wrong | -16 | 1 Wrong -8                  |
| Four factors  | 4 Wrong | -24 | 3 Wrong | -18 | 2 Wrong -12      1 Wrong -6 |

When more factors are given than are actual, score on the basis of number of factors given by the contestant. For example, if four factors are given by the contestant but two are actual, deduct 12. Standard abbreviations for table factors are listed below\*. Official abbreviations for sample grade and appearance factors may also be used (ANFL, BADW, CBUR, COFO, FSUB, HTG, IDK, SLW, TOM, etc.).

### \*STANDARD ABBREVIATIONS FOR DETERMINING FACTORS ALLOWED ON SCORE CARDS

|      |                                     |      |                             |
|------|-------------------------------------|------|-----------------------------|
| BCFM | Broken Corn and Foreign Material    | SBLY | Sound Barley                |
| BN   | Broken Kernels                      | SHBN | Shrunken and Broken Kernels |
| BNFM | Broken Kernels and Foreign Material | SKBN | Skinned and Broken Kernels  |
| CCL  | Contrasting Classes                 | SO   | Sound Oats                  |
| DEF  | Defects (Total)                     | SPL  | Splits                      |
| DK   | Damaged Kernels                     | SMT  | Suitable Malting Types      |
| DKT  | Damaged Kernels (Total)             | THIN | Thin Barley, Thin Rye       |
| FM   | Foreign Material                    | TW   | Test Weight Per Bushel      |
| FMOW | Foreign Matter Other Than Wheat     | WO   | Wild Oats                   |
| HT   | Heat-damaged Kernels                | WOCL | Wheat of Other Classes      |
| OG   | Other Grains                        |      |                             |

Official abbreviations for any sample grade factors and any other grade determining appearance factors may also be used but must be written exactly per FGIS standards.

- Incorrectly written determining factors, deduct 1 point for each factor.
- No deduction is made with regard to the order of writing numerical and sample grade determining factors.
- For Samples grading U.S. No. 1, the correct determining factor is "None" or the box is left blank.

**Additional Deductions:** Incorrectly written grade (commas, abbreviations, capitalization errors), deduct 1 point for each infraction (maximum of 2 points).

# List From Which Material Will Be Selected For Commercial Grain Grading

**Barley:** Any variety or type of cultivated barley.

**Corn:** White, Yellow and Mixed Corn, excluding stripe corn.

**Oats:** Any variety or type of cultivated oat.

**Rye:** Any rye variety or type.

**Sorghum:** Sorghum, White Sorghum, Tannin Sorghum, and Mixed Sorghum.

**Soybeans:** Yellow or Mixed Soybeans, excluding bicolored soybeans.

**Wheat:** Hard Red Winter, Soft Red Winter, Hard Red Spring, Durum, Soft White, Hard White, and Mixed Wheat.

Correct form and order for writing grade, special grade and factors in grain grading is given below. Any deviation from these examples will result in points taken away. Only grain grading factors listed under the factors of each crop will be allowed in the contest. Special grades shall be written in alphabetical order.

## BARLEY

**Example 1:** U.S. No. 2 Six-rowed Malting Barley, Dockage 1.5%

**Example 2:** U.S. No. 2 Two-rowed Barley, Blighted, Ergoty, Garlicky, Infested, Smutty

**Example 3:** U.S. No. 3 Barley, Infested, Dockage 1.0%

**Factors:**

|                                         |                 |
|-----------------------------------------|-----------------|
| Test Weight Per Bushel                  | Broken Kernels  |
| Sound Barley                            | Damaged Kernels |
| Suitable Malting Types                  | Other Grains    |
| Heat-damaged Kernels                    | Thin Barley     |
| Wild Oats                               | Crotalaria      |
| Foreign Material                        | Musty           |
| Skinned and Broken Kernels              | Stones          |
| Commercially Objectionable Foreign Odor | Class           |
| Sour                                    | Castorbeans     |
| Heating                                 | Cockleburs      |
| Unknown Foreign Substance               | Animal Filth    |

## CORN

**Example 1:** U.S. No. 2 Mixed Corn, Flint, Infested, Waxy

**Example 2:** U.S. Sample Grade Yellow Corn, Flint and Dent, Flint Corn 15%, Infested

**Factors:**

|                                         |              |
|-----------------------------------------|--------------|
| Test Weight Per Bushel                  | Animal Filth |
| Broken Corn and Foreign Material        | Glass        |
| Damaged Kernels (Total)                 | Castorbeans  |
| Heat-damaged Kernels                    | Cockleburs   |
| Commercially Objectionable Foreign Odor | Crotalaria   |
| Sour                                    | Heating      |

|                                     |       |
|-------------------------------------|-------|
| Unknown Foreign Substance<br>Stones | Musty |
|-------------------------------------|-------|

## OATS

**Example 1:** U.S. No. 2 Bright, Extra-Heavy Oats, Bleached, Ergoty, Garlicky, Infested, Smutty

**Example 2:** U.S. No. 3 Heavy Oats, Thin

**Factors:**

|                                         |               |
|-----------------------------------------|---------------|
| Test Weight Per Bushel                  | Badly Stained |
| Sound Oats                              | Musty         |
| Heat-damaged Kernels                    | Sour          |
| Foreign Material                        | Crotalaria    |
| Commercially Objectionable Foreign Odor | Heating       |
| Slightly Weathered                      | Stones        |
| Wild Oats                               | Glass         |
| Materially Weathered                    | Castorbeans   |
| Animal Filth                            | Cocklebur     |
| Unknown Foreign Substance               |               |

## RYE

**Example 1:** U.S. No. 2 Plump Rye, Ergoty, Infested, Light Garlicky, Light Smutty, Dockage 1.2%

**Example 2:** U.S. No. 3 Rye, Garlicky, Smutty, Dockage 0.1%

**Factors:**

|                                         |              |
|-----------------------------------------|--------------|
| Test Weight Per Bushel                  | Sour         |
| Damaged Kernels (Total)                 | Musty        |
| Heat-damaged Kernels                    | Glass        |
| Foreign Material (Total)                | Crotalaria   |
| Foreign Matter Other Than Wheat         | Animal Filth |
| Thin Rye                                | Heating      |
| Commercially Objectionable Foreign Odor | Stones       |
| Unknown Foreign Substance               | Castorbeans  |

## SORGHUM

**Example 1:** U.S. No. 2 Tannin Sorghum, Infested, Smutty, Dockage 1.0%

**Example 2:** U.S. Sample Grade Sorghum, Infested, Smutty

**Factors:**

|                                         |                 |
|-----------------------------------------|-----------------|
| Test Weight Per Bushel                  | Musty           |
| Damaged Kernels (Total)                 | Sour            |
| Heat-damaged Kernels                    | Badly Weathered |
| Commercially Objectionable Foreign Odor | Stones          |
| Broken Kernels and Foreign Material     | Crotalaria      |
| Foreign Material                        | Glass           |
| Heating                                 | Castorbeans     |
| Distinctly Discolored                   | Cocklebur       |
| Unknown Foreign Substance               | Animal Filth    |
| Total Other Material                    |                 |

## SOYBEANS

**Example 1:** U.S. No. 3 Mixed Soybeans, Garlicky, Infested, Purple Mottled or Stained

**Example 2:** U.S. Sample Grade Yellow Soybeans

**Factors:**

|                                         |                           |
|-----------------------------------------|---------------------------|
| Damaged Kernels (Total)                 | Musty                     |
| Heat-damaged Kernels                    | Heating                   |
| Splits                                  | Sour                      |
| Foreign Material                        | Animal Filth              |
| Total Other Material                    | Castorbeans               |
| Commercially Objectionable Foreign Odor | Crotalaria                |
| Stones                                  | Unknown Foreign Substance |

