TURFGRASS MANAGEMENT

4 Member Team

IMPORTANT NOTE

Please thoroughly read the General CDE Rules Section at the beginning of this handbook for complete rules and procedures that are relevant to State FFA Career Development Events.

I. PURPOSE

The purpose of the FFA Turfgrass Management Career Development Event is to promote career interest, encourage proficiency development and recognize excellence in participants of the event which includes all aspects of the industry to utilize and maintain turfgrass and synthetic turf surfaces for lawn, golf, and sports settings, as well as related equipment and performance testing methods.

II. OBJECTIVES

A. Turfgrass Management Principles: To apply turfgrass management principles and practices as they impact lawn, park, golf, and sports field applications.
B. Plant Materials: To demonstrate the ability to identify, select and utilize turfgrass species and synthetic turf systems commonly used in the United States.
C. Plant Disorders and Weeds: To demonstrate the ability to identify unhealthy plant conditions due to pests, nutritional/physiological disorders and mechanical/chemical injury; demonstrate the ability to identify common weeds.
D. Cultural Practices: To demonstrate knowledge of the principles and skills involved in propagation, growth requirements, harvesting, and maintenance of turfgrasses for various uses.
E. Design and Construction: To demonstrate knowledge of the principles and techniques of golf course and sports fields design, including drainage and sand-based rootzones.
F. Supplies and Equipment: To demonstrate the ability to identify, select, use and maintain appropriate supplies and equipment for turfgrass management, including equipment.
G. Safety: To demonstrate knowledge of safety practices in turfgrass management operations.
H. Interpersonal Relations: To demonstrate skills in oral and written business communications.
I. Records and Reports: To demonstrate the ability to prepare accurate and legible records and reports and to interpret business documents.

III. EVENT RULES

A. Coaches may accompany participants to the event site but must then leave the area at the start of the event. At the conclusion of all event components, the superintendent will announce when participants and coaches may enter the competition area to review the materials and organization.
B. Under no circumstances will any participant be allowed to touch or handle plant materials or other specimens during the event except as expressly permitted in certain

practicums. Any participant in possession of an electronic device in the event area is subject to disqualification.

IV. EVENT FORMAT

A. Team Make-Up
   1. Each school may enter only one team, consisting of 4 members.
   2. Only those schools without a team may enter up to three individuals to compete for individual awards.
   3. Only those students who are competing will be allowed to participate in the event.
   4. The score for a team will consist of a total of all four members.

B. Materials
   A. No personal tools or supplies, except for pencils and pens, may be brought to the event unless specified in the event description.
   B. The contest superintendent will supply clipboards, sample scan sheets for marking, identification lists, and official scan sheet to be turned in.

C. Event Schedule
   A. Each contestant will complete sections in the allotted time.
   B. General Exam (45 minutes)
   C. Identification of Turfgrasses, Disorders, and Equipment (45 minutes)
   D. Individual Practicum (30 minutes)
   E. Team Activity (30 minutes)

V. EVENT COMPONENTS

A. General Knowledge (150 points)
   1. This portion of the event will consist of 30 questions to evaluate the participant's knowledge of pesticide use and safety, cultural practices, fertilizers, soil type, irrigation, plant anatomy, and proper turf management practices.
   2. Each question is worth 5 points.
   3. Questions may be of the multiple choice, true-false, and/or matching format(s).

B. Identification (200 points)
   1. Contestants will receive an ID Card listing all possible specimens as shown on the attached list.
   2. Contestants must place the ID number, representing the appropriate name, next to the number of the specimen to be identified.
   3. Specimens may be presented as live, preserved, on slides, or as a color photograph.
   4. Duplicate specimens may be used and may be represented by mowed or non-mowed samples, actual organism (insect, fruiting bodies from pathogenic fungi, or weeds for example) and/or by symptoms on plant parts such as leaves, stems or roots.
   5. When a problem is presented with an affected plant, a "Disorder" label will be with the item to designate identification of the problem rather than the plant.
      a. Turfgrasses:
         i. Each contestant will be required to identify 10 specimens (5points each) from the Turfgrass Species Identification list.
      b. Plant Disorder and Weeds Identification:

i. Each contestant will be required to identify 20 specimens (5 points each) from the attached list.

c. Equipment and Supplies Identification:

i. Each contestant will be required to identify 10 pieces of equipment (5 points each) from the attached list.

