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## EC78-193 Crops Contest Guide

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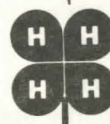
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EC 78-193



# CROPS CONTEST GUIDE



4-H-NEBRASKA STATE FAIR

FFA-NEBRASKA JUNIOR GRAIN SHOWS

Extension work in "Agriculture, Home Economics and subjects relating thereto," The Cooperative Extension Service, Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln, Cooperating with the Counties and the U.S. Department of Agriculture  
Leo E. Lucas, Director



## 4-H CROPS CONTEST Nebraska State Fair

Duane Foote  
Extension Agronomist (Grain)

### Rules

1. A team consists of 3 or 4 individuals with the scores of the three high individuals totaled for the team score. Membership of the team or teams must be designated before the contest.

2. A contestant may not compete for individual honors after winning the Gold Medal (High individual of any previous Nebraska Junior 4-H Crops Contest).

### FFA CROPS CONTEST

Held in conjunction with the Nebraska  
Junior Grain Shows

### Rules

1. The competition is open to individuals or teams.

2. Each team will consist of three members, with team members designated before the contest.

3. Each school will be limited to three FFA teams or a total of 10 individuals (three teams and one individual).

4. The first place individual of a previous state contest will *not* be eligible to compete as an individual. Members of the first place team may compete only as individuals.

### Crops Contest Guide

The Crops Contest will include:

1. Crop and Weed Seed Identification ..... 200 points
2. Seed Analysis ..... 200 points
3. Grain Grading ..... 200 points

**Crop and Weed Seed Identification** will be divided into classes—crop seed identification and weed seed identification. Each class will consist of 20-25 seed samples. In addition to identifying the sample the contestant must designate the general crop classification for crop seeds. When identifying weed seeds, the classification *Prohibited* (P), *Restricted* (R) or *Common* (C) must also be indicated.

Seed to be identified will be taken from the crop list and the weed list (Forms 1 and 2). Forms 3 and 4 are to be used in crop and weed identification.

**Seed Analysis** will consist of two classes of four samples. The two classes will be chosen from threshed samples of oats, soybeans, or wheat. Contestants must indicate on the seed analysis form (Form 5) those factors which describe the sample. Samples in seed analysis will be evaluated on their value for use as seed. Contestants will be graded on both the placing and the written reasons which justify the placing of the samples. Terms used in describing the samples are shown in Form 6, "Terminology Used in Seed Analysis."

**The Grain Grading** portion of the contest will involve the market grade and class determination of corn and hard red winter wheat. Grain samples may or may not be used. Grading problems such as in Forms 7 and 8 will be used.

The market grade and class and the grading factors must be indicated on the Grain Grading Forms. However, only those factors which determine the specific grade of each sample should be listed.

For example, if a grain sample grades No. 4 on test weight and other factors cause it to grade No. 2 or 3, only test weight should be mentioned as the grading factor. More than one factor may grade the sample, however. Special grades must be included in the final grade when they apply. Grade requirement charts will be provided for use by the contestants during the contest.

### Relative Importance of Factors Used In Seed Analysis

To determine the correct placing you must study the various factors which influence the final placing. These factors depend somewhat on the crop being judged. Here are some of the more important factors and relative importance of each in judging oats, soybeans and wheat. The point values are to be used only as a guide in determining the seriousness of the various factors.



## Factors In Judging Spring Oats

|  | Relative Points |
|--|-----------------|
| 1. Freedom from mixtures .....                                     | 25              |
| Spring barley .....  | 15              |
| Spring wheat .....   | 10              |
| Other crops .....  | 5               |
| 2. Freedom from inert material<br>(stems, dirt, chaff, etc.) ..... | 5               |
| 3. Freedom from weed seed .....                                    | 35              |
| Prohibited (Field bindweed,<br>Canada thistle, etc.) .....         | 25              |
| Restricted (Red sorrel, Horsenettle, etc.) ..                      | 15              |
| Common (Green foxtail, Kochia, etc.) .....                         | 5               |
| 4. Condition .....   | 25              |
| Discolored or weathered .....                                      | 10              |
| Immaturity (green seed) .....                                      | 10              |
| Disease (mold, etc.) .....   | 5               |
| Light weight (unfilled) .....                                      | 10              |
| Mechanical (skinned kernels) .....                                 | 5               |
| Insect damage .....  | 5               |