## WHEAT

**Example 1:** U.S. No. 2 Soft White Wheat, Ergoty, Garlicky, Infested, Light Smutty, Dockage 1.3%

**Example 2:** U.S. No. 3 Dark Northern Spring Wheat, Smutty, Dockage 0.0%

**Factors:**

|                                |                                         |
|--------------------------------|-----------------------------------------|
| Test Weight Per Bushel         | Heating                                 |
| Heat-damaged Kernels           | Musty                                   |
| Damaged Kernels (Total)        | Sour                                    |
| Foreign Material               | Stones                                  |
| Shrunk and Broken Kernels      | Castorbeans                             |
| Defects (Total)                | Crotalaria                              |
| Contrasting Classes            | Glass                                   |
| Wheat of Other Classes (Total) | Animal Filth                            |
| Insect Damaged Kernels         | Commercially Objectionable Foreign Odor |
| Total Other Material           | Unknown Foreign Substance               |

Wheat of Other Classes is not a factor in Durum wheat – in the box on the answer form write “N/A”, “X”, or leave blank

## Seed Analysis Special Rules

1. Time — One and one-half hours. Value 600 points. Ten samples - 60 points per sample. No more than 60 points may be deducted per sample.
2. The samples will be selected from any pure cultivar of the following crops. Base sample weights will be as listed. No more than five base samples from small seeded crops listed below the line (base weight of 5 g or less) may be used in one contest.

| Weight of<br>Sample in<br>grams | Base Samples                                                                               |
|---------------------------------|--------------------------------------------------------------------------------------------|
| 100                             | large-seeded legumes – soybean, cowpea, fieldpea, fieldbean, chickpea                      |
| 50                              | small grains, lentil, rice, safflower, oil sunflower, grain sorghum, pop corn, hairy vetch |
| 20                              | common buckwheat                                                                           |
| 15                              | flax, proso millet, annual canarygrass, pearl millet, daikon radish                        |

|   |                                                                                                                                                       |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 | crownvetch, foxtail millet, alfalfa, sweetclover, red clover, crimson clover, tall fescue, perennial ryegrass, smooth brome grass, crested wheatgrass |
| 2 | white clover, alsike clover, birdsfoot trefoil, orchardgrass, switchgrass (w/o glumes)                                                                |
| 1 | Kentucky bluegrass, reed canarygrass, timothy, bermudagrass                                                                                           |

3. The contestant must classify and name, according to common name only, all seeds mixed with the base sample. The classification shall be (a) other crops and/or varieties, (b) prohibited noxious weeds, (c) restricted noxious weeds, and (d) common weeds. (See the official answer form, special rule 6, and restrictions on the identification list.)
4. In preparing samples, all admixtures will consist of four (4) or more mature, non-damaged, non-diseased seeds. Occasionally a single (1) contaminant seed may be present but will not be considered as an admixture. No single (1) contaminant seeds will be intentionally added to seed analysis samples. Contestants need not necessarily find these numbers to call an admixture, but it is their responsibility if they call an admixture but find less than four. Only impurities listed as permissible on the identification list may be used. Admixtures used in seed analysis must be in the same form as that acceptable for the identification phase of the contest.
5. Scoring system — The total score per sample shall be 60 points. The following points shall be allotted to each impurity for proper classification: Other crops and/or varieties, 1; prohibited noxious weeds, 3; restricted noxious weeds, 2; and common weeds, 1. The deduction shall be according to the category where it belongs rather than where the contestant has placed it. The remaining points shall be allotted equally, rounding to the nearest whole number, for the proper identification of the impurities. The term approximately is used in order that scoring can be done in whole points. (Subtract the total points allotted to classification from 60 and divide the remainder by the number of impurities present.) When less than 4 are present, 15 points (total for classification and identification) shall be allotted to each. This allows a maximum deduction of 15 points for an impurity not called, and 7 points for listing an impurity not present. The contestant who calls an impurity which is not present (extras) shall be penalized approximately one-half of the points allotted 13 to the proper identification of an impurity present. If a contestant calls an impurity in a sample which contains none, 15 points shall be deducted for a score of 45 points. Two impurities called in a pure sample will cause a loss of 30 points, etc.
  - A. Missing and Extra: In case of incorrect identification by the contestant, such as mistaking tall morningglory for field bindweed, the above rules allow two penalties on the total score; one for not calling field bindweed and another for calling tall morningglory as extra. Common examples for missing and extra include but are not limited to:

| Student Answer    | Correct Answer        |
|-------------------|-----------------------|
| flint corn        | dent corn             |
| hedge bindweed    | field bindweed        |
| kidney bean       | red kidney fieldbean  |
| hard red winter   | hard red winter wheat |
| honey amber sorgo | honey sorgo           |

When multiple varieties or types are possible but the crop is not identified correctly (ie. smooth yellow fieldbean vs. smooth yellow fieldpea), the full deduction for missing plus an extra is taken, not -1 for wrongly written.

When two varieties or types are possible on the list, but the wrong one is called (black hilum soybean vs. yellow hilum soybean, common ragweed vs. giant ragweed), deduct points for both missing and for an extra.

- B. Wrongly Written: One point will be deducted for wrongly written names. The following examples are wrongly written include but are not limited to:

| Student Answer       | Correct Answer         |
|----------------------|------------------------|
| einkorn wheat        | einkorn                |
| soft white wheat     | white wheat            |
| hard white wheat     | white wheat            |
| sowthistle           | perennial sowthistle   |
| yellow flax          | flax                   |
| great lupine         | white lupine           |
| black sumac sorgo    | black amber sorgo      |
| kidney fieldbean     | red kidney fieldbean   |
| durum wheat          | amber durum wheat      |
| black Laredo soybean | black soybean          |
| sorghum              | grain sorghum          |
| white sesame         | sesame                 |
| pepperweed           | greenflower pepperweed |
| common cocklebur     | cocklebur              |
| yellow oat or oat    | white oat              |

- C. Missing, Not Extra: When the variety or type is not called (ie. soybean vs. yellow hilum soybean, ragweed vs. giant ragweed), the full deduction for missing is taken, but no additional points for an extra. Common examples of missing, not extra include but are not limited to:

| Student Answer  | Correct Answer         |
|-----------------|------------------------|
| fieldpea        | smooth yellow fieldpea |
| oat             | black oat              |
| corn            | dent corn              |
| wheat           | white wheat            |
| white fieldbean | navy fieldbean         |
| white mustard   | yellow mustard         |

- D. Duplicates: Correctly identified admixtures listed more than once will not be counted as others. Classification points will be deducted for all extra placements of a correctly identified admixture. For details on calculating the sample score in seed analysis, please see the [subsection](#) below.

6. All admixtures shall be named according to common names exactly as printed in the identification list with its restrictions, except as indicated in the special rules that follow:

- A. **Wheat** – Base material shall be any pure sample of red wheat, white wheat, or durum wheat.
- Red wheats will not be used as mixtures in red wheat or two or more will not be used as admixtures in other wheat samples or the crop samples.
  - No white wheat varieties will be used as mixtures in white wheat.
  - Wheat types used as admixtures in other wheats and other crops, where permissible, will be identified as red wheat, white wheat, amber durum wheat, einkorn, emmer or spelt.
- B. **Oat** – Base material shall be any pure sample of white oat (white or yellow). Only white oat and black oat will be used as admixtures.
- Gray oat and hulled oat varieties will not be used as admixtures in oat samples or other crop samples.
  - Any variety of black oat used as an admixture will not exhibit a sucker mouth rachilla.
  - Both white oat and black oat may be used as an admixture in other crops alone or together.

