

# NURSERY/LANDSCAPE

## **Purpose**

The purpose of the Nursery/Landscape Contest is to encourage students to gain knowledge of the production, marketing, utilization, and culture of landscape plants.

## **Objectives**

In preparing for the contest, the student should develop the following skills:

- I. Identification of woody ornamental and turf plants commonly used in Missouri landscapes.
- II. Understanding of the basic principles involved in correct use of plants in the landscape.
- III. Ability to diagnose common problems encountered in the culture of landscape plants and to prescribe methods for preventing or correcting these problems.

### 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.	Identification of woody ornamental and turf plants commonly used in Missouri landscapes.	CA.5	1.4, 1.5, 1.10
2.	Ability to recognize the characteristics of a given plant which adds to or detracts from its quality or usefulness.	MA.1, MA.2, MA.5 SC.3, SC.4, SC.8	3.1, 3.2, 3.3, 3.5, 3.6, 3.8 4.4, 4.8
3.	Understanding of the basic principles involved in correct use of plants in the landscape.		
4.	Ability to diagnose common problems encountered in the culture of landscape plants and to prescribe methods for preventing or correcting these problems.		

Corresponding Secondary Agriculture Curriculum			
<b>Course and/or Curriculum:</b>	Landscape/Turfgrass Management	<b>Unit(s):</b>	Unit III – Identification Unit IX – Site Analysis and Evaluation Unit X – Selecting and Using Plants in the Landscape Unit XI – Landscape Designing Unit XII – Developing Cost Estimates
	Greenhouse Operation and Management		Unit VI – Plant Health Unit VII – Greenhouse Business Management
	Plant Science		Unit IV – Weeds, Diseases and Insects
	Plant Science Curriculum		Basic Plant Science Basic Soil Science Landscape Management Turfgrass Management

## Event Format

The Nursery/Landscape CDE shall consist of the following four (4) components:

### **1. General Knowledge Examination**

This portion of the contest will test the contestant's knowledge and understanding of the production, marketing, utilization, and culture of landscape plants. One (1) hour will be the maximum time allotted for the exam. It will consist of 50 multiple choice questions selected from the following:

- (1) Turf Grasses (2) Shrubs (3) Trees (4) Pests and Pesticides (5) Soils
- (6) Planting (7) Fertilizers (8) Pruning (9) Landscaping.

### **2. Practicum - Plant Disorder and Beneficial Identification**

This portion of the contest will test the ability of the contestants to identify diseases, insects (harmful or beneficial), weeds, and physiological disorders based on plant systems or on the pests themselves. Contestants will be required to make diagnoses on 20 specimens drawn from the Plant Disorder Diagnosis Scorecard (Form 67).

Specimens may be live, preserved, photographs, or symptoms associated with disorders. One (1) minute per sample will be allowed and a 10 minute review period will be allowed at the end. All students will turn in all handouts at the end of each component such as the "Plant Disorder Diagnosis" handout (Form 6).

### **3. Landscape Design Problem**

This practicum is designed to evaluate participants' knowledge of and ability in:

- (1) Evaluating a landscape design
- (2) Reading a landscape drawing
- (3) Measuring and calculating materials needed to execute a landscape plan
- (4) Evaluating factors that affect profitability of a landscape business

A landscape drawing and scratch paper will be provided to the participants. Students will not be allowed to bring their own scratch paper – only allowed to use paper provided. There will be 20 objective questions about the landscape plan, and each correct answer has a value of 5 points. The questions may include such areas as determining how accent was provided in the public area, the form and size specified for a certain plant, the cost of fencing, the number of patio pavers required, the area of sod to be installed, the volume of mulch required and the labor cost to install a ground-cover bed. All handout materials must be turned in at the end of each component – landscape drawing and all scratch paper must be turned in. Maximum of one (1) hour to complete this component. \*The design plan scale should be a scale shown on a standard engineer scale.

