

# AGRONOMY

## **Purpose**

The Agronomy CDE is designed to motivate students to learn about crop production and factors that influence the quality of seed and forage crops.

## **Objectives**

Students participating in the Agronomy CDE should develop the following skills and abilities:

- I. To identify weeds and crops by the seed or plant parts.
- II. To evaluate the quality of crop seed and hay samples for feeding, planting, or processing for food.
- III. To identify weeds as prohibited, noxious, or common, and length of life cycle.
- IV. To develop an understanding of the biological principles underlying production practices of major crops and of their handling for further marketing.

### Crosswalk with Show-Me Standards

Objectives – Students participating in the Career Development Event should be able to:		Show-Me Standards	
		Knowledge Standards (Content Areas)	Performance Standards (Goals)
1.	To identify weeds and crops by the seed or plant parts.	SC.3, SC.4, SC.8	3.1
2.	To evaluate the quality of crop seed and hay samples for feeding, planting, or processing for food.		4.4, 4.8
3.	To identify weeds as prohibited, noxious, or common, and length of life cycle.		
4.	To develop an understanding of the biological principles underlying production practices of major crops and of their handling for further marketing.		

CORRESPONDING SECONDARY AGRICULTURE CURRICULUM			
<b>Course and/or Curriculum:</b>	Agricultural Science II Advance Crop Science	<b>Unit(s):</b>	Crop Science, Plant Science All Units

## Event Format

The Agronomy CDE shall consist of the following three components:

### I. IDENTIFICATION-- One Hour

- A. Contestants will identify 100 crops or weeds by plant or seed samples from LIST 21.
- B. The life cycle for each plant and/or seed will be identified as Winter Annual, Summer Annual, Biennial, or Perennial.
- C. Wheat and corn types are identified and distinguished in the seed category only.
- D. No more than one seed and one plant from any species.

### II. SEED AND HAY JUDGING-- One Hour

#### A. Seed Judging

1. Contestants will place two four-sample classes on their value as seed for marketing or planting. Wheat and soybeans will be the crops utilized in seed judging. Reasons will be given by checking the evaluation factors present in each sample. (Note: CDE superintendents should place a minimum of 10 foreign seeds per plate.) Students should mark all factors present, regardless of number. All factors must be clearly observable. (Form 22 will be used for seed judging. A 60-point scoring table will be used to score the students' placings of the samples.)  
NOTE: A given sample may contain a maximum of two prohibited and/or two noxious and/or two common weed seeds.
2. The following will be considered judging factors in determining reasons for placing samples:
  - a. Freedom from mixtures (other varieties and other crops)
  - b. Freedom from inert material. (Includes stems, dirt, chaff, etc.)
  - c. Freedom from weed seeds (prohibited, noxious, common - see revised weed classifications, Part D under SUBJECT MATTER below)
  - d. Soundness (weathering, disease, immature seed, insect damage, sprouted kernels, etc.)
3. Factor values for each crop are provided on the following pages. Using these values, add the factor values for each sample as decided by sample condition. The sample with the lowest total factor value is the best sample.
4. Eight factors will be used in each four-sample class.

#### B. Hay Judging

Hay judging will cover alfalfa only. A four-sample class will be judged on the basis of final placing only. The student should be encouraged and taught to understand the quality factors used in judging hay. The quality factor breakdown should include leafiness (50%), color (25%), and foreign material (25%). These should be considered by the student and taught by the advisor to arrive at the final placing. (Form 23 will be used for the hay judging classes. A 60-point scoring table will be used to score the students' placing of the samples.)