- iv. Wild oat, if used as an admixture, will contain some gray and/or black color and have a sucker mouth rachilla.
- C. **Rye** – Base material shall be any pure sample of rye. Rye used as an admixture in other crops will be identified only as rye. Rye varieties or types will not be mixed in rye samples.
- D. **Grain Sorghum** – Base material shall be any pure cultivar of grain sorghum (white, yellow, red, brown).
  - i. Any color of grain sorghum may be found in other crops and will be identified as grain sorghum.
  - ii. All sudangrass and sorgo must be shown in the glumes. All may be found in grain sorghum base samples or any other crop.
- E. **Flax** – Base material shall be any pure sample of flax.
- F. **Barley** – Base material shall be any pure sample of barley except the hull-less type.
  - i. Two-rowed and six-rowed barley will not be mixed.
  - ii. Barley, when found as an admixture in any other crop sample, will be identified only as barley.
  - iii. Hull-less barley types are not allowed in seed analysis.
- G. **Large-seeded legumes** – Base material shall be any pure sample of cowpea, soybean, chickpea, fieldbean, or fieldpea variety or type found on the identification list.
  - i. Black and brown hilum soybean will not be used together in any combination but may be used singly in any other soybean type, other large-seeded legumes or any other crop sample.
  - ii. Smooth green and wrinkled fieldpea will not be used together in any combination but may be used singly in Austrian Winter fieldpea, other large-seeded legumes, or any other crop sample. Smooth yellow fieldpea may be used in smooth green, wrinkled or Austrian winter fieldpea base samples or any other crop and in combination with smooth green or wrinkled fieldpea.
- H. **Small-seeded legumes and grasses** – Base material shall be any pure sample of alfalfa, red clover, sweetclover, alsike clover, white clover, birdsfoot trefoil, crownvetch, crimson clover, reed canarygrass, timothy, tall fescue, perennial ryegrass, smooth brome grass, orchardgrass, Kentucky bluegrass, crested wheatgrass, switchgrass, Bermudagrass, annual canarygrass, foxtail millet, proso millet or pearl millet.
  - i. The following will not be mixed in any combination:
    - a. Black medic, alfalfa, and sweetclover
    - b. Alsike clover and white clover
    - c. Annual bluegrass and Kentucky bluegrass
  - ii. Perennial ryegrass will not be mixed in a base sample of tall fescue and vice versa.
  - iii. Crested wheatgrass will not be mixed in a base sample of orchardgrass and vice versa
  - iv. Timothy will not be mixed in a base sample of bermudagrass.
- I. **Rice** – Base material shall be any pure sample of rice, in the hull.
  - i. Long grain rice and short grain rice will not be mixed. When either is found as an admixture, the admixture will be identified as rice.
- J. **Miscellaneous crops** – Base material shall be any pure sample of common buckwheat, lentil, safflower, oil sunflower, or daikon radish.
  - i. Confectionary sunflowers will not be mixed in a base sample of oilseed sunflowers.
  - ii. Cultivated sunflowers found as admixtures in other crops will be identified as confectionary sunflower or oilseed sunflower.
- K. **Special rules for other permissible admixtures**
  - i. Common vetch and hairy vetch will not be mixed. When either is found as an admixture, the admixture will be identified as vetch.
- L. **Triticale** – No smooth seeded varieties will be used in seed analysis.

## CALCULATING THE SAMPLE SCORE IN SEED ANALYSIS

The total score for a Seed Analysis sample is 60 points. Points are allotted to each impurity as follows: other crops and/or varieties = 1; prohibited noxious weeds = 3; restricted noxious weeds = 2; and common weeds = 1. The deduction shall be according to category where it belongs rather than where the contestant places it. Spelling errors are not discounted.

**Example:** A wheat sample contains:

|                                     |                                 |
|-------------------------------------|---------------------------------|
| <u>Other crops and/or varieties</u> | <u>Restricted noxious weeds</u> |
| white oat                           | white campion                   |
| flax                                | curly dock                      |
| barley                              | cheat                           |
| rye                                 | oxeye daisy                     |
| <u>Prohibited noxious weeds</u>     | <u>Common weeds</u>             |
| quackgrass                          | rescuegrass                     |
| field bindweed                      | wild sunflower                  |

Multiple each admixture by the number assigned for proper classification and add totals:

|                              |                                |
|------------------------------|--------------------------------|
| Other crops and/or varieties | = 4 x 1 = 4                    |
| Prohibited noxious weeds     | = 2 x 3 = 6                    |
| Restricted noxious weeds     | = 4 x 2 = 8                    |
| Common weeds                 | = 2 x 1 = 2                    |
| <b>Totals</b>                | <b>12 admixtures 20 points</b> |

60 points per sample -20 points from the table above = 40 points to be divided amongst the 12 admixtures.  $40/12 = 3.3$ . Therefore, rounding down (3.3 to 3) gives the proper identification points for each admixture. Thus,

$3 + 1 = 4$  for Other crops and/or varieties

$3 + 3 = 6$  for Prohibited noxious weeds

$3 + 2 = 5$  for Restricted noxious weeds

$3 + 1 = 4$  for Common weeds

If the remainder had been 0.5 or more, one must round up which would give 4 instead of 3. Therefore, 5, 7, 6 and 5 respectively would be the total points for each admixture.

**As stated in special rule 5:** The contestant who calls an impurity which is not present shall be penalized approximately  $1/2$  of points allotted to proper identification of an impurity present. In this case the proper identification is worth 3.3 points. Therefore, calling an impurity which is not present we divide  $3.3/2 = 1.65$ . Therefore, rounding up ( $1.65=2$ ) gives the proper deduction for extras.

## Identification special rules

1. Time – one and one-half hours. Value 600 points. The number of samples in this section shall be 200.
2. Contestants will record only the common name for the contest.
3. The broad leaf plants exhibited must be in post bud, flower and/or fruiting stages and display at least one leaf unless otherwise specified. The flower color of alfalfa may range from blue, to purple, to white, to yellow to variegated.

4. All crop plant specimens of *Triticum*, *Hordeum*, *Avena*, *Secale*, *Triticale*, *Oryza*, *Sorghum*, and all millets must be mature and all seed samples must be mature to be used in the contests. Grasses must have full extension of the inflorescence out of the flag leaf sheath.
5. The correct identification of each specimen shall be worth 3 points.
6. Correct spelling will be required and common names must be written exactly as given in the identification list. The contestant will be cut two-tenths of one point for each sample with one or more misspelled words. Incorrect usage of capitals, hyphens, periods, commas, and spaces between or within words shall be considered as misspelled.
  - a. Example: two rowed barley instead of two-rowed barley
7. Common names which show proper identification but are improperly written shall be discounted one point as wrongly written. A common name can be wrongly written only once. Examples include but are not limited to:

| Student Answer                 | Correct Answer                |
|--------------------------------|-------------------------------|
| wild nutsedge                  | yellow nutsedge               |
| broadleaf plantain             | blackseed plantain            |
| purple mottled                 | purple stain of soybean       |
| great white northern fieldbean | great northern fieldbean      |
| common cocklebur               | cocklebur                     |
| sorghum                        | grain sorghum                 |
| oil sunflower                  | oilseed sunflower             |
| white sorghum                  | grain sorghum                 |
| white oat                      | oat ( <i>shown as plant</i> ) |
| durum wheat                    | amber durum wheat             |
| Laredo soybean                 | black soybean                 |
| black sorgo                    | black amber sorgo             |
| purple spotted soybean         | purple stain of soybean       |
| purple seed stain              | purple stain of soybean       |
| black turtle soybean           | black soybean                 |
| Australian winter pea          | Austrian winter fieldpea      |
| morningglory                   | tall morningglory             |
| Canadian thistle               | Canada thistle                |
| 2-rowed barley                 | two-rowed barley              |