C. Individual Practicum (100 points)

Each participant will complete one of the following practicum activities. The specific practicum will not be announced until the time of the contest.

1. Site assessment and takeoff case study:
   a. Participants will be shown a problematic turf area or area under renovation and tasked with calculating the area of the irregularly shaped space using the offset method.
   b. The participants will answer 5 to 10 questions associated with current conditions at the site (weeds, soil, drainage, irrigation pattern, etc).
   c. As a final task, students will write a recommendation on how to proceed with completing the renovation to improve site conditions. Students should emphasize logistical considerations for removal and replacement of sod, equipment necessary for the task, fertilizer and irrigation scheduling, estimated timeline for completion of the task, and estimated timeline for intended use (e.g., when traffic can be tolerated).
2. Irrigation scheduling:
   a. Each participant will be provided a set of values from catch cans used for an irrigation audit of a single sprinkler zone.
   b. Catch cans could measure in inches, mm, or mL.
   c. Participants will then be required to calculate the precipitation rate (inches/hr) from the dataset and calculate run times for a controller to apply 1-inch of irrigation.
   d. Participants will use the same dataset to also calculate the distribution uniformity (DULQ) and make recommendations on whether it is acceptable or if further repairs may be warranted to enhance uniformity.
3. Soil test interpretation:
   a. Participants will be provided two fertilizer labels, the cost per bag of each product, and a soil test result for a bermudagrass sports field.
   b. They will be required to look at the soil test result and determine if a complete fertilizer (containing N, P, and K) is required or if a straight nitrogen product can be used.
   c. Students will be asked 5 to 10 questions comparing the products, amount of the chosen product to meet nutrient needs, and the cost per acre (based on the nutrient rate).

D. Team Event (200 points)

All contestants will participate in the practicum as a team – 1 of the following activities will be assessed. The specific practicum will not be announced until the time of the contest.

1. Boom Sprayer Calibration:
   a. Each team will be tasked with calculating the carrier volume in gallons per acre for a boom- type sprayer (using the 5940 equation).

b. Students will be provided a small sprayer filled with water, tape measure, a graduated cylinder, a stopwatch, and information on speed of operation.
c. Participants will be evaluated on ability to measure sprayers effective width, nozzle width, nozzle height, output of a single nozzle, calculation of carrier volume (in gal/acre), determining the amount of spray solution needed to cover the defined area and the amount of product to mix in the tank.

2. Rotary or Drop Spreader Calibration:
   a. Students will be provided product for application, rotary spreader or drop spreader, tarp or calibration pan, collection pans, tape measure, scale, bucket, flags, calculator.
   b. Participants will be evaluated on the following:
      i. Calculating the area to which the product is being applied, measuring the spreader's effective swath, measuring the calibration run length,
      ii. Determining the amount of product needed to deliver the desired amount of nutrient,
      iii. Determining the appropriate spreader setting to deliver the desired amount of material.

VI. SCORING

General Knowledge	150
Identification	200
Individual Practicum	100
Team Practicum (applies only to team score)	200
Total Points – Individual	450
Total Points – Team	2000

VII. TIEBREAKERS

A. In the case of tied individual or team total scores, final placings will be determined by comparing, in order, scores for the following:
B. Identification Section
C. Written Exam
D. Individual Practicum
E. Team Practicum (team only)

VIII. REFERENCES

- Christians and Agnew, The Mathematics of Turfgrass Maintenance (3rd Edition), University of Massachusetts.
- Christians, N. Fundamentals of Turfgrass Management (2nd Edition), John Wiley Sons Inc.
- North Carolina State University TurfFiles Website. www.turffiles.ncsu.edu/.
- Sports Field Management Association Secondary Curriculum. https://www.sportsfieldmanagement.org/.
- OSU Turfgrass Facts. turf.okstate.edu/educational-materials/turfgrass-facts/.
- SFMA Irrigation Audit Worksheet https://sportsfieldmanagementonline.com/2020/03/17/irrigation-audits-and-troubleshooting-for-success/11234/

- Arkansas FFA Turf Management CDE Resources Page https://www.arkansasffa.org/page.aspx?ID=5185.

VII. SUPPLEMENTAL MATERIALS AND FORMS

- Scanform: Universal Form C #705C-1