III. SUBJECT MATTER-- One Hour

- A. A 100 question objective type test covering well established production practices and information contained in the references will be used. Hay analysis scenario questions may be included in the written test.
- B. Biological principles underlying production practices of major crops will be emphasized to include the following: variety selection, propagation, life of plant (annual, biennial, and perennial), soil and climatic adaptation, cultural practices affecting crop growth and quality, disease resistance, insect relations, and principle uses. Problems on chemical application and seeding rate may also be included.
- C. Soil requirements and climatic adaptation and uses of miscellaneous crops will include tobacco, rice, winter vetch, rape, millet, sunflower, and crown vetch.
- D. Questions over weeds will include classification, life of plant, propagation, and means of control. Weeds to be covered are limited to the following from each class (Missouri Plant Industries Seed Regulations 2 CSR 70-35.010 will be used as the official guide):
1. Prohibited \*--Canada thistle, field bindweed, Johnsongrass, musk thistle.
  2. Noxious \*\* --Black nightshade, buckhorn plantain, curly dock, dodder, giant foxtail, hedge bindweed, quackgrass, red sorrel, wild garlic, wild onion.
  3. Common--Barnyard grass, bull thistle, cheat, chicory, chickweed, climbing milkweed, cocklebur, common milkweed, common (broadleaf) plantain, common ragweed, common sunflower, corncockle, crabgrass, daisy fleabane, dandelion, downy brome grass, fall panixum, giant ragweed, goosegrass, green foxtail, henbit, horse nettle, ironweed, jimson weed, lambsquarter, morning glory, nutgrass, oxeye daisy, Pennsylvania smartweed, pigweed, prickly lettuce, shattercane, shepherd's purse, spiny sida, velvetleaf, water hemp, wild buckwheat, wild carrot, wild mustard, yellow foxtail

\* **Note:** (Balloon vine, serrated tussock, and sorghum alnum are prohibited weeds noted in the Missouri Plant Industries Seed Regulations that are **not included** in the Agronomy CDE weed & seed identification or test questions.) (Cut-leaved teasel, common teasel, kudzu, marijuana, multiflora rose, Scotch Thistle, and purple loosestrife are prohibited weeds in the Missouri statues 263.450 that are **not included** in the Agronomy CDE weed & seed identification or test questions.)

\*\* **Note:** (Hoary cress, leafy spurge, purple moon flower, Russian thistle, slender oats, wild oats, yellow star thistle are noxious weeds noted in the Missouri Plant Industries Seed Regulations that are **not included** in the Agronomy CDE weed & seed identification or test questions.)

### Event Scoring

Event	Points Possible
I. Identification	400 Points
	- 100 Crop & Weed samples @ 3 pts each
	- Life cycle @ 1 pt each (see NOTE 1 below)
II. Seed Judging	200 Points (see NOTE 2 below)
	- One class of Wheat Seed Judging and Reasons (100 pts)
	- One class of Soybean Seed Judging and Reasons (100 pts)
III. Hay judging	60 Points for placing (Form 23)
IV. Test	300 Points (100 questions @ 3 pts each)
<b>TOTAL</b>	<b>960 Points</b>

NOTE 1: The life cycle for each plant and/or seed will be identified as Winter Annual, Summer Annual, Biennial, or Perennial (1 point each). The scoring of the Agronomy CDE will be that the crop plant or seed ID and the weed plant or seed ID **MUST BE CORRECT** in order to receive points for the life cycle. Therefore if:

Sample identified correctly and life cycle correct = 4 points

Sample identified correctly and life cycle incorrect = 3 points

Sample identified incorrectly and life cycle correct = 0 points

NOTE 2: Each class of seed will be graded on the basis of 60 points for placings and 40 points for reasons. Eight factors will be used in each four-sample class. Each factor marked correctly will be worth five points. If any of the eight factors are not marked, five points will be deducted for each factor omitted. Two points will be deducted for each factor marked that should not have been marked.

### Event Rules and Regulations

1. Contestants are not allowed to communicate with other contestants during the event.
2. Contestants will not be allowed to handle plant or weed samples. Contestants may bring and use a magnifying glass to view samples.
3. No instructor or student may obtain any plants, seeds, contaminants, or other materials from the CDE superintendent, Weed Science Unit, or Bradford Research Farm after **the last district contest** prior to state competition. (This includes workshops and district events which may be presented throughout the state). Questions, which would result in a competitive advantage for one or more schools, will not be answered prior to state competition.

## References

Advanced Crop Science (Instructor Packet 10-1002-I) (2000), University of Missouri, Instructional Materials Laboratory, 1400 Rock Quarry Rd. Q156, University of Missouri, Columbia, MO 65211. Phone: 800-669-2465, <http://iml-ag.missouri.edu>.