### **4. Identification**

Each contestant will be required to identify 50 specimens from the Nursery/Landscaping Supplemental Information List. This handout must be turned in at the completion of this component. A specimen may be twigs, foliage, flower, fruit, or an entire plant. Specimens will be identified by number. The contestant will need to match the specimen with the correct name on the answer sheet and write the number of the specimen in the blank next to the name. A plant may be represented by more than one specimen. A maximum of 50 seconds per identification sample will be allowed and a 10-minute review period will be allowed at the end. **Duplicate samples may not be used in any identification portion of the event.**

## Event Scoring

<b>Event</b>	<b>Points</b>	<b>Suggested Time</b>
General Knowledge Exam - 50 questions @ 4 points each	200 points	1 hour
Plant Disorder & Beneficial Id Practicum - 20 specimens @ 5 points each	100 points	30 minutes
Landscape Design Problem - 20 questions @ 5points each	100 points	1 hour
Identification - 50 specimens @ 4 points each	200 points	1 hour
<b>Total</b>	<b>600 points</b>	

**1. Tie scores among teams in all events should be broken using the high individual team member's score.** In case the scores are tied, the scores of the second high individual on each team should be used.

### Event Rules and Regulations

1. A team will consist of three or four members.
2. The team score will be the total of the 3 highest individual scores for the respective team.
3. Students are allowed to bring their own **ruler, architectural scale or engineer's scale** for use in the CDE.

## Testing References

Landscaping Principles and Practices – 7<sup>th</sup> Edition. By Jack E. Ingels.

[http://www.delmarlearning.com/browse\\_product\\_detail.aspx?catid=32398&isbn=1428376410](http://www.delmarlearning.com/browse_product_detail.aspx?catid=32398&isbn=1428376410)

Plant Science Curriculum – Basic Plant Science, Basic Soil Science, Landscape Management, Turfgrass Management Units - available on the Missouri FFA website under the Plant Science curriculum

## Training References

### **Identification**

Catalogs from mail order seed and nursery companies are an excellent source of information. They can be obtained free of charge from most companies. Farm and garden magazines are full of addresses for these companies in the spring of the year.

Trees of Missouri Field Guide, available from MDC for \$7.50

<http://www.mdcnatureshop.com/mdc.cgi/scan/st=db/co=yes/sf=category/se=Plants/op=eq.html?id=W3s5EDC8>

A Guide to Field Identification--Trees of North America, C. Frank Brockman, Golden Press, New York, 1968.

American Standards for Nursery Stock, American Association of Nurserymen, 230 Southern Building, Washington, DC 20005.

### **General**

Landscaping and Turf Management (Instructor and Student Reference) (1990). IML available via DESE website under the Plant Science Curriculum Cont. tab.

Applicator Certification Core Manual (MX328), *Appendix C – Conversions & Calculations AND pages 169-171 – Calculating Areas & Calculating Application Rates.*

Landscape Design, A Practical Approach 4<sup>th</sup> Edition (1988). Leroy G. Hannebaum. Prentice-Hall, Inc., Englewood Cliffs, NJ.

Ornamental and Turf Pest Control, Missouri Manual 89, Published by MU Extension – Extension Publications, 2800 Maguire Blvd., UMC, Columbia, MO 65211. Phone: 800-292-0969.

Reiley & Shry (1988). Introductory Horticulture, Albany, New York: Delmar Publishers, Inc.

