

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

IV. **EVENT FORMAT**

A. Team Make-Up

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

B. Equipment

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

C. Event Schedule

Each contestant will complete sections in the allotted time.

- 1) General Exam (1-hr)
- 2) Identification of Turfgrasses, Disorders, and Equipment (30 minutes)
- 3) Practicum (20 minutes)

D. General Knowledge (150 points)

- This portion of the event will consist of 50 questions to evaluate the participant's knowledge of pesticide use and safety, cultural practices, fertilizers, soil type, irrigation, turf math problems, plant anatomy, and proper turf management practices.
- Each question is worth 3 points.
- Questions may be of the multiple choice, true-false, and/or matching format(s).

E. Plant Identification (50 points)

1. Each contestant will be required to identify 10 specimens (5 points each) from the Turfgrass Species Identification list.
2. Contestants will receive an ID Card listing all possible specimens as shown on the attached list.
3. Contestants must place the ID number, representing the appropriate name, next to the number of the specimen to be identified.
4. Duplicate specimens may be used and may be represented by mowed or non-mowed samples.

F. Plant Disorder and Weeds Identification (100 points)

- Each contestant will be required to identify 20 specimens (5 points each) from the attached list.
- Duplicate specimens may be used and may be represented by the 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.
- When a problem is presented with unaffected plant, a “Disorder” label will be with the item to designate identification of the problem rather than the plant.

G. Equipment and Supplies Identification (50 points)

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

H. Practicum (50 points)

- All contestants will participate in the practicum. Each practicum activity will consist of a hands-on task and/or up to twenty-five questions about the practicum activity. This year’s practicum activity is as follows:

Site Evaluation—

Each team will be furnished a tape measure and tasked with measuring an irregularly shaped space and assessing various attributes of the plot. The value of each correct answer will be 2 points (20 questions) and ten (10) points for determining the plot size. Time allotted will be 20 minutes.

V. SCORING

General Knowledge	150
Plant Identification	50
Plant Disorder & Weeds Identification.....	100
Equipment and Supplies Identification.....	50
Practicums.....	50

Total Points

Individual..... 400

Team..... 1600

VI. TIEBREAKERS

If needed in the case of tied individual or team total scores, final placings will be determined by comparing, in order, scores forth following:

1. Phase 2– Identification Section
2. Phase 3–Written Exam

VII. 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 Turf Managers Association Secondary Curriculum. www.stma.org/.

OSU Turfgrass Facts. turf.okstate.edu/educational-materials/turfgrass-facts/.

United States Golf Association. www.usga.org/content/usga/home-page/course-care.html/.

National Turfgrass Evaluation Program. www.ntep.org/.

VIII. SUPPLEMENTAL MATERIALS AND FORMS

Universal Form C #705C-1

Turfgrass Species Identification
2017-2021

Cool Season Grasses

(Common name *Scientific name*)

- 001 Kentucky bluegrass *Poa pratensis*
- 002 Perennial ryegrass *Lolium perenne*
- 003 Tall fescue *Festuca arundinacea* = *Schedonorus arundinaceus* = *Lolium arundinaceum*
- 004 Fine fescue (*Festuca* spp.)
- 005 Creeping bentgrass *Agrostis stolonifera*
- 006 Colonial bentgrass *Agrostis capillaris*
- 007 Velvet bentgrass *Agrostis canina*
- 008 Rough bluegrass *Poa trivialis*
- 009 Annual bluegrass *Poa annua*
- 010 Annual ryegrass *Lolium multiflorum*

Warm Season grasses

- 011 Japanese / Korean lawngrass *Zoysia japonica*
- 012 Manila grass *Zoysia matrella*
- 013 Hybrid bermudagrass *Cynodon dactylon* X *C. transvaalensis*
- 014 Common bermudagrass *Cynodon dactylon*
- 015 Centipedegrass *Erechloa ophiuroides*
- 016 Seashore paspalum *Paspalum vaginatum*
- 017 Buffalograss *Bouteloua dactyloides*
- 018 St. Augustinegrass *Stenotaphrum secundatum*
- 019 Kikuyugrass *Pennisetum clandestinum*
- 020 Bahiagrass *Paspalum notatum*
- 021 Blue Grama *Bouteloua gracilis*