Plant Science Unit (Instructor Packet 10-1005-I). University of Missouri, Instructional Materials Laboratory, 1400 Rock Quarry Rd. Q156, University of Missouri, Columbia, MO 65211. Phone: 800-669-2465, <http://iml-ag.missouri.edu>.

Weeds of the North Central States (1981). North Central Region Publication 281 and Circular 772, Illinois Agricultural Experiment Station, Urbana, IL, 303 pp.

Missouri Grazing Manual (M157, Revised 1999). Available from University of Missouri Extension, <http://extension.missouri.edu/publications/DisplayPub.aspx?P=M157>

Preparing for the 2011 International Certified Crop Adviser Exam Manual. Available from International Plant Nutrition Institute, <http://www.ipni.net/>

MU Guides on Forages:

*Forages for Cattle: New Methods of Determining Energy Content and Evaluating Heat Damage* - G3150.

*Understanding and Interpreting Feed Analysis Reports* - G3160

*Using NDF and ADF to Balance Diets* - G3161

*Forages & Weeds of Pastures M-100 Extension Publication*

## Forms

See Plant Identification List (List 21), Plant Identification List (List 21 B), Seed Wheat Judging Factors, Seed Soybeans Judging Factors, Sixty Point Scoring Table, Form 21A, Form 21B, Form 22A, Form 22B, and Form 23.

# PLANT IDENTIFICATION LIST

## LIST 21

The following list will serve as the **official classification** in regards to **Winter Annual (WA), Summer Annual (SA), Biennial (B), Perennial (P)** for the Crop and Weed Plants & Seeds used in the Agronomy CDE:

01. Alfalfa	P	34. Giant ragweed	SA	67. Popcorn	SA
02. Alsike Clover	P	35. Goose grass	SA	68. Potato (plant)	SA
03. Barley	WA	36. Grain sorghum	SA	69. Prickly lettuce	SA
04. Barnyard grass	SA	37. Green foxtail	SA	70. Prickly sida	SA
05. Bermuda grass	P	38. Hairy vetch	WA	71. Quackgrass	P
06. Big Bluestem	P	39. Hard red winter wheat	WA	72. Red clover	P
07. Birdsfoot trefoil	P	40. Hedge bindweed	P	73. Red sorrel	P
08. Black nightshade	SA	41. Henbit	WA	74. Reed canary grass	P
09. Broccoli (plant)	SA	42. Horse nettle	P	75. Rice	SA
10. Buckhorn plantain	P	43. Horseweed/marestail	SA	76. Rye	WA
11. Bull thistle	B	44. Indian grass	P	77. Serecia Lespedeza	P
12. Caucasian bluestem	P	45. Ironweed	P	78. Shepherd's purse	WA
13. Cheat/Downy Bromegrass	WA	46. Jimson weed	SA	79. Smooth brome grass	P
14. Chicory	P	47. Johnson grass	P	80. Soft red winter wheat	WA
15. Climbing milkweed	P	48. Kentucky bluegrass	P	81. Soybean	SA
16. Cocklebur	SA	49. Korean lespedeza	SA	82. Sunflower	SA
17. Common chickweed	WA	50. Lambsquarter	SA	83. Sweet clover	B
18. Common lespedeza	SA	51. Large crabgrass	SA	84. Sweet corn	SA
19. Common milkweed	P	52. Lettuce (plant)	B	85. Switch grass	P
20. Common plantain	P	53. Lohop clover	WA	86. Tall fescue	P
21. Common purslane	SA	54. Morning glory	SA	87. Timothy	P
22. Common ragweed	SA	55. Musk thistle	B	88. Tobacco	SA
23. Corn (plant)	SA	56. Nutgrass (plant)	P	89. Tomato (plant)	SA
24. Cotton	SA	57. Oats	WA	90. Velvetleaf	SA
25. Crown vetch	P	58. Orchard grass	P	91. Watermelon (plant)	SA
26. Cucumber (plant)	SA	59. Oxeye daisy	P	92. Wheat (plant)	WA
27. Curly Dock	P	60. Pearl millet	SA	93. White clover	P
28. Daisy fleabane	SA	61. Peas (plant)( <i>Pisum sativum</i> )	SA	94. Wild buckwheat	SA
29. Dandelion	P	62. Pennsylvania smartweed	SA	95. Wild carrot	B
30. Eastern gamma grass	P	63. Pepper (plant)	SA	96. Wild garlic/onion	P
31. Fall panicum	SA	64. Perennial ryegrass	P	97. Wild mustard	WA
32. Field bindweed	P	65. Pigweed/Waterhemp	SA	98. Yellow corn	SA
33. Giant foxtail	SA	66. Pokeberry	P	99. Yellow foxtail	SA