## Forms

See the following: Training Identification List Student Reference, Plant Identification Contestant Reference 1, Plant Disorder Contestant Reference 2

## **Supplemental Information: Identification List**

### **SHADE TREES**

001. Bald Cypress / *Taxodium distichum*
002. Ginkgo / *Ginkgo biloba*
003. Honey Locust / *Gleditsia triacanthos*
004. Japanese Maple / *Acer palmatum*
005. Little Leaf Linden / *Tilia cordata*
006. London Planetree / *Platanus x acerfolia*
007. Northern Red Oak / *Quercus rubra*
008. Norway Maple / *Acer platanoides*
009. Pin Oak / *Quercus palustris*
010. Red Maple / *Acer rubrum*
011. River Birch / *Betula nigra*
012. Sugar Maple / *Acer saccharum*
013. Sweet Gum / *Liquidambar styraciflua*
014. Tulip Tree / *Liriodendron tulipifera*
015. White Oak / *Quercus alba*

### **FLOWERING TREES**

016. Downy Serviceberry / *Amelanchier arborea*
017. Eastern Redbud / *Cercis canadensis*
018. Flowering Crabapple / *Malus spp.*
019. Flowering Dogwood / *Cornus florida*
020. Golden Rain Tree / *Koelreuteria paniculata*
021. Saucer Magnolia / *Magnolia soulangeana*
022. Sweetbay magnolia / *Magnolia virginiana*
023. Washington Hawthorn / *Crataegus phaenopyrum*
024. White Fringe tree / *Chionanthus virginicus*

### **EVERGREEN TREES**

025. American Holly / *Ilex opaca*
026. Austrian Pine / *Pinus nigra*
027. Blue Spruce / *Picea pungens*
028. Hemlock / *Tsuga canadensis*
029. Norway Spruce / *Picea abies*
030. Southern Magnolia / *Magnolia grandiflora*
031. White Pine / *Pinus strobus*

## **PERENNIALS**

- 032. Astilbe / Astilbe hybrid
- 033. Black Eyed Susan / Rudbeckia fulgida
- 034. Columbine / Aquilegia x hybrida
- 035. Coral Bells/Heuchera
- 036. Day Lily / Hemerocallis spp.
- 037. Fountain Grass / Pennisetum alopecuroides
- 038. Gaillardia /Blanketflower/ Gaillardia x grandiflora
- 039. Hosta Lily / Hosta spp.
- 040. Iris/ Iris spp.
- 041. Jonquil / Daffodil/Narcissus spp.
- 042. Maiden Grass/Miscanthus spp.
- 043. Mums/Chrysanthemum/ Dendranthema xmorifolium
- 044. Peony / Paeonia hybrid
- 045. Purple Cone Flower / Echinacea purpurea
- 046. Shasta Daisy / Chrysanthemum x superbum
- 047. Tulip / Tulipa spp.

## **EVERGREEN SHRUBS**

- 048. Abelia / Abelia
- 049. Arborvitae / Thuja orientalis
- 050. Blue/China Boy/Girl Holly / Ilex meserveae
- 051. Chinese Juniper / Juniperus chinensis
- 052. Common Boxwood / Buxus sempervirens
- 053. Grey Owl Juniper / Juniperus virginiana 'Grey Owl'
- 054. Inkberry / Ilex glabra
- 055. Leatherleaf Viburnum / Viburnum rhytidophyllum
- 056. Mugo Pine / Pinus mugo
- 057. Oregon Grape Holly / Mahonia aquifolium
- 058. Rhododendron/Azalea / Rhododendron spp.
- 059. Yew / Taxus spp.

## **VINES AND GROUND COVERS**

- 060. Ajuga / Ajuga reptans
- 061. Bigleaf Wintercreeper / Euonymus fortunei 'Vegetus'
- 062. Creeping Juniper / Juniperus horizontalis
- 063. Creeping Lily Turf / Liriope spicata
- 064. English Ivy / Hedera helix
- 065. Honeysuckle / Lonicera spp.
- 066. Periwinkle / Vinca minor

## **TURF**

- 067. Bermuda Grass / *Cynodon dactylon*
- 068. Bluegrass / *Poa pratensis*
- 069. Red Fescue / *Festuca rubra*
- 070. Rye Grass / *Lolium perenne*
- 071. Tall Fescue / *Festuca elatior*
- 072. Zoysia Grass / *Zoysia japonica*