8. Names which show the incorrect crop or weed name will be considered incorrect and will be discounted 3 points. Examples include but are not limited to:

| Student Answer                | Correct Answer                                 |
|-------------------------------|------------------------------------------------|
| wheat                         | hard red winter wheat ( <i>shown as seed</i> ) |
| eastern silverleaf nightshade | eastern black nightshade                       |
| hiland cotton                 | upland cotton                                  |
| smooth green fieldpea         | fieldpea ( <i>shown as plant</i> )             |
| sumac sorghum                 | sumac sorgo                                    |
| yellow hilum bean             | yellow hilum soybean                           |
| purplehull fieldpea           | purplehull cowpea                              |
| hard red spring barely        | hard red spring wheat                          |
| field pennygrass              | field pennycress                               |
| black hilum                   | black hilum soybean                            |
| amber durum                   | amber durum wheat                              |

9. Disease samples will be labeled with the word "disease"
10. The canola plant specimen must have clasping upper leaves.

## Identification List

Symbols: (s) seed only (b) both plant and seed shown  
(p) plant only (e) either plant or seed or both shown

Common names must be written exactly as written below.

NOTE: Any variety, crop, or weed seed preceded by a double asterisk (\*\*) cannot be used as an admixture in any seed analysis sample. Plant only items cannot be used in seed analysis.

1) Crop common and scientific names derived from: Glossary of Crop Science Terms, Crop Science Society of America, Madison, WI, (1992). <https://www.crops.org/publications/crops-glossary>

2) Plant disease common and scientific names derived from: Common Names for Plant Diseases, Committee on standardization of common names for plant diseases of the American Phytopathological Society 1978-1993, APS Press, (1994).  
<https://www.apsnet.org/edcenter/resources/commonnames/Pages/default.aspx>

3) Weed common names to be used in the contest are determined by vote of the Coaches Committee and must be written by the contestant as listed below. Since most references refer to multiple common names for a given species, there is not an official list of common names that provide a suitable reference. Common names used are those found in the USDA Germplasm Resources Information Network (GRIN) or USDA PLANTS Database.

### FIELD CROPS

|      |                                                                                                |     |                                         |
|------|------------------------------------------------------------------------------------------------|-----|-----------------------------------------|
| 1    | hard red winter wheat                                                                          | (s) | <i>Triticum aestivum ssp. aestivum</i>  |
| 4    | soft red winter wheat                                                                          | (s) | <i>Triticum aestivum ssp. aestivum</i>  |
| 6    | hard red spring wheat                                                                          | (s) | <i>Triticum aestivum ssp. aestivum</i>  |
| 8    | hard white wheat                                                                               | (s) | <i>Triticum aestivum ssp. aestivum</i>  |
| 9    | soft white wheat                                                                               | (s) | <i>Triticum aestivum ssp. aestivum</i>  |
| 10   | wheat<br>(note: common wheat different from amber durum, white club, einkorn, emmer and spelt) | (p) | <i>Triticum aestivum ssp. aestivum</i>  |
| 12   | amber durum wheat                                                                              | (s) | <i>Triticum aestivum ssp. Durum</i>     |
| 13** | white club wheat                                                                               | (p) | <i>Triticum aestivum ssp. Compactum</i> |
| 14   | einkorn                                                                                        | (e) | <i>Triticum monococcum</i>              |
| 15   | emmer                                                                                          | (e) | <i>Triticum dicoccum</i>                |
| 16   | spelt                                                                                          | (e) | <i>Triticum aestivum ssp. Spelta</i>    |
| 19   | rye                                                                                            | (e) | <i>Secale cereale</i>                   |
| 20   | triticale                                                                                      | (e) | <i>Triticosecale spp.</i>               |
| 21   | long grain rice                                                                                | (e) | <i>Oryza sativa</i>                     |
| 22   | short grain rice                                                                               | (e) | <i>Oryza sativa</i>                     |
| 23   | wild rice                                                                                      | (s) | <i>Zizania aquatica</i>                 |
| 24   | dent corn<br>(note: more than 50% dented kernels shown)                                        | (s) | <i>Zea mays ssp. Indentata</i>          |
| 25   | sweet corn                                                                                     | (s) | <i>Zea mays ssp. Saccharate</i>         |
| 26   | pop corn                                                                                       | (s) | <i>Zea mays ssp. Everta</i>             |
| 27   | flint corn                                                                                     | (s) | <i>Zea mays ssp. Indurate</i>           |
|      |                                                                                                |     |                                         |

|       |                                                                                     |            |                                              |
|-------|-------------------------------------------------------------------------------------|------------|----------------------------------------------|
| 30**  | Nepal barley<br>(note: may be any two-rowed or six-rowed hooded, hull-less variety) | (e)        | <i>Hordeum vulgare</i>                       |
| 32    | six-rowed barley                                                                    | (e)        | <i>Hordeum vulgare</i>                       |
| 33    | two-rowed barley                                                                    | (e)        | <i>Hordeum vulgare</i>                       |
| 34    | white oat<br>(note: may be white or yellow)                                         | (s)        | <i>Avena sativa</i>                          |
| 36    | black oat                                                                           | (s)        | <i>Avena strigosa</i>                        |
| 37**  | hull-less oat                                                                       | (s)        | <i>Avena nuda</i>                            |
| 38    | oat                                                                                 | (p)        | <i>Avena sativa</i>                          |
| 101   | grain sorghum<br>(note: may be any tannin or non-tannin type)                       | (e)        | <i>Sorghum bicolor</i>                       |
| 106   | black amber sorgho                                                                  | (e)        | <i>Sorghum bicolor</i>                       |
| 107   | honey sorgho                                                                        | (e)        | <i>Sorghum bicolor</i>                       |
| 109   | sumac sorgho                                                                        | (p)        | <i>Sorghum bicolor</i>                       |
| 110   | broomcorn                                                                           | (p)        | <i>Sorghum bicolor</i>                       |
| 112   | Sweet sudangrass                                                                    | (e)        | <i>Sorghum bicolor</i> var. <i>sudanense</i> |
| 201   | big bluestem                                                                        | (p)        | <i>Andropogon gerardi</i>                    |
| 202   | little bluestem                                                                     | (p)        | <i>Schizachyrium scoparium</i>               |
| 203   | blue grama                                                                          | (p)        | <i>Bouteloua gracilis</i>                    |
| 204   | sideoats grama                                                                      | (p)        | <i>Bouteloua curtipendula</i>                |
| 205** | buffalograss                                                                        | (p or bur) | <i>Bouteloua dactyloides</i>                 |
| 206   | Canada wildrye                                                                      | (p)        | <i>Elymus canadensis</i>                     |
| 207   | Russian wildrye                                                                     | (p)        | <i>Psathyrostachys junceus</i>               |
| 208   | Indiangrass                                                                         | (p)        | <i>Sorghastrum nutans</i>                    |
| 209   | sand lovegrass                                                                      | (e)        | <i>Eragrostis trichodes</i>                  |
| 210   | switchgrass                                                                         | (e)        | <i>Panicum virgatum</i>                      |
| 211   | crested wheatgrass                                                                  | (e)        | <i>Agropyron cristatum</i>                   |
| 212   | bermudagrass                                                                        | (e)        | <i>Cynodon dactylon</i>                      |
| 214   | Kentucky bluegrass                                                                  | (e)        | <i>Poa pratensis</i>                         |
| 216   | dallisgrass                                                                         | (e)        | <i>Paspalum dilatatum</i>                    |
| 217   | orchardgrass                                                                        | (e)        | <i>Dactylis glomerata</i>                    |
| 218   | perennial ryegrass                                                                  | (e)        | <i>Lolium perenne</i>                        |
| 219   | bentgrass                                                                           | (e)        | <i>Agrostis</i> spp.                         |
| 220   | reed canarygrass                                                                    | (e)        | <i>Phalaris arundinacea</i>                  |
| 221   | rhodesgrass                                                                         | (e)        | <i>Chloris gayana</i>                        |
| 222   | smooth brome                                                                        | (e)        | <i>Bromus inermis</i>                        |
| 223   | tall fescue                                                                         | (e)        | <i>Festuca arundinacea</i>                   |
| 225   | timothy                                                                             | (e)        | <i>Phleum pratense</i>                       |
| 226   | foxtail millet                                                                      | (e)        | <i>Setaria italica</i>                       |
| 227   | proso millet                                                                        | (e)        | <i>Panicum miliaceum</i>                     |
| 228   | pearl millet                                                                        | (e)        | <i>Pennisetum glaucum</i>                    |
| 229   | annual canarygrass                                                                  | (s)        | <i>Phalaris canariensis</i>                  |
| 301   | alfalfa                                                                             | (e)        | <i>Medicago sativa</i>                       |
| 302   | sweeclover                                                                          | (e)        | <i>Melilotus</i> spp.                        |
| 303   | arrowleaf clover                                                                    | (p)        | <i>Trifolium vesiculosum</i>                 |
| 304   | alsike clover                                                                       | (e)        | <i>Trifolium hybridum</i>                    |
| 305   | large hop clover                                                                    | (e)        | <i>Trifolium campestre</i>                   |
| 306   | crimson clover                                                                      | (e)        | <i>Trifolium incarnatum</i>                  |
| 307   | red clover                                                                          | (e)        | <i>Trifolium pratense</i>                    |
| 308   | white clover                                                                        | (e)        | <i>Trifolium repens</i>                      |