## SEED WHEAT JUDGING FACTORS

(Values allotted to subheads will not necessarily equal the values of main headings. The main headings represent the maximum for the factors.)

<u>Factor</u>	<u>(Deduction)</u>	<u>Maximum Deduction</u>
MIXTURES .....		30
Other varieties of wheat ..... (10) (durum, white wheat, etc.)		
Other varieties of wheat within the ..... (5) class (indicated by distinct differences in shape)		
Other crops (rye 15, vetch 15, ..... (20) barley 10, oats 5)		
INERT MATERIAL .....		5
Includes stems, dirt, chaff, etc..... (5)		
WEED SEED .....		40
Prohibited weeds* ..... (40)		
Noxious weeds ..... (25)		
Common weeds (corn cockle - 10)..... (5)		
SOUNDNESS .....		25
Weathered or bleached ..... (10)		
Sprouted..... (10)		
Immature (shrunken kernel) ..... (5)		
Disease (scab, smut, or blacktip) ..... (10)		
Mechanical damage (including heat damage) ..... (5)		
Insect damage..... (5)		

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100

\*Any sample containing a prohibited weed will automatically be placed at the bottom of the four-sample class regardless of total numerical value associated with the sample.

## SEED SOYBEANS JUDGING FACTORS

(Values allotted to subheads will not necessarily equal the values of main headings. The main headings represent the maximum for the factors.)

<u>Factor</u>	<u>(Deduction)</u>	<u>Maximum Deduction</u>
MIXTURES .....		35
Other varieties.....	(20)	
Other crops (corn, sorghum, etc.) .....	(25)	
INERT MATERIAL .....		5
Includes stems, dirt, chaff, etc.....	(5)	
WEED SEED .....		30
Prohibited weeds* .....	(30)	
Noxious weeds .....	(20)	
Common weeds (morning glory, cocklebur - 15).....	(10)	
SOUNDNESS .....		30
Weathered.....	(5)	
Immature (shrunken kernels) .....	(10)	
Disease (purple spot, phomopsis, bleeding hilum)...	(5)	
Mechanical damage (including heat damage) .....	(10)	
Insect damage.....	(5)	
		100

\*Any sample containing a prohibited weed will automatically be placed at the bottom of the four-sample class regardless of total numerical value associated with the sample.

## SIXTY-POINT SCORING TABLE

The score for all possible placings of a class of four samples when any one of the 24 placings is correct. The scores range from 60 with a correct placing to 0 with a complete reversal.