## Factors In Judging Soybeans

|   | Relative Points |
|---|-----------------|
| 1. Freedom from mixtures .....                                    | 25              |
| Varietal mixture .....  | 10              |
| Other crops .....   | 5               |
| 2. Freedom from inert material<br>(stems, pods, dirt, etc.) ..... | 5               |
| 3. Freedom from weed seeds .....                                  | 35              |
| Prohibited (Leafy spurge,<br>Russian knapweed, etc.) .....        | 25              |
| Restricted (Wild mustard, Curly dock, etc.) ..                    | 15              |
| Common (Velvet leaf, Sunflower, etc.) .....                       | 5               |
| 4. Condition .....  | 25              |
| Immaturity (shrunken seed) .....                                  | 10              |
| Disease (mold, purple mottled, etc.) .....                        | 10              |
| Discolored (weathering or aged) .....                             | 10              |
| Mechanical damage (splits, cracked) .....                         | 5               |
| Insect damage .....   | 5               |
| 5. Uniformity .....   | 10              |

## Factors In Judging Hard Red Winter Wheat

|  | Relative Points |
|--|-----------------|
| 1. Freedom from mixtures .....                                     | 25              |
| Rye .....  | 18              |
| Other classes of wheat .....                                       | 15              |
| Other crops .....  | 5               |
| 2. Freedom from inert material<br>(stems, dirt, chaff, etc.) ..... | 5               |

|  |    |
|--|----|
| 3. Freedom from weed seeds .....                         | 35 |
| Prohibited (Hoary cress, Musk thistle, etc.) ..          | 25 |
| Restricted (Curly dock,<br>Field pennycress, etc.) ..... | 15 |
| Common (Russian thistle,<br>Downy brome, etc.) .....     | 5  |
| 4. Condition .....                                       | 25 |
| Bleached .....   | 25 |
| Immature (green) .....                                   | 5  |
| Disease (scab, blacktip, etc.) .....                     | 5  |
| Heat or sprout damaged .....                             | 5  |
| Mechanical (broken) .....                                | 5  |
| Insect damage .....                                      | 5  |
| 5. Yellowberry .....                                     | 5  |
| Shrunken (shriveled) .....                               | 5  |

## Scoring of Forms-Points for Each

Contestants will be graded on the following basis in the various categories of the contest:

**Crop and Weed Seed Identification.** Each crop and weed seed will be worth four to five points. Points will be deducted for incorrect identification, improper classification and misspelling.

**Seed Analysis.** Both the placing and written reasons will be graded on the basis of 50 points each. Points will be deducted for incorrect placings and reasons.

**Grain Gradings.** Each grain grading problem will be worth 25 points.

## Materials and references for Crops Contest

1. Crop seeds for crop seed identification.
2. Weed seeds for weed seed identification.
3. Samples for seed analysis.
4. **Nebraska Weeds.** State Department of Agriculture.
5. **Judging Crop Quality, the Interstate.**
6. EC 66-126 Corn Kernel Damage.
7. EC 67-122 Wheat Grading Factors.
8. EC 72-190 Grain Grading.

Form 1. Crop seed identification.

*Corn*

1. Sweet corn
2. Popcorn
3. Dent corn

*Small Grain*

1. Wheat
2. Oats
3. Barley
4. Rye

*Sorghums*

1. Sudangrass
2. Sorghum

*Miscellaneous Crops*

1. Sugar beet
2. Millet

*Grasses*

Cool-season

1. Bromegrass
2. Kentucky bluegrass
3. Crested wheatgrass
4. Western wheatgrass
5. Intermediate wheatgrass

Warm-season

1. Big bluestem
2. Little bluestem
3. Switchgrass
4. Side-oats grama
5. Blue grama
6. Buffalograss
7. Indiangrass

*Legumes*

1. Alfalfa
2. Sweetclover
3. Red clover
4. Field bean
5. Soybean
6. Vetch

Form 2. Weed seed identification.

Identification by name on list and classification according to the Nebraska Seed Law must be indicated.