**OKLAHOMA STATE TURFGRASS MANAGEMENT FFA-CDE
2017-2021 PESTS, DISORDERS AND BENEFICIAL INSECT IDENTIFICATION**

Diseases

101	Large Patch	106	Leaf Rust
102	Spring Dead Spot	107	Leaf Spot/Melting Out
103	Brown Patch	108	Dollar Spot
104	Fairy Ring	109	Take All Patch
105	Bermudagrass Decline	110	Pythium Blight

Insects and Related Pests

111	Black Cutworm	116	Hunting Billbug
112	Fall Armyworm	117	Annual Bluegrass Weevil
113	Chinch Bug	118	Cicada Killer Wasp
114	Mole Cricket	119	Mites
115	White Grub	120	Nematode

Physiological Problems

121	Frost/Freeze Injury	125	Wet Wilt
122	Localized Dry Spot	126	Mower Injury (scalping)
123	Leaf Firing (drought)	127	Thatch
124	Soil Compaction	128	Black Layer

Weeds

129	Broadleaf Plantain	138	White Clover
130	Goosegrass	139	Dallisgrass
131	Chickweed	140	Shepherdspurge
132	Crabgrass	141	Prostrate Spurge
133	Dandelion	142	Carolina Geranium
134	Henbit	143	Carpet Weed
135	Yellow Nutsedge	144	Annual Bluegrass
136	Oxalis	145	Curly Dock
137	Black Medic	146	Common Bermudagrass

**OKLAHOMA STATE TURFGRASS MANAGEMENT FFA-
CDE 2017-2021 EQUIPMENT AND SUPPLIES
IDENTIFICATION**

201	Aerator	236	Respirator
202	Ball Valve	237	Rotary mower
203	Bayonet Tine	238	Rotating Spray Sprinkler
204	Broadcast Spreader	239	Rotor Sprinkler
205	Bunker Rake	240	Rototiller
206	Clegg Impact Hammer	241	Sand Rake
207	Cocoa Drag Mat	242	Slit Seeder
208	Controller (Golf)	243	Sod Cutter
209	Controller (RESCOM)	244	Soil Moisture Meter
210	Crumb Rubber	245	Soil Probe
211	Cup Cutter	246	Soil Profile Probe
212	Daily Light Integral Meter (Quantum Sensor)	247	Solenoid
213	Dew Whip	248	Solid Roller
214	Drop Spreader	249	Solid Tine
215	Electric Valve	250	Spray Sprinkler
216	Fertilizer	251	Spray Nozzle
217	Flail Mower	252	Sprayer
218	Fraze Mower	253	Steel Drag Mat
219	Fungicide	254	Stimpmeter
220	Gate Valve	255	String Trimmer
221	Grooming Reel	256	Swing Joint
222	Head Checker Pressure Gauge	257	Synthetic Turf Groomer
223	Herbicide	258	Topdresser
224	Hollow Tine	259	Turbine Blower
225	Impact Sprinkler	260	Two-wire Decoder
226	Irrigation Audit Catch Can	261	Valve Box
227	Light-weight roller	262	Valve Diaphragm
228	Measuring Wheel	263	Valve-in-head Sprinkler
229	Turf Painter	264	Vertical Mower / Dethatcher
230	Irrigation Pipe Puller	265	Wiehle Roller
231	Pressure Gauge		
232	Quick Coupler Key		
233	Quick Coupler Valve		
234	Reel Mower		
235	Reflectance Meter		

**OKLAHOMA STATE TURFGRASS MANAGEMENT
FFA-CDE 2017-2021 SAMPLE TURF MATH PROBLEMS**

1. Based on a soil test you submitted in March, you have determined your lawn is low in potassium and has a soil pH of 5.4.

i. Should lime be applied to the area? Yes No

ii. Which of the following fertilizers would be best to apply?

A. 46-0-0

B. 6-2-0

C. 10-5-20

2. How much 20-4-12 is needed to apply 0.5 lb N per 1,000ft² to a 7,000 ft² area?

_____pounds

3. Your local distributor has two fertilizer products that meet your needs:

A. 16-4-8 at \$18.00 per bag

B. 28-4-10 at \$25.00 per bag

Assuming each bag is 50 lb., which product is least expensive per pound of nitrogen?

Fertilizer _____

Price per pound of nitrogen \$____
(to the nearest cent)

Identification

1

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

2

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

3

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

4

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

5

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

6

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

7

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

8

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

9

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

10

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

11

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

12

13

14

15

16

17

18

19

20

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

21

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

22

23

24

25

26

27

28

29

30

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

31

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

32

33

34

35

36

37

38

39

40

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

41

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7

42

43

44

45

46

47

48

49

50

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7