<i>Student's Placings</i>	<i>Correct Placing</i>																							
	1 1 1 1 1 1	2 2 2 2 2 2	3 3 3 3 3 3	4 4 4 4 4 4	1 1 3 3 4 4	1 1 2 2 4 4	1 1 2 2 3 3	3 4 2 4 2 3	3 4 1 4 1 3	2 4 1 4 1 2	2 3 1 3 1 2	4 3 4 2 3 2	4 3 4 1 3 1	4 2 4 1 2 1	3 2 3 1 2 1									
1 2 3 4	60	54	54	42	42	36	54	48	42	24	30	18	42	30	36	18	12	6	24	18	18	6	6	0
1 2 4 3	54	60	42	36	54	42	48	54	30	18	42	24	24	18	18	6	6	0	42	30	36	18	12	6
1 3 2 4	54	42	60	54	36	42	42	30	36	18	12	6	54	48	42	24	30	18	18	24	6	0	18	6
1 3 4 2	42	36	54	60	42	54	24	18	18	6	6	0	48	54	30	18	42	24	30	42	12	6	36	18
1 4 2 3	42	54	36	42	60	54	30	42	12	6	36	18	18	24	6	0	18	6	54	48	42	24	30	18
1 4 3 2	36	42	42	54	54	60	18	24	6	0	18	6	30	42	12	6	36	18	48	54	30	18	42	24
2 1 3 4	54	48	42	24	30	18	60	54	54	42	42	36	36	18	42	30	6	12	18	6	24	18	0	6
2 1 4 3	48	54	30	18	42	24	54	60	42	36	54	42	18	6	24	18	0	6	36	18	42	30	6	12
2 3 1 4	42	30	36	18	12	6	54	42	60	54	36	42	42	24	54	48	18	30	6	0	18	24	6	18
2 3 4 1	24	18	18	6	6	0	42	36	54	60	42	54	30	18	48	54	24	42	12	6	30	42	18	36
2 4 1 3	30	42	12	6	36	18	42	54	36	42	60	54	6	0	18	24	6	18	42	24	54	48	18	30
2 4 3 1	18	24	6	0	18	6	36	42	42	54	54	60	12	6	30	42	18	36	30	18	48	54	24	42
3 1 2 4	42	24	54	48	18	30	36	18	42	30	6	12	60	54	54	42	42	36	6	18	0	6	24	18
3 1 4 2	30	18	48	54	24	42	18	6	24	18	0	6	54	60	42	36	54	42	18	36	6	12	42	30
3 2 1 4	36	18	42	30	6	12	42	24	54	48	18	30	54	42	60	54	36	42	0	6	6	18	18	24
3 2 4 1	18	6	24	18	0	6	30	18	48	54	24	42	42	36	54	60	42	54	6	12	18	36	30	42
3 4 1 2	12	6	30	42	18	36	6	0	18	24	6	18	42	54	36	42	60	54	24	42	18	30	54	48
3 4 2 1	6	0	18	24	6	18	12	6	30	42	18	36	36	42	42	54	54	60	18	30	24	42	48	54
4 1 2 3	24	42	18	30	54	48	18	36	6	12	42	30	6	18	0	6	24	18	60	54	54	42	42	36
4 1 3 2	18	30	24	42	48	54	6	18	0	6	24	18	18	36	6	12	42	30	54	60	42	36	54	42
4 2 1 3	18	36	6	12	42	30	24	42	18	30	54	48	0	6	6	18	18	24	54	42	60	54	36	42
4 2 3 1	6	18	0	6	24	18	18	30	24	42	48	54	6	12	18	36	30	42	42	36	54	60	42	54
4 3 1 2	6	12	18	36	30	42	0	6	6	18	18	24	24	42	18	30	54	48	42	54	36	42	60	54
4 3 2 1	0	6	6	18	18	24	6	12	18	36	30	42	18	30	24	42	48	54	36	42	42	54	54	60

To be used in grading seed and hay judging final placings.

EXAMPLE: If the correct placing was 3 2 1 4 (indicated by the shading and arrow at the top of the page) and the student placed the sample 2 3 4 1, then the score of 48 (indicated by the shaded square) would be given.