Classification

Prohibited — P  
Restricted — R  
Common — C

| <i>Name</i>                | <i>Classification</i> |
|----------------------------|-----------------------|
| 1. Canada thistle          | Prohibited            |
| 2. Field bindweed          | "                     |
| 3. Hoary cress             | "                     |
| 4. Leafy spurge            | "                     |
| 5. Russian knapweed        | "                     |
| 6. Johnsongrass            | "                     |
| 7. Musk thistle            | "                     |
| 8. Puncturevine            | "                     |
| 9. Skeltonleaf bursage     | "                     |
| 10. Morningglory           | "                     |
| 11. Scotch thistle         | "                     |
| 12. Plumeless thistle      | "                     |
| 13. Curly dock             | Restricted            |
| 14. Dodder                 | "                     |
| 15. Horsenettle            | "                     |
| 16. Field pennycress       | "                     |
| 17. Quackgrass             | "                     |
| 18. Wild mustard           | "                     |
| 19. Downy brome            | Common                |
| 20. Hairy ches             | "                     |
| 21. Green foxtail          | "                     |
| 22. Kochia                 | "                     |
| 23. Lambsquarters          | "                     |
| 24. Redroot pigweed        | "                     |
| 25. Russian thistle        | "                     |
| 26. Wild buckwheat         | "                     |
| 27. Pennsylvania smartweed | "                     |
| 28. Virginia pepperweed    | "                     |
| 29. Crabgrass              | "                     |
| 30. Milkweed               | "                     |
| 31. Velvetleaf             | "                     |
| 32. Red sorrel             | "                     |

*U.S. No. 3 Yellow Corn*

*U.S. No. 4 Yellow Corn*

*U.S. No. 5 Yellow Corn*

*U.S. No. 1 Mixed Corn*



# Form 3. Crops identification form.

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

Score \_\_\_\_\_

(Check appropriate column)

| Crop | Corn | Small Grain | Sorghums | Misc. Crops | Cool-Season Grass | Warm-Season Grass | Legumes |
|------|------|-------------|----------|-------------|-------------------|-------------------|---------|
| 1.   |      |             |          |             |                   |                   |         |
| 2.   |      |             |          |             |                   |                   |         |
| 3.   |      |             |          |             |                   |                   |         |
| 4.   |      |             |          |             |                   |                   |         |
| 5.   |      |             |          |             |                   |                   |         |
| 6.   |      |             |          |             |                   |                   |         |
| 7.   |      |             |          |             |                   |                   |         |
| 8.   |      |             |          |             |                   |                   |         |
| 9.   |      |             |          |             |                   |                   |         |
| 10.  |      |             |          |             |                   |                   |         |
| 11.  |      |             |          |             |                   |                   |         |
| 12.  |      |             |          |             |                   |                   |         |
| 13.  |      |             |          |             |                   |                   |         |
| 14.  |      |             |          |             |                   |                   |         |
| 15.  |      |             |          |             |                   |                   |         |
| 16.  |      |             |          |             |                   |                   |         |
| 17.  |      |             |          |             |                   |                   |         |
| 18.  |      |             |          |             |                   |                   |         |
| 19.  |      |             |          |             |                   |                   |         |
| 20.  |      |             |          |             |                   |                   |         |
| 21.  |      |             |          |             |                   |                   |         |
| 22.  |      |             |          |             |                   |                   |         |
| 23.  |      |             |          |             |                   |                   |         |

Form 4. Weed seed identification form.

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

Score \_\_\_\_\_

|     | Weed | (Check appropriate column) |            |        |
|-----|------|----------------------------|------------|--------|
|     |      | Prohibited                 | Restricted | Common |
| 1.  |      |                            |            |        |
| 2.  |      |                            |            |        |
| 3.  |      |                            |            |        |
| 4.  |      |                            |            |        |
| 5.  |      |                            |            |        |
| 6.  |      |                            |            |        |
| 7.  |      |                            |            |        |
| 8.  |      |                            |            |        |
| 9.  |      |                            |            |        |
| 10. |      |                            |            |        |
| 11. |      |                            |            |        |
| 12. |      |                            |            |        |
| 13. |      |                            |            |        |
| 14. |      |                            |            |        |
| 15. |      |                            |            |        |
| 16. |      |                            |            |        |
| 17. |      |                            |            |        |
| 18. |      |                            |            |        |
| 19. |      |                            |            |        |
| 20. |      |                            |            |        |
| 21. |      |                            |            |        |
| 22. |      |                            |            |        |
| 23. |      |                            |            |        |
| 24. |      |                            |            |        |
| 25. |      |                            |            |        |



Form 5. Seed analysis form.

