

# Agronomy Contest

Revised: April 13, 2015

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## I. Eligibility

- A. Read General Rules
- B. Two teams per county or a maximum of eight participants.

## II. Procedures

The Agronomy is composed of three sections:

### A. Component Descriptions

#### **a. Identification - 240 points (48 specimens at 5 points each)**

Students will identify 20 plant specimens, 20 seed specimens, and 8 farm equipment specimens. Ideally, the plants should be live specimens and can represent any stage of development. However, they could be press mounts or photographs. Plant specimens should be equally divided between crop and weed plants. Each seed specimen must be real seed, no photographs of seeds. Seed specimens should be equally divided between crop and weed seeds. Specimens can only come from the ID list's provided. Each specimen will be worth five points.

**\*\*Note:\*\*** Some ID lists will include scientific names which are provided to assist in finding reference materials for proper specimen identification. Students are not required to know the scientific name for any New Mexico 4-H Agronomy Contest specimen!

***(Answers will be recorded in the top Identification division on the back of the scantron using 1-48. Each specimen has an assigned number on its ID list. Use these numbers for scantron answers.)***

#### **b. Placing classes - 150 points (3 classes at 50 points each)**

There will be three placing classes each having four samples. Students will rank the four samples in proper order based on quality, uniformity, and shelf life of each sample. One class will be representative of each of the following categories; grain crops (seed samples), forage crops (loose or baled hay or green chop), and fruit or vegetable crops (fruits, berries, leaves, tubers etc). Class specimens will only be chosen from the provided "Crops ID list".  
***(Answers will be recorded in the placing classes portion of the scantron.)***

#### **c. Insect Identification – 120 points (5 specimens totaling 24 points each)**

This component will consist of identifying insects. Additionally students will have to identify characteristics related to the individual insect. Students will identify five insects (8 points each) along with the following characteristics for each insect identified:

- a. Life cycle of each specimen (8pts.)
- b. Mouth part (8pts.)

### **III. SCORING**

Identification	240 points
Placing Classes	150 points
Insect Identification	120 points
Individual Score	510 points
Team Score	1530 points

### **IV. TIE BREAKER**

Individual ties will be broken using the following tiebreakers.

1. Highest score on the Identification
2. Highest score on the Pest Identification
3. Highest score on the Placing classes

Team ties will be broken using the following tiebreakers.

1. High Individual

**- all references are listed on the following pages -**

## V. REFERENCES (by component section)

### Identification

#### a. General Plant Identification resources.

**10. Field identification of the 50 most common plant families in temperate regions (including agricultural, horticultural, and wild species)** by Struwe, L.. Rutgers University, New Brunswick, NJ, USA. 2009. Published by the author, available at [http://www.sci.sdsu.edu/plants/plantsystematics/studentresources/Struwe\\_50MajorTempPlantFamilies2016.pdf](http://www.sci.sdsu.edu/plants/plantsystematics/studentresources/Struwe_50MajorTempPlantFamilies2016.pdf).

**11. Plant Identification Basics** by Mangold, J. and Parkinson, H., Montana State University Extension Service, September 2013. *pdf available at* <http://msuextension.org/publications/AgandNaturalResources/MT201304AG.pdf>.

**12. Plant ID Basics** by Sellers, B.A., University of Florida, IFAS Extension. 2009. *Slides available at* [http://weedext.ifas.ufl.edu/slides/Plant\\_ID\\_Basics/index.htm](http://weedext.ifas.ufl.edu/slides/Plant_ID_Basics/index.htm).

**13. Identifying Pasture Grasses** by Undersander, D., Casler, M., and Cosgrove, D., Cooperative Extension of the University of Wisconsin-Extension, publication-A3637. 1996. *pdf available at* <http://learningstore.uwex.edu/assets/pdfs/A3637.pdf>

**14. Plant Identification**, Plant Materials Technical Note No. 5, United States Department of Agriculture, Natural Resources Conservation Service, September 2010. *pdf available at* <https://www.nrcs.usda.gov/plant-materials/publications/search>.

**15. Identification: Characteristics of Grasses**, Agriculture and Natural Resources, University of California. 2014. available at: <http://www.ipm.ucdavis.edu/PMG/WEEDS/ID/idcharac.html>.