|       |                                                           |       |                                |
|-------|-----------------------------------------------------------|-------|--------------------------------|
| 310   | birdsfoot trefoil                                         | (e)   | <i>Lotus corniculatus</i>      |
| 311   | Korean lespedeza                                          | (e)   | <i>Kummerowia stipulacea</i>   |
| 312   | crownvetch                                                | (e)   | <i>Cornilla varia</i>          |
| 313   | sainfoin                                                  | (e)   | <i>Onobrychis viciifolia</i>   |
| 315   | common vetch                                              | (e)   | <i>Vicia sativa</i>            |
| 316   | hairy vetch                                               | (e)   | <i>Vicia villosa</i>           |
| 400   | black turtle fieldbean                                    | (s)   | <i>Phaseolus vulgaris</i>      |
| 401   | blackeye cowpea                                           | (s)   | <i>Vigna unguiculata</i>       |
| 402   | Iron Clay cowpea                                          | (s)   | <i>Vigna unguiculata</i>       |
| 403   | purplehull cowpea<br>(note: must be purple/pink eye type) | (s)   | <i>Vigna unguiculata</i>       |
| 403b  | cowpea                                                    | (p)   | <i>Vigna unguiculata</i>       |
| 404   | great northern fieldbean                                  | (s)   | <i>Phaseolus vulgaris</i>      |
| 405   | navy fieldbean                                            | (s)   | <i>Phaseolus vulgaris</i>      |
| 406   | pinto fieldbean                                           | (s)   | <i>Phaseolus vulgaris</i>      |
| 407   | red kidney fieldbean                                      | (s)   | <i>Phaseolus vulgaris</i>      |
| 407b  | fieldbean                                                 | (p)   | <i>Phaseolus vulgaris</i>      |
| 408   | green mungbean                                            | (e)   | <i>Vigna radiata</i>           |
| 409   | smooth green fieldpea                                     | (s)   | <i>Pisum sativum</i>           |
| 410   | Austrian winter fieldpea                                  | (s)   | <i>Pisum sativum</i>           |
| 411   | smooth yellow fieldpea                                    | (s)   | <i>Pisum sativum</i>           |
| 412   | wrinkled fieldpea                                         | (s)   | <i>Pisum sativum</i>           |
| 412b  | fieldpea                                                  | (p)   | <i>Pisum sativum</i>           |
| 413   | black hilum soybean                                       | (s)   | <i>Glycine max</i>             |
| 414   | yellow hilum soybean                                      | (s)   | <i>Glycine max</i>             |
| 415   | brown hilum soybean                                       | (s)   | <i>Glycine max</i>             |
| 416   | black soybean                                             | (s)   | <i>Glycine max</i>             |
| 417   | brown soybean                                             | (s)   | <i>Glycine max</i>             |
| 417b  | soybean                                                   | (p)   | <i>Glycine max</i>             |
| 418   | Spanish peanut                                            | (pod) | <i>Arachis hypogaea</i>        |
| 419   | Valencia peanut                                           | (pod) | <i>Arachis hypogaea</i>        |
| 419b  | peanut                                                    | (p)   | <i>Arachis hypogaea</i>        |
| 420   | chickpea                                                  | (s)   |                                |
| 421   | white lupine                                              | (s)   | <i>Lupinus albus</i>           |
| 423   | lentil                                                    | (s)   | <i>Lens culinaris</i>          |
| 501   | common buckwheat                                          | (e)   | <i>Fagopyrum esculentum</i>    |
| 502   | castor                                                    | (s)   | <i>Ricinus communis</i>        |
| 503** | Egyptian cotton                                           | (s)   | <i>Gossypium barbadense</i>    |
| 504** | upland cotton                                             | (s)   | <i>Gossypium hirsutum</i>      |
| 504b  | cotton                                                    | (p)   | <i>Gossypium ssp.</i>          |
| 505   | yellow mustard                                            | (s)   | <i>Brassica hirta</i>          |
| 506   | flax                                                      | (e)   | <i>Linum usitatissimum</i>     |
| 507   | hop                                                       | (p)   | <i>Humulus lupulus</i>         |
| 508   | crambe                                                    | (e)   | <i>Crambe abyssinica</i>       |
| 509   | safflower                                                 | (e)   | <i>Carthamus tinctorius</i>    |
| 510   | sesame                                                    | (e)   | <i>Sesamum indicum</i>         |
| 511   | sugarbeet                                                 | (s)   | <i>Beta vulgaris</i>           |
| 512   | tobacco                                                   | (s)   | <i>Nicotiana tabacum</i>       |
| 513   | confectionary sunflower                                   | (s)   | <i>Helianthus annuus</i>       |
| 514   | oilseed sunflower                                         | (s)   | <i>Helianthus annuus</i>       |
| 515   | guar                                                      | (e)   | <i>Gyanopsis tetragonoloba</i> |
| 516   | crotalaria                                                | (s)   | <i>Crotalaria ssp.</i>         |

|       |               |     |                                            |
|-------|---------------|-----|--------------------------------------------|
| 517** | canola        | (e) | <i>Brassica napus</i>                      |
| 518   | daikon radish | (s) | <i>Raphanus sativus ssp. longipinnatus</i> |