Crop and Weed Plant or Seed Identification

Name: \_\_\_\_\_ Contestant Number: \_\_\_\_\_

School: \_\_\_\_\_ School Number: \_\_\_\_\_

**(WA)** Winter Annual    **(SA)** Summer Annual    **(B)** Biennial    **(P)** Perennial

**Directions:** Enter the correct Crop or Weed Plant/Seed Code and darken the area of the correct answer.

- |                            |                            |
|----------------------------|----------------------------|
| 1. ____ (WA) (SA) (B) (P)  | 26. ____ (WA) (SA) (B) (P) |
| 2. ____ (WA) (SA) (B) (P)  | 27. ____ (WA) (SA) (B) (P) |
| 3. ____ (WA) (SA) (B) (P)  | 28. ____ (WA) (SA) (B) (P) |
| 4. ____ (WA) (SA) (B) (P)  | 29. ____ (WA) (SA) (B) (P) |
| 5. ____ (WA) (SA) (B) (P)  | 30. ____ (WA) (SA) (B) (P) |
| 6. ____ (WA) (SA) (B) (P)  | 31. ____ (WA) (SA) (B) (P) |
| 7. ____ (WA) (SA) (B) (P)  | 32. ____ (WA) (SA) (B) (P) |
| 8. ____ (WA) (SA) (B) (P)  | 33. ____ (WA) (SA) (B) (P) |
| 9. ____ (WA) (SA) (B) (P)  | 34. ____ (WA) (SA) (B) (P) |
| 10. ____ (WA) (SA) (B) (P) | 35. ____ (WA) (SA) (B) (P) |
| 11. ____ (WA) (SA) (B) (P) | 36. ____ (WA) (SA) (B) (P) |
| 12. ____ (WA) (SA) (B) (P) | 37. ____ (WA) (SA) (B) (P) |
| 13. ____ (WA) (SA) (B) (P) | 38. ____ (WA) (SA) (B) (P) |
| 14. ____ (WA) (SA) (B) (P) | 39. ____ (WA) (SA) (B) (P) |
| 15. ____ (WA) (SA) (B) (P) | 40. ____ (WA) (SA) (B) (P) |
| 16. ____ (WA) (SA) (B) (P) | 41. ____ (WA) (SA) (B) (P) |
| 17. ____ (WA) (SA) (B) (P) | 42. ____ (WA) (SA) (B) (P) |
| 18. ____ (WA) (SA) (B) (P) | 43. ____ (WA) (SA) (B) (P) |
| 19. ____ (WA) (SA) (B) (P) | 44. ____ (WA) (SA) (B) (P) |
| 20. ____ (WA) (SA) (B) (P) | 45. ____ (WA) (SA) (B) (P) |
| 21. ____ (WA) (SA) (B) (P) | 46. ____ (WA) (SA) (B) (P) |
| 22. ____ (WA) (SA) (B) (P) | 47. ____ (WA) (SA) (B) (P) |
| 23. ____ (WA) (SA) (B) (P) | 48. ____ (WA) (SA) (B) (P) |
| 24. ____ (WA) (SA) (B) (P) | 49. ____ (WA) (SA) (B) (P) |
| 25. ____ (WA) (SA) (B) (P) | 50. ____ (WA) (SA) (B) (P) |

**Crop and Weed Plant or Seed Identification (Continued)**

Name: \_\_\_\_\_ Contestant Number: \_\_\_\_\_

School: \_\_\_\_\_ School Number: \_\_\_\_\_

**(WA)** Winter Annual    **(SA)** Summer Annual    **(B)** Biennial    **(P)** Perennial

**Directions:** Enter the correct Crop or Weed Plant/Seed Code and darken the area of the correct answer.

- |                            |                            |
|----------------------------|----------------------------|
| 1. ____ (WA) (SA) (B) (P)  | 26. ____ (WA) (SA) (B) (P) |
| 2. ____ (WA) (SA) (B) (P)  | 27. ____ (WA) (SA) (B) (P) |
| 3. ____ (WA) (SA) (B) (P)  | 28. ____ (WA) (SA) (B) (P) |
| 4. ____ (WA) (SA) (B) (P)  | 29. ____ (WA) (SA) (B) (P) |
| 5. ____ (WA) (SA) (B) (P)  | 30. ____ (WA) (SA) (B) (P) |
| 6. ____ (WA) (SA) (B) (P)  | 31. ____ (WA) (SA) (B) (P) |
| 7. ____ (WA) (SA) (B) (P)  | 32. ____ (WA) (SA) (B) (P) |
| 8. ____ (WA) (SA) (B) (P)  | 33. ____ (WA) (SA) (B) (P) |
| 9. ____ (WA) (SA) (B) (P)  | 34. ____ (WA) (SA) (B) (P) |
| 10. ____ (WA) (SA) (B) (P) | 35. ____ (WA) (SA) (B) (P) |
| 11. ____ (WA) (SA) (B) (P) | 36. ____ (WA) (SA) (B) (P) |
| 12. ____ (WA) (SA) (B) (P) | 37. ____ (WA) (SA) (B) (P) |
| 13. ____ (WA) (SA) (B) (P) | 38. ____ (WA) (SA) (B) (P) |
| 14. ____ (WA) (SA) (B) (P) | 39. ____ (WA) (SA) (B) (P) |
| 15. ____ (WA) (SA) (B) (P) | 40. ____ (WA) (SA) (B) (P) |
| 16. ____ (WA) (SA) (B) (P) | 41. ____ (WA) (SA) (B) (P) |
| 17. ____ (WA) (SA) (B) (P) | 42. ____ (WA) (SA) (B) (P) |
| 18. ____ (WA) (SA) (B) (P) | 43. ____ (WA) (SA) (B) (P) |
| 19. ____ (WA) (SA) (B) (P) | 44. ____ (WA) (SA) (B) (P) |
| 20. ____ (WA) (SA) (B) (P) | 45. ____ (WA) (SA) (B) (P) |
| 21. ____ (WA) (SA) (B) (P) | 46. ____ (WA) (SA) (B) (P) |
| 22. ____ (WA) (SA) (B) (P) | 47. ____ (WA) (SA) (B) (P) |
| 23. ____ (WA) (SA) (B) (P) | 48. ____ (WA) (SA) (B) (P) |
| 24. ____ (WA) (SA) (B) (P) | 49. ____ (WA) (SA) (B) (P) |
| 25. ____ (WA) (SA) (B) (P) | 50. ____ (WA) (SA) (B) (P) |