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

Placing \_\_\_\_\_

Crop Judged \_\_\_\_\_

Score \_\_\_\_\_

Sample No. 1

I. Purity

A. Other crops, classes or types and inert material \_\_\_\_\_

B. Prohibited weeds \_\_\_\_\_

C. Restricted weeds \_\_\_\_\_

D. Common weeds \_\_\_\_\_

II. Condition

A. Color \_\_\_\_\_

B. Maturity \_\_\_\_\_

C. Disease Damage \_\_\_\_\_

D. Other Damage \_\_\_\_\_

E. Special Factors \_\_\_\_\_

Sample No. 2

I. Purity

A. Other crops, classes or types and inert material \_\_\_\_\_

B. Prohibited weeds \_\_\_\_\_

C. Restricted weeds \_\_\_\_\_

D. Common weeds \_\_\_\_\_

II. Condition

A. Color \_\_\_\_\_

B. Maturity \_\_\_\_\_

C. Disease Damage \_\_\_\_\_

D. Other Damage \_\_\_\_\_

E. Special Factors \_\_\_\_\_

Sample No. 3

I. Purity

A. Other crops, classes or types and inert material \_\_\_\_\_

B. Prohibited weeds \_\_\_\_\_

C. Restricted weeds \_\_\_\_\_

D. Common weeds \_\_\_\_\_

II. Condition

A. Color \_\_\_\_\_

B. Maturity \_\_\_\_\_

C. Disease Damage \_\_\_\_\_

D. Other Damage \_\_\_\_\_

E. Special Factors \_\_\_\_\_

Sample No. 4

I. Purity

A. Other crops, classes or types and inert material \_\_\_\_\_

B. Prohibited weeds \_\_\_\_\_

C. Restricted weeds \_\_\_\_\_

D. Common weeds \_\_\_\_\_

II. Condition

A. Color \_\_\_\_\_

B. Maturity \_\_\_\_\_

C. Disease Damage \_\_\_\_\_

D. Other Damage \_\_\_\_\_

E. Special Factors \_\_\_\_\_

Form 6. Terminology used in seed analysis.

| <i>Factors</i>                                 | <i>Wheat</i>  | <i>Oats</i>   | <i>Soybeans</i>  |
|--|---|---|--|
| I. Purity <sup>1</sup><br>(three or more seed) | Other crops<br>Other class<br><br>Inert material<br>Weeds | Other crops<br>Other class<br><br>Inert material<br>Weeds           | Other crops<br><br><br>Inert material<br>Weeds                     |
| II. Condition and soundness                    |   |   |  |
| A. Color                                       | Good<br>Fair (some bleaching)<br>Poor (bleached)          | Good<br>Fair (some discoloration)<br>Poor (discolored or weathered) | Good<br>Fair (some discoloration)<br>Poor (discolored & weathered) |
| B. Maturity                                    | Mature<br>Some immat. (green seed)<br>Immature            | Mature<br>Some immat. (green seed)<br>Immature                      | Mature<br>Some immat. (green seed)<br>Immature                     |
| C. Disease damage <sup>1</sup>                 | Bunt, Scab, Blacktip<br>Mold or Ergot                     | Mold  | Mold<br>Purple mottled   |
| D. Other damage <sup>1</sup>                   | Heat, Sprout, Mechanical, Insect, etc.                    | Mechanical (skinned)<br>Insect                                      | Insect<br>Mechanical (splits)                                      |
| E. Special factors <sup>1</sup>                | Soft texture (Yellowberry)<br>Shrunken (shriveled)        | Light weight (unfilled)   | Uniform or not uniform in size                                     |

<sup>1</sup>Purity and certain condition and soundness factors should be mentioned only when inferior. However, the term "trace" may be mentioned when a factor is present only in negligible amounts, i.e., less than 3 seeds of mixture, slight evidence of immaturity, disease, damage, etc.



Form 7. Grain grading form—corn.