## CROP DISEASES

|     |                         |     |                                                             |
|-----|-------------------------|-----|-------------------------------------------------------------|
| 603 | common bean blight      | (s) | <i>Xanthomonas campestris pv. phaseoli</i> (fieldbean only) |
| 604 | black point of wheat    | (s) | <i>Fusarium ssp.</i>                                        |
| 608 | common bunt             | (s) | <i>Tilletia caries</i> or <i>Tilletia foetida</i>           |
| 609 | ergot                   | (e) | <i>Claviceps purpurea</i>                                   |
| 610 | common corn smut        | (p) | <i>Ustilago maydis</i>                                      |
| 613 | loose smut              | (p) | <i>Ustilago tritici</i>                                     |
| 614 | purple stain of soybean | (s) | <i>Cercospora kikuchii</i>                                  |
| 617 | wheat scab              | (s) | <i>Gibberella zeae</i>                                      |
| 620 | Phomopsis seed rot      | (s) | <i>Phomopsis spp.</i> (soybean only)                        |

## WEEDS

Note: Identification includes either plant, seed or both, unless otherwise indicated.

The following criteria were used to classify a weed as prohibited, restricted or common (excluding Alaska and Hawaii):

Prohibited – must be classified as prohibited by two or more states.

Restricted – classified as restricted by two or more states or classified as prohibited by one state and restricted by another state.

### Prohibited Noxious Weeds

|     |                       |                 |                                                  |
|-----|-----------------------|-----------------|--------------------------------------------------|
| 701 | quackgrass            |                 | <i>Elymus repens</i> ( <i>Elytrigia repens</i> ) |
| 702 | johnsongrass          |                 | <i>Sorghum halepense</i>                         |
| 703 | hoary cress           |                 | <i>Cardaria draba</i>                            |
| 704 | leafy spurge          |                 | <i>Euphorbia esula</i>                           |
| 705 | field bindweed        |                 | <i>Convolvulus arvensis</i>                      |
| 706 | dodder <sup>1</sup>   |                 | <i>Cuscuta spp.</i>                              |
| 707 | Canada thistle        |                 | <i>Cirsium arvense</i>                           |
| 708 | Russian knapweed      |                 | <i>Acroptilon repens</i>                         |
| 709 | perennial sowthistle  |                 | <i>Sonchus arvensis</i>                          |
| 710 | jointed goatgrass     |                 | <i>Aegilops cylindrica</i>                       |
| 711 | bull thistle          | (p)             | <i>Cirsium vulgare</i>                           |
| 712 | wild garlic           | (p or bulblets) | <i>Allium vineale</i>                            |
| 713 |                       |                 |                                                  |
| 714 | St. Johnswort         | (p)             | <i>Hypericum perforatum</i>                      |
| 715 | tall morningglory     |                 | <i>Ipomoea purpurea</i>                          |
| 716 | hedge bindweed        | (p)             | <i>Calystegia sepium</i>                         |
| 717 | horsenettle           |                 | <i>Solanum carolinense</i>                       |
| 718 | silverleaf nightshade | (p)             | <i>Solanum elaeagnifolium</i>                    |
| 719 | cocklebur             |                 | <i>Xanthium spp.</i>                             |
| 720 | spotted knapweed      |                 | <i>Centaurea stoebe</i>                          |

<sup>1</sup> Dodder may be allowed on any plant and shall be called regardless of the plant on which it is found. The dodder must represent at least 25% of the identification specimen.

## Restricted Noxious Weeds

|       |                          |                |                                        |
|-------|--------------------------|----------------|----------------------------------------|
| 801   | cheat                    |                | <i>Bromus secalinus</i>                |
| 802   | wild oat                 |                | <i>Avena fatua</i>                     |
| 803   | large crabgrass          |                | <i>Digitaria sanguinalis</i>           |
| 804** | yellow nutsedge          | (p or nutlets) | <i>Cyperus esculentus</i>              |
| 805   | curly dock               |                | <i>Rumex crispus</i>                   |
| 806   | red sorrel               |                | <i>Rumex acetosella</i>                |
| 807   | Russian thistle          |                | <i>Salsola tragus</i>                  |
| 808   | white campion            |                | <i>Silene latifolia ssp. Alba</i>      |
| 809   | field pennycress         |                | <i>Thlaspi arvense</i>                 |
| 810   | wild mustard             |                | <i>Sinapis arvensis</i>                |
| 811   | puncturevine             |                | <i>Tribulus terrestris</i>             |
| 812   | wild carrot              |                | <i>Daucus carota (Daucus pusillus)</i> |
| 813   | blackseed plantain       |                | <i>Plantago rugelii</i>                |
| 814   | buckhorn plantain        |                | <i>Plantago lanceolata</i>             |
| 815   | bracted plantain         |                | <i>Plantago aristata</i>               |
| 816   | oxeye daisy              |                | <i>Leucanthemum vulgare</i>            |
| 817   | eastern black nightshade |                | <i>Solanum ptycanthum</i>              |
| 818   | annual bluegrass         | (s)            | <i>Poa annua</i>                       |
| 819   | sericea lespedeza        | (p)            | <i>Lespedeza cuneata</i>               |

## Common Weeds

|     |                          |     |                                 |
|-----|--------------------------|-----|---------------------------------|
| 901 | rescuegrass              |     | <i>Bromus catharticus</i>       |
| 902 | goosegrass               |     | <i>Eleusine indica</i>          |
| 903 | barnyardgrass            |     | <i>Echinochloa crus-galli</i>   |
| 904 | yellow foxtail           |     | <i>Setaria pumila</i>           |
| 905 | green foxtail            |     | <i>Setaria viridis</i>          |
| 906 | kochia                   |     | <i>Cochia scoparia</i>          |
| 907 | common lambsquarters     |     | <i>Chenopodium album</i>        |
| 908 | redroot pigweed          |     | <i>Amaranthus retroflexus</i>   |
| 909 | chickweed                |     | <i>Stellaria spp.</i>           |
| 910 | greenflower perppperweed |     | <i>Lepidium densiflorum</i>     |
| 911 | shepherdspurse           |     | <i>Capsella bursa-pastoris</i>  |
| 912 | black medic              |     | <i>Medicago lupulina</i>        |
| 912 | giant ragweed            |     | <i>Ambrosia trifida</i>         |
| 914 | common ragweed           |     | <i>Ambrosia artemisiifolia</i>  |
| 915 | wild sunflower           |     | <i>Helianthus annuus</i>        |
| 916 | chicory                  |     | <i>Cichorium intybs</i>         |
| 917 | dandelion                |     | <i>Taraxacum officinale</i>     |
| 918 | downy brome              |     | <i>Bromus tectorum</i>          |
| 919 | foxtail barley           | (p) | <i>Hordeum jubatum</i>          |
| 920 | little barley            |     | <i>Hordeum pusillum</i>         |
| 921 | prostrate knotweed       | (p) | <i>Polygonum aviculare</i>      |
| 922 | Pennsylvania smartweed   |     | <i>Polygonum pennsylvanicum</i> |
| 923 | wild buckwheat           |     | <i>Polygonum convolulus</i>     |
| 924 | pinnate tansymustard     | (p) | <i>Descurainia pinnata</i>      |
| 925 | velvetleaf               |     | <i>Abutilon theophrasti</i>     |
| 926 | buffalobur               |     | <i>Solanum rostratum</i>        |
| 927 | common burdock           |     | <i>Arctium minus</i>            |

|     |                 |                  |                            |
|-----|-----------------|------------------|----------------------------|
| 928 | jimsonweed      |                  | <i>Datura stramonium</i>   |
| 929 | Venice mallow   |                  | <i>Hibiscus trionum</i>    |
| 930 | henbit          |                  | <i>Lamium amplexicaule</i> |
| 931 | prickly sida    |                  | <i>Sida spinosa</i>        |
| 932 | woolly cupgrass |                  | <i>Erichloa villosa</i>    |
| 933 | horseweed       | (p)              | <i>Conyza canadensis</i>   |
| 934 | Palmer amaranth | (p)              | <i>Amaranthus palmeri</i>  |
| 935 | kudzu           | (stems & leaves) | <i>Pueraria montana</i>    |

## HISTORIC VARIETIES

Several varieties or types listed in the identification list are included because of their distinctive morphological characteristics.