## PLANT IDENTIFICATION LIST

### LIST 21 B

The following list is to be used in conjunction with the scansheet or Form 21A and 21B for the Crop and Weed Plants & Seeds used in the Agronomy CDE:

- |                            |  |                           |
|----------------------------|--|---------------------------|
| 01. Alfalfa                | 34. Giant ragweed                        | 67. Popcorn               |
| 02. Alsike Clover          | 35. Goose grass                          | 68. Potato (plant)        |
| 03. Barley                 | 36. Grain sorghum                        | 69. Prickly lettuce       |
| 04. Barnyard grass         | 37. Green foxtail                        | 70. Prickly sida          |
| 05. Bermuda grass          | 38. Hairy vetch                          | 71. Quackgrass            |
| 06. Big Bluestem           | 39. Hard red winter wheat                | 72. Red clover            |
| 07. Birdsfoot trefoil      | 40. Hedge bindweed                       | 73. Red sorrel            |
| 08. Black nightshade       | 41. Henbit                               | 74. Reed canary grass     |
| 09. Broccoli (plant)       | 42. Horse nettle                         | 75. Rice                  |
| 10. Buckhorn plantain      | 43. Horseweed/marestail                  | 76. Rye                   |
| 11. Bull thistle           | 44. Indian grass                         | 77. Serecia Lespedeza     |
| 12. Caucasian bluestem     | 45. Ironweed                             | 78. Shepherd's purse      |
| 13. Cheat/Downy Bromegrass | 46. Jimson weed                          | 79. Smooth brome grass    |
| 14. Chicory                | 47. Johnson grass                        | 80. Soft red winter wheat |
| 15. Climbing milkweed      | 48. Kentucky bluegrass                   | 81. Soybean               |
| 16. Cocklebur              | 49. Korean lespedeza                     | 82. Sunflower             |
| 17. Common chickweed       | 50. Lambsquarter                         | 83. Sweet clover          |
| 18. Common lespedeza       | 51. Large crabgrass                      | 84. Sweet corn            |
| 19. Common milkweed        | 52. Lettuce (plant)                      | 85. Switch grass          |
| 20. Common plantain        | 53. Lohop clover                         | 86. Tall fescue           |
| 21. Common purslane        | 54. Morning glory                        | 87. Timothy               |
| 22. Common ragweed         | 55. Musk thistle                         | 88. Tobacco               |
| 23. Corn (plant)           | 56. Nutgrass (plant)                     | 89. Tomato (plant)        |
| 24. Cotton                 | 57. Oats                                 | 90. Velvetleaf            |
| 25. Crown vetch            | 58. Orchard grass                        | 91. Watermelon (plant)    |
| 26. Cucumber (plant)       | 59. Oxeye daisy                          | 92. Wheat (plant)         |
| 27. Curly Dock             | 60. Pearl millet                         | 93. White clover          |
| 28. Daisy fleabane         | 61. Peas (plant)( <i>Pisum sativum</i> ) | 94. Wild buckwheat        |
| 29. Dandelion              | 62. Pennsylvania smartweed               | 95. Wild carrot           |
| 30. Eastern gamma grass    | 63. Pepper (plant)                       | 96. Wild garlic/onion     |
| 31. Fall panicum           | 64. Perennial ryegrass                   | 97. Wild mustard          |
| 32. Field bindweed         | 65. Pigweed/Waterhemp                    | 98. Yellow corn           |
| 33. Giant foxtail          | 66. Pokeberry                            | 99. Yellow foxtail        |