## **FLOWERING SHRUBS**

- 073. Bearberry Cotoneaster / *Cotoneaster dammeri*
- 074. Common Lilac / *Syringa vulgaris*
- 075. Crape Myrtle / *Lagerstroemia indica*
- 076. Doublefile Viburnum / *plicatum* f. *tomentosum*
- 077. Dwarf Korean Lilac / *Syringa meyeri*
- 078. Flowering Quince / *Chanomeles speciosa*
- 079. Forsythia / *Forsythia intermedia*
- 080. Japanese Barberry / *Berberis thunbergii*
- 081. Landscape/Shrub rose / *Rosa* spp.
- 082. Nine Bark/ *Physocarpus opulifolius*
- 083. Oakleaf Hydrangea / *Hydrangea quercifolia*
- 084. Privet / *Ligustrum* spp.
- 085. Pyracantha / *Pyracantha coccinea*
- 086. Redoiser Dogwood / *Cornus sericea*
- 087. Rose of Sharon / *Hibiscus syriacus*
- 088. Japanese Spirea/ *Spirea* spp.
- 089. Snowmound Spirea/*Spirea* spp.
- 090. Virginia Sweetspire / *Itea virginica*
- 091. Winged Euonymus/Burning Bush / *Euonymus alatus*



# PLANT IDENTIFICATION LIST      Contestant Reference 1

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- 001. Bald Cypress
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- 003. Honey Locust
- 004. Japanese Maple
- 005. Little Leaf Linden
- 006. London Planetree
- 007. Northern Red Oak
- 008. Norway Maple
- 009. Pin Oak
- 010. Red Maple
- 011. River Birch
- 012. Sugar Maple
- 013. Sweet Gum
- 014. Tulip Tree
- 015. White Oak

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- 019. Flowering Dogwood
- 020. Golden Rain Tree
- 021. Saucer Magnolia
- 022. Sweetbay magnolia
- 023. Washington Hawthorn
- 024. White Fringe tree

## EVERGREEN TREES

- 025. American Holly
- 026. Austrian Pine
- 027. Blue Spruce
- 028. Hemlock
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- 087. Rose of Sharon
- 088. Japanese Spirea
- 089. Snowmound Spirea
- 090. Virginia Sweetspire
- 091. Winged Euonymus

**PLANT DISORDER DIAGNOSIS Reference Sheet  
Nursery/Landscape**

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
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- 20. \_\_\_\_\_

**Insects**

- 01. Aphid
- 02. Bagworm
- 03. Borer
- 04. Emerald Ash Borer
- 05. Japanese Beetle
- 06. Lady Beetle
- 07. Lacewing
- 08. Leafhopper
- 09. Leaf Miner
- 10. Paper Wasp
- 11. Praying Mantis
- 12. Scale
- 13. Spider
- 14. Spider Mite
- 15. Snail/Slug
- 16. Tent Caterpillar
- 17. Whitefly
- 18. White Grub

**Weeds**

- 30. Annual Bluegrass
- 31. Asian Honeysuckle
- 32. Broadleaf Plantain
- 33. Buckhorn Plantain
- 34. Bull Thistle
- 35. Callery Pear
- 36. Chickweed
- 37. Crabgrass
- 38. Dandelion
- 39. Field Bindweed
- 40. Henbit
- 41. Knotweed
- 42. Nimblewill
- 43. Nutsedge
- 44. Oxalis
- 45. Prickly Lettuce
- 46. Purslane
- 47. White Clover

**Physiological Problems**

**Diseases**

- 19. Anthracnose
- 20. Apple Scab
- 21. Black Spot
- 22. Botrytis
- 23. Cedar-Apple Rust
- 24. Crown Gall
- 25. Fireblight
- 26. Phomopsis Blight of Juniper
- 27. Pine Wilt
- 28. Powdery Mildew
- 29. Rose Rosette Virus

- 48. Herbicide Injury
- 49. Leaf Scorch (drought/winter burn)
- 50. Nutrient Deficiency