Named varieties and types include:

|                          |                   |
|--------------------------|-------------------|
| einkorn                  | honey sorgo       |
| emmer                    | Sweet sudangrass  |
| spelt                    | Nepal barley      |
| Iron Clay cowpea         | sumac sorgo       |
| Austrian winter fieldpea | black amber sorgo |

Representative or historic varieties contain unique characteristics important in identification but are no longer listed specifically in the identification list as of 2024.

The descriptions are provided as a cross-reference for old practice samples.

Karl 92 wheat – white glumes, awned, hard red winter class (“92” means a new Karl released in 1992)

TAM 107 wheat – red glumes, awned, hard red winter class (“TAM” means Texas A&M variety)

Longhorn wheat – white glumes, awnless, hard red winter class

Goldfield wheat – white glumes, awnless, soft red winter class

Hopewell wheat – red glumes, awnless, soft red winter class

Marshall wheat – white glumes, awned, hard red spring class

Thatcher wheat – white glumes, awnless, hard red spring class

Arlin wheat – white glumes, awned, hard white class

Federation wheat – red glumes, awnless, soft white class/soft white subclass

Twin wheat – white glumes, awnless, soft white class/soft white subclass

Paha wheat – club type head, soft white class/white club subclass

L-205 rice – long grain rice (California variety, “L” means long grain, “2” means early maturity)

S-102 rice – short grain rice (California variety, “S” means short grain, “1” means very early maturity)

Morex barley – six-rowed barley, smooth awns

Manker barley – six-rowed barley, rough awns

Red Rustproof oat -

Streaker oat – hull-less oat; free-threshing “naked” seed

Hegari and feterita - white sorghums with blue subcoats

Combine kafir – white non-tannin seed (kafirs were early open-pollinated varieties introduced to US)

Dwarf Yellow milo – red non-tannin seed (milos were early open-pollinated varieties introduced US)

Umatilla fieldpea – smooth yellow fieldpea, named after the research station where it was developed.

Alaska 81 fieldpea – smooth green fieldpea

Perfection fieldpea – wrinkled fieldpea

Flyer soybean – black hilum soybean, yellow class

Corsoy soybean – yellow hilum soybean, yellow class

KS 4694 soybean – brown hilum soybean, yellow class (“KS 4694” means Kansas State variety, maturity group 4.6, released in 1994)

Laredo soybean – black seed coat, soybeans of other colors class (an early forage type variety)

Virginia soybean – brown seed coat, soybeans of other colors class

Mingren sunflower – confectionary variety

Peredovik sunflower – oilseed variety

Lodi oat and Centennial oat are now white oat

Orange sorgo, Polish wheat and Canada bluegrass all removed prior to 2018

Brabham cowpea replaced with Iron Clay cowpea

## Forms for contest

Contestant No. \_\_\_\_\_

# BARLEY

Sample No. \_\_\_\_\_

## SIX-ROWED MALTING BARLEY

Notes

| Factor            | TW | SMT | SBLY | DK | WO | FM | OG | SKBN | THIN |
|-------------------|----|-----|------|----|----|----|----|------|------|
| Level             |    |     |      |    |    |    |    |      |      |
| Grade<br>(3 pts.) |    |     |      |    |    |    |    |      |      |

## TWO-ROWED MALTING BARLEY

| Factor            | TW | SMT | SBLY | DK | WO | FM | OG | SKBN | THIN |
|-------------------|----|-----|------|----|----|----|----|------|------|
| Level             |    |     |      |    |    |    |    |      |      |
| Grade<br>(3 pts.) |    |     |      |    |    |    |    |      |      |

## NON-MALTING BARLEY

| Factor            | TW | SBLY | DK | HT | FM | BN | THIN |
|-------------------|----|------|----|----|----|----|------|
| Level             |    |      |    |    |    |    |      |
| Grade<br>(3 pts.) |    |      |    |    |    |    |      |

| Complete Grade Designation | Factor or Factors for Determination Grade |
|----------------------------|-------------------------------------------|
|                            |                                           |

# CORN

Contestant No. \_\_\_\_\_

Sample No. \_\_\_\_\_

Notes

| Factor            | TW | HT | DKT | BCFM |
|-------------------|----|----|-----|------|
| Level             |    |    |     |      |
| Grade<br>(3 pts.) |    |    |     |      |

| Complete Grade Designation | Factor or Factors for Determination Grade |
|----------------------------|-------------------------------------------|
|                            |                                           |

# OATS

Contestant No. \_\_\_\_\_

Sample No. \_\_\_\_\_

Notes

| Factor            | TW | SO | HT | FM | WO |
|-------------------|----|----|----|----|----|
| Level             |    |    |    |    |    |
| Grade<br>(3 pts.) |    |    |    |    |    |

| Complete Grade Designation | Factor or Factors for Determination Grade |
|----------------------------|-------------------------------------------|
|                            |                                           |

# RYE

Contestant No. \_\_\_\_\_

Sample No. \_\_\_\_\_

Notes

| Factor            | TW | FMOW | FM | HT | DKT | THIN |
|-------------------|----|------|----|----|-----|------|
| Level             |    |      |    |    |     |      |
| Grade<br>(3 pts.) |    |      |    |    |     |      |

| Complete Grade Designation | Factor or Factors for Determination Grade |
|----------------------------|-------------------------------------------|
|                            |                                           |

# SORGHUM

Contestant No. \_\_\_\_\_

Sample No. \_\_\_\_\_

Notes

| Factor            | TW | HT | DKT | FM | BNFM |
|-------------------|----|----|-----|----|------|
| Level             |    |    |     |    |      |
| Grade<br>(3 pts.) |    |    |     |    |      |

| Complete Grade Designation | Factor or Factors for Determination Grade |
|----------------------------|-------------------------------------------|
|                            |                                           |

# SOYBEANS

Contestant No. \_\_\_\_\_

Sample No. \_\_\_\_\_

Notes

| Factor            | HT | DKT | FM | SPL |
|-------------------|----|-----|----|-----|
| Level             |    |     |    |     |
| Grade<br>(3 pts.) |    |     |    |     |

| Complete Grade Designation | Factor or Factors for Determination Grade |
|----------------------------|-------------------------------------------|
|                            |                                           |

# WHEAT

Contestant No. \_\_\_\_\_

Sample No. \_\_\_\_\_

Notes

| Factor            | TW | HT | DKT | FM | SHBN | DEF | CCL | WOCL |
|-------------------|----|----|-----|----|------|-----|-----|------|
| Level             |    |    |     |    |      |     |     |      |
| Grade<br>(3 pts.) |    |    |     |    |      |     |     |      |

| Complete Grade Designation | Factor or Factors for Determination Grade |
|----------------------------|-------------------------------------------|
|                            |                                           |