**Seed Wheat Judging Estimating the Value of Planting Seed**

Name: \_\_\_\_\_ Contestant Number: \_\_\_\_\_

School: \_\_\_\_\_ School Number: \_\_\_\_\_

FINAL PLACING			
1 <sup>ST</sup>	2 <sup>ND</sup>	3 <sup>RD</sup>	4 <sup>TH</sup>

( FOR JUDGES USE ONLY)	
Placing Score	
Reasons Score	
<b>FINAL SCORE</b>	

		1	2	3	4	Judges Negative Deductions
<b>EVALUATION FACTORS</b>	Place an X or blacken in boxes where you feel the 8 evaluation factors are found					
<b>Mixture</b> (maximum deduction - 30)	Other Varieties					
	Other Crops					
<b>Inert Material</b> (maximum deduction - 5)	Chaff, dirt, etc.					
<b>Weed Seed</b> (maximum deduction - 40)	Prohibited 1 <sup>st</sup>					
	2 <sup>nd</sup>					
	Noxious 1 <sup>st</sup>					
	2 <sup>nd</sup>					
	Common 1 <sup>st</sup>					
	2 <sup>nd</sup>					
<b>Soundness</b> (maximum deduction - 25)	Weathered					
	Sprouted					
	Immature					
	Disease					
	Mechanical Damage (including Heat)					
	Insect Damage					

**Soybean Judging Estimating the Value of Planting Seed**

Name: \_\_\_\_\_ Contestant Number: \_\_\_\_\_

School: \_\_\_\_\_ School Number: \_\_\_\_\_

FINAL PLACING			
1 <sup>ST</sup>	2 <sup>ND</sup>	3 <sup>RD</sup>	4 <sup>TH</sup>

( FOR JUDGES USE ONLY )	
Placing Score	
Reasons Score	
<b>FINAL SCORE</b>	

		1	2	3	4	Judges Negative Deductions
<b>EVALUATION FACTORS</b>	Place an X or blacken in boxes where you feel the 8 evaluation factors are found					
	<b>Mixture</b> (maximum deduction - 35)	Other Varieties				
	Other Crops					
	<b>Inert Material</b> (maximum deduction - 5)	Chaff, dirt, etc.				
<b>Weed Seed</b> (maximum deduction - 30)	Prohibited	1 <sup>st</sup>				
		2 <sup>nd</sup>				
	Noxious	1 <sup>st</sup>				
		2 <sup>nd</sup>				
	Common	1 <sup>st</sup>				
		2 <sup>nd</sup>				
<b>Soundness</b> (maximum deduction - 30)	Weathered					
	Immature					
	Disease					
	Mechanical Damage (including Heat Damage)					
	Insect Damage					

**HAY JUDGING Placing Card**

	Placings	Check Placing
The standard/factors of Leafness (50%), Color (25%) and Minimum Foreign Material (25%) will be used for the final placing.	1-2-3-4	A
	1-2-4-3	B
	1-3-2-4	C
	1-3-4-2	D
	1-4-2-3	E
	1-4-3-2	F
Contestant Number	2-1-3-4	G
	2-1-4-3	H
	2-3-1-4	I
	2-3-4-1	J
School Name	2-4-1-3	K
	2-4-3-1	L
	3-1-2-4	M
	3-1-4-2	N
	3-2-1-4	O
Student Name	3-2-4-1	P
	3-4-1-2	Q
	3-4-2-1	R
	4-1-2-3	S
Placings Score	4-1-3-2	T
	4-2-1-3	U
	4-2-3-1	V
	4-3-1-2	W
	4-3-2-1	X