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

SCORE \_\_\_\_\_

A. Yellow Corn 100.0% *y*  
 Test Weight 55.5 lb. 2  
 Moisture 13.2% 1  
 Broken & Foreign Material 1.4% 1  
 Total Damaged Kernels 4.5% 2  
 Heat Damaged 0.3% 3

Grade & Class U.S. No. 3 Yellow Corn

Factor(s) Heat Damage

B. Yellow Corn 99.0% *y*  
 White Corn 1.0%  
 Test Weight 56.0 lb. 1  
 Moisture 12.4% 1  
 Broken Corn & Foreign Material 0.8% 1  
 Total Damaged Kernels 9.5% 4

Grade & Class U.S. No. 4 Yellow Corn

Factor(s) Total Damaged Kernels

C. Yellow Corn 100.0% *y*  
 Test Weight 55.0 lb. 2  
 Moisture 21.5% 5  
 Broken Corn & Foreign Material 0.6% 1  
 Total Damaged Kernels 12.4% 5

Grade & Class U.S. No. 5 Yellow Corn

Factor(s) Moisture

Total Damaged Kernels

D. White Corn 97.0% *M*  
 Yellow Corn 3.0%  
 Test Weight 57.0 lb. 1  
 Moisture 11.8% 1  
 Broken Corn & Foreign Material 0.8% 1  
 Damaged Kernels 3.0% 1

Grade & Class No. 1 Mixed Corn

Factor(s) No degrading Factors

Color

Form 8. Grain grading—hard red winter wheat.

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

SCORE \_\_\_\_\_

|    |                   |              |    |                  |  |
|----|-------------------|--------------|----|------------------|--|
| 1. | Test Weight       | 59.7 lb.     | 2  | Grade & Subclass | <u>U.S. No. 5</u>                        |
|    | Moisture          | 11.2%        | -- |                  |  |
|    | Foreign material  | 3.2%         | 5  |                  | <u>Hard Red Winter Wheat-.5% Dockage</u> |
|    | Shrunken & broken | 0.3%         | 1  |                  |  |
|    | Total damage      | 6.5%         | 3  | Factor(s)        | <u>Foreign Material</u>                  |
|    | Total defects     | <u>10.0%</u> | 4  |                  |  |
|    | White wheat       | 4.7%         | 4  |                  |  |
|    | Dockage           | 0.6%         |    |                  |  |

|    |                   |             |    |                  |  |
|----|-------------------|-------------|----|------------------|--|
| 2. | Test Weight       | 62.5 lb.    | 1  | Grade & Subclass | <u>U.S. No. 3</u>                        |
|    | Moisture          | 10.5%       | -- |                  |  |
|    | Foreign material  | 0.4%        | 1  |                  | <u>Hard Red Winter Wheat-.5% Dockage</u> |
|    | Shrunken & broken | 2.7%        | 1  |                  |  |
|    | Total damage      | 3.2%        | 2  | Factor(s)        | <u>Heat Damage</u>                       |
|    | Heat damage       | 0.5%        | 3  |                  |  |
|    | Total defects     | <u>6.3%</u> | 3  |                  | <u>Total Defects</u>                     |
|    | Dockage           | 0.5%        |    |                  |  |

|    |                   |             |   |                  |  |
|----|-------------------|-------------|---|------------------|--|
| 3. | Test Weight       | 59.5 lb.    | 2 | Grade & Subclass | <u>U.S. Sample Grade</u>                   |
|    | Moisture          | 13.8%       | T |                  |  |
|    | Foreign material  | 0.9%        | 2 |                  | <u>Hard Red Winter Wheat, 1.5% Dockage</u> |
|    | Shrunken & broken | 0.2%        | 1 |                  |  |
|    | Total damage      | 0.5%        | 1 | Factor(s)        | <u>Distinct Low Quality - Pink Kernels</u> |
|    | Total defects     | <u>1.6%</u> | 1 |                  |  |
|    | Pink kernels      |             | S |                  |  |
|    | Dockage           | 1.8%        |   |                  |  |

|    |                   |             |    |                  |                              |
|----|-------------------|-------------|----|------------------|------------------------------|
| 4. | Test Weight       | 62.5 lb.    |    | Grade & Subclass | <u>U.S. No. 1</u>            |
|    | Moisture          | 12.5%       | -- |                  |                              |
|    | Foreign material  | 0.2%        | 1  |                  | <u>Hard Red Winter Wheat</u> |
|    | Shrunken & broken | 0.3%        | 1  |                  |                              |
|    | Total damage      | 0.3%        | 1  | Factor(s)        | <u>No Degrading Factors</u>  |
|    | Total defects     | <u>0.8%</u> | 1  |                  |                              |
|    | Dockage           | 0.2%        |    |                  |                              |

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