#### b. Crops plants and seeds identification resources

**16. Crops CDE ID powerpoints**, Indiana 4-H Youth Development, Purdue University Extension. 2008. *available at:* [https://extension.purdue.edu/4-H/\\_docs/get-involved/state-programs/CDE/indiana-crops-cde.pdf](https://extension.purdue.edu/4-H/_docs/get-involved/state-programs/CDE/indiana-crops-cde.pdf). (Powerpoint slides showing several specimens of crop plant and seed id and weed plant and seed id. Slides highlight distinguishing characteristics.)

**17. Cucurbit Seed Production, An organic seed production manual for seed growers in the Mid-Atlantic and Southern U.S.**, Carolina Farm Stewardship Association, 2005. available at: <http://www.carolinafarmstewards.org/wp-content/uploads/2012/05/CucurbitSeedProductionver1.4.pdf>.

(This resource covers cucumber, pumpkins, and squash. It includes information about plant and seed characteristics. It also shows photos and gives information about several of the insects on the Agronomy insect list.)

**18. Forage Identification Pages**, Purdue University, Department of Agronomy, Agronomy Extension, 2007. *available at:* <http://www.agry.purdue.edu/ext/forages/ForageID/forageid.htm> .

(Covers stem, leaf, flower, and seed characteristics for alfalfa, Ladino clover, sweet clover, red clover, orchardgrass, tall fescue, timothy, and sudangrass.)

**19. Seed ID Workshop**, The Ohio State University, Ohio Agricultural Research and Development Center. 2009. *available at:* <http://www.oardc.ohio-state.edu/seedid> .

(photos for about half of the crops seed id specimens.)

#### c. Weeds plants and seeds identification resources

**20. Weeds of the West** (Fifth Edition) by Larry C. Burrill, Steven A. Dewey, David W. Cudney, B. E. Nelson, Tom Whitson, Tom D. Whitson, L. C. Burrill. Paperback, 630 Pages, Published 1996.

(This is a great book describing the majority of the weed species in the west. It usually has a couple of photos and descriptive plant characteristics).

**21. Weed Id Pages**, Weeds Society of America. 2014. available at:  
<<http://wssa.net/weed/weedidentification/weed-id-pages>>.

(This resource lists all the university weed identification websites. Follow the listings under "Agronomic Crop Weeds". You will find plenty of weed id resources at this one site.)

**22. Weed Information**, New Mexico State University, Weed Science. 2014. available at:  
<<http://weeds.nmsu.edu>>.

#### d. Entomology Insect Identification resources

**23. Who Let the Bugs Out?: A Beginner's Guide to Managing Radical Insects** by Timothy J. Gibb. Purdue University, 2013. available at:  
<<http://extension.entm.purdue.edu/radicalbugs/default.php?page=home>>.

**24. One Hundred Common Insects of New Mexico** by Richman, David B., Sutherland, Carol A., and Oseto, Y., New Mexico Cooperative Extension Service, November 1993.  
< [http://aces.nmsu.edu/pubs/\\_circulars/CR570.pdf](http://aces.nmsu.edu/pubs/_circulars/CR570.pdf)>

**25. Indiana 4-H Entomology, Insect Flashcards**, Purdue University Extension. 2011. available at:  
<[http://extension.entm.purdue.edu/4hyouth/pdf/Flashcards\\_web.pdf](http://extension.entm.purdue.edu/4hyouth/pdf/Flashcards_web.pdf)>.

(Great resource containing photos and descriptive information for most of the NM Agronomy listed insects).

**26. A Field Guide to Common Texas Insects**, Texas A&M University, Department of Entomology. 2012. available at: <<https://insects.tamu.edu/fieldguide>>.

(Insects are sorted by Order. Photos and description of most of the NM Agronomy listed insects).

**27. Insect Diagnostic Laboratory**, Cornell Cooperative Extension, College of Agriculture and Life Sciences at Cornell University. available at: <<http://idl.entomology.cornell.edu/factsheets>>.

(This resource does not include a lot of the listed insects, but the ones it does have an entire pdf factsheet dedicated to them.)

**28. Insect Images**, Center for Invasive Species and Ecosystem Health. The University of Georgia. 2010. available at: <<https://www.insectimages.org/>>.

(This resource has an extensive photo database for most any insect imaginable. This is primarily a photo site and does not include descriptive information.)

#### e. Equipment

There are no reference resources for this portion of the Agronomy CDE. A simple Google search for the items on the equipment list will provide the student with plenty of images and information for each equipment specimen.

## **VI. AWARDS**

First through fifth place ribbons will be awarded to the winning team members and high point individuals. Medals will go to the first place team. A plaque will go to the high point individual.