# Official Form — Collegiate Crops Contest Seed Analysis

Contestant No. \_\_\_\_\_

Total Score \_\_\_\_\_

Sample No. \_\_\_\_\_

Sample Name \_\_\_\_\_

| A. Other Crops and/or Varieties | C. Restricted Noxious Weeds |
|---------------------------------|-----------------------------|
|                                 |                             |
|                                 |                             |
|                                 |                             |
|                                 |                             |
|                                 |                             |
|                                 |                             |
|                                 |                             |
|                                 |                             |
|                                 |                             |
|                                 |                             |
|                                 |                             |
| B. Prohibited Noxious Weeds     | D. Common Weeds             |
|                                 |                             |
|                                 |                             |
|                                 |                             |
|                                 |                             |
|                                 |                             |
|                                 |                             |
|                                 |                             |
|                                 |                             |
|                                 |                             |

# Official Form — Collegiate Crops Contest Identification

Contestant No. \_\_\_\_\_

Total Score \_\_\_\_\_

| Sample Number      | Name               | Sample Number        | Name          |
|--------------------|--------------------|----------------------|---------------|
| 1. _____           |                    | 26. _____            |               |
| 2. _____           |                    | 27. _____            |               |
| 3. _____           |                    | 28. _____            |               |
| 4. _____           |                    | 29. _____            |               |
| 5. _____           |                    | 30. _____            |               |
| 6. _____           |                    | 31. _____            |               |
| 7. _____           |                    | 32. _____            |               |
| 8. _____           |                    | 33. _____            |               |
| 9. _____           |                    | 34. _____            |               |
| 10. _____          |                    | 35. _____            |               |
| 11. _____          |                    | 36. _____            |               |
| 12. _____          |                    | 37. _____            |               |
| 13. _____          |                    | 38. _____            |               |
| 14. _____          |                    | 39. _____            |               |
| 15. _____          |                    | 40. _____            |               |
| 16. _____          |                    | 41. _____            |               |
| 17. _____          |                    | 42. _____            |               |
| 18. _____          |                    | 43. _____            |               |
| 19. _____          |                    | 44. _____            |               |
| 20. _____          |                    | 45. _____            |               |
| 21. _____          |                    | 46. _____            |               |
| 22. _____          |                    | 47. _____            |               |
| 23. _____          |                    | 48. _____            |               |
| 24. _____          |                    | 49. _____            |               |
| 25. _____          |                    | 50. _____            |               |
| _____ x -3 = _____ | _____ x -1 = _____ | _____ x -0.2 = _____ | Total = _____ |

# Official Form — Collegiate Crops Contest Identification

Contestant No. \_\_\_\_\_

Total Score \_\_\_\_\_

| Sample Number      | Name               | Sample Number        | Name          |
|--------------------|--------------------|----------------------|---------------|
| 51.                | _____              | 76.                  | _____         |
| 52.                | _____              | 77.                  | _____         |
| 53.                | _____              | 78.                  | _____         |
| 54.                | _____              | 79.                  | _____         |
| 55.                | _____              | 80.                  | _____         |
| 56.                | _____              | 81.                  | _____         |
| 57.                | _____              | 82.                  | _____         |
| 58.                | _____              | 83.                  | _____         |
| 59.                | _____              | 84.                  | _____         |
| 60.                | _____              | 85.                  | _____         |
| 61.                | _____              | 86.                  | _____         |
| 62.                | _____              | 87.                  | _____         |
| 63.                | _____              | 88.                  | _____         |
| 64.                | _____              | 89.                  | _____         |
| 65.                | _____              | 90.                  | _____         |
| 66.                | _____              | 91.                  | _____         |
| 67.                | _____              | 92.                  | _____         |
| 68.                | _____              | 93.                  | _____         |
| 69.                | _____              | 94.                  | _____         |
| 70.                | _____              | 95.                  | _____         |
| 71.                | _____              | 96.                  | _____         |
| 72.                | _____              | 97.                  | _____         |
| 73.                | _____              | 98.                  | _____         |
| 74.                | _____              | 99.                  | _____         |
| 75.                | _____              | 100.                 | _____         |
| _____ x -3 = _____ | _____ x -1 = _____ | _____ x -0.2 = _____ | Total = _____ |

# Official Form — Collegiate Crops Contest Identification

Contestant No. \_\_\_\_\_

Total Score \_\_\_\_\_

| Sample Number      | Name               | Sample Number        | Name          |
|--------------------|--------------------|----------------------|---------------|
| 101.               | _____              | 126.                 | _____         |
| 102.               | _____              | 127.                 | _____         |
| 103.               | _____              | 128.                 | _____         |
| 104.               | _____              | 129.                 | _____         |
| 105.               | _____              | 130.                 | _____         |
| 106.               | _____              | 131.                 | _____         |
| 107.               | _____              | 132.                 | _____         |
| 108.               | _____              | 133.                 | _____         |
| 109.               | _____              | 134.                 | _____         |
| 110.               | _____              | 135.                 | _____         |
| 111.               | _____              | 136.                 | _____         |
| 112.               | _____              | 137.                 | _____         |
| 113.               | _____              | 138.                 | _____         |
| 114.               | _____              | 139.                 | _____         |
| 115.               | _____              | 140.                 | _____         |
| 116.               | _____              | 141.                 | _____         |
| 117.               | _____              | 142.                 | _____         |
| 118.               | _____              | 143.                 | _____         |
| 119.               | _____              | 144.                 | _____         |
| 120.               | _____              | 145.                 | _____         |
| 121.               | _____              | 146.                 | _____         |
| 122.               | _____              | 147.                 | _____         |
| 123.               | _____              | 148.                 | _____         |
| 124.               | _____              | 149.                 | _____         |
| 125.               | _____              | 150.                 | _____         |
| _____ x -3 = _____ | _____ x -1 = _____ | _____ x -0.2 = _____ | Total = _____ |

# Official Form — Collegiate Crops Contest Identification

Contestant No. \_\_\_\_\_

Total Score \_\_\_\_\_

| Sample Number      | Name               | Sample Number        | Name          |
|--------------------|--------------------|----------------------|---------------|
| 151.               | _____              | 176.                 | _____         |
| 152.               | _____              | 177.                 | _____         |
| 153.               | _____              | 178.                 | _____         |
| 154.               | _____              | 179.                 | _____         |
| 155.               | _____              | 180.                 | _____         |
| 156.               | _____              | 181.                 | _____         |
| 157.               | _____              | 182.                 | _____         |
| 158.               | _____              | 183.                 | _____         |
| 159.               | _____              | 184.                 | _____         |
| 160.               | _____              | 185.                 | _____         |
| 161.               | _____              | 186.                 | _____         |
| 162.               | _____              | 187.                 | _____         |
| 163.               | _____              | 188.                 | _____         |
| 164.               | _____              | 189.                 | _____         |
| 165.               | _____              | 190.                 | _____         |
| 166.               | _____              | 191.                 | _____         |
| 167.               | _____              | 192.                 | _____         |
| 168.               | _____              | 193.                 | _____         |
| 169.               | _____              | 194.                 | _____         |
| 170.               | _____              | 195.                 | _____         |
| 171.               | _____              | 196.                 | _____         |
| 172.               | _____              | 197.                 | _____         |
| 173.               | _____              | 198.                 | _____         |
| 174.               | _____              | 199.                 | _____         |
| 175.               | _____              | 200.                 | _____         |
| _____ x -3 = _____ | _____ x -1 = _____ | _____ x -0.2 = _____ | Total = _____ |

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