

PLANT PATHOLOGY

2026

PURPOSE

The Plant Pathology Career Development Event stimulates learning activities to create interest in career preparation for the plant pathology field.

ELIGIBILITY

The participant must be an active member of a chartered West Virginia FFA Chapter and enrolled in grades 9, 10, 11, or 12. Each chapter may enter one team.

EVENT PROCEDURE

The event will be a team event consisting of four students. Only the top 3 scores will be calculated in the team total. A team may compete with less than 4 members. FFA members will wear official dress or professional dress as it pertains to the profession. For example, Black pants white shirt or button up shirt.

No FFA advisors/coaches will be allowed in the area of the contest, but arrangements will be made to view the specimens following the contest.

PRACTICUMS

The contest will consist of ID of economic plant diseases and their control measures. Participants will have 1 ½ min per ID slide.

EVENT MATERIALS

MATERIALS STUDENTS MUST PROVIDE

- Pencils
- Clipboards
- Electronic Calculator

INDIVIDUAL PRACTICUMS

GENERAL KNOWLEDGE EXAMINATION

Each participant will complete a 30 specimen ID

The score will be determined as follows:

Each correctly identified disease will count 2 points.

Each correctly identified host will count 2 point.

Correct identifying ONE control measures for each disease will count 2 points.

SCORING

Practicum	Activity	Individual	Team
ID of Disease	Written Exam	60	180
ID of Host	Written Exam	60	180
ID of Control Measure	Written Exam	60	180
TOTAL		180	540

TIE BREAKER

In the event of a tie in team scores, the fourth contestant's score will be used to determine placing.

HORTICULTURE

CDE# 105482

Incorrect Marks	Correct Mark
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Team Name

This sheet is for demonstration and practice only. You must use a real scan sheet for actual competition.

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Team Activity					
Team			Ind.		
0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	5	6	6	5	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

[illegible]

Assessment and Solution																								
1	A	B	C	D	6	A	B	C	D	11	A	B	C	D	16	A	B	C	D	21	A	B	C	D
2	A	B	C	D	7	A	B	C	D	12	A	B	C	D	17	A	B	C	D	22	A	B	C	D
3	A	B	C	D	8	A	B	C	D	13	A	B	C	D	18	A	B	C	D	23	A	B	C	D
4	A	B	C	D	9	A	B	C	D	14	A	B	C	D	19	A	B	C	D	24	A	B	C	D
5	A	B	C	D	10	A	B	C	D	15	A	B	C	D	20	A	B	C	D	25	A	B	C	D

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Exam						Exam 2/Team								
1	A	B	C	D	26	A	B	C	D	1	A	B	C	D
2	A	B	C	D	27	A	B	C	D	2	A	B	C	D
3	A	B	C	D	28	A	B	C	D	3	A	B	C	D
4	A	B	C	D	29	A	B	C	D	4	A	B	C	D
5	A	B	C	D	30	A	B	C	D	5	A	B	C	D
6	A	B	C	D	31	A	B	C	D	6	A	B	C	D
7	A	B	C	D	32	A	B	C	D	7	A	B	C	D
8	A	B	C	D	33	A	B	C	D	8	A	B	C	D
9	A	B	C	D	34	A	B	C	D	9	A	B	C	D
10	A	B	C	D	35	A	B	C	D	10	A	B	C	D
11	A	B	C	D	36	A	B	C	D	11	A	B	C	D
12	A	B	C	D	37	A	B	C	D	12	A	B	C	D
13	A	B	C	D	38	A	B	C	D	13	A	B	C	D
14	A	B	C	D	39	A	B	C	D	14	A	B	C	D
15	A	B	C	D	40	A	B	C	D	15	A	B	C	D
16	A	B	C	D	41	A	B	C	D	16	A	B	C	D
17	A	B	C	D	42	A	B	C	D	17	A	B	C	D
18	A	B	C	D	43	A	B	C	D	18	A	B	C	D
19	A	B	C	D	44	A	B	C	D	19	A	B	C	D
20	A	B	C	D	45	A	B	C	D	20	A	B	C	D
21	A	B	C	D	46	A	B	C	D	21	A	B	C	D
22	A	B	C	D	47	A	B	C	D	22	A	B	C	D
23	A	B	C	D	48	A	B	C	D	23	A	B	C	D
24	A	B	C	D	49	A	B	C	D	24	A	B	C	D
25	A	B	C	D	50	A	B	C	D	25	A	B	C	D

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HOST	DISEASE	CONTROL
ALFALFA	Leaf Spot	• Cut foliage in a timely manner
	Downy Mildew	• Cut foliage in a timely manner
BARLEY	Smut	• Treat seed with a systemic fungicide • Treat seed with suitable chemical
	Scald	• Resistant varieties
	Stripe Rust	• Treat seed with suitable chemical
	Powdery Mildew	• Resistant varieties
OATS	Crown Rust	• Resistant varieties
	Smut (Cannot be separated except by microscopic examination)	• Treat seed with suitable chemical
	Stem Rust	• Destroy alternate host • Resistant varieties
WHEAT	Glume Blotch	• Treat seed with suitable chemical
	Leaf Rust	• Resistant varieties
	Stem Rust	• Destroy alternate host • Resistant varieties
	Smut	• Hot water seed treatment • Water soak treatment • Treat seed with a systemic fungicide
	Scab	• Non grain crop rotation-bury stubbles • Treat seed with suitable chemical
	Powdery Mildew	• Resistant varieties
RYE	Ergot	• Disease free seed • Cut wild grass hosts
	Leaf Rust	• Resistant varieties
CLOVER	Rust	• No practical control
	Powdery Mildew	• Resistant varieties
	Sclerotinia Crown Rot	• Close grazing in the autumn and early winter
APPLES	Frogeye Leaf Spot (Black Rot)	• Captan • Nova+Mancozeb • Remove and destroy diseased parts
	Cedar Rust	• Remove alternate host • Rubigan + Captan • Rubigan + Ziram
	Scab	• Captan • Rubigan + Captan • Rubigan + Ziram
	Sooty Blotch	• Facilitate Quick Fruit Drying
	Bitter Rot	• Captan + Pristine • Remove dead branches

Host	Disease	Control
APPLES	Fire Blight	• Remove and destroy diseased parts • Streptomycin • Bordeaux • Fixed Copper
PEACHES	Brown Rot	• Topsin-M +Sulfur • Indar • Captan
	Peach-Leaf Curl	• Ferbam • Wettable Sulfur • Bravo
	Scab “Freckles”	• Bravo • Topsin-M+ Captan
	Yellows	• Pull and destroy diseased tree
	Lear Spot or Shot Hole	• Wettable Sulfur • Fixed Copper
PLUMS	Black Knot	• Remove and destroy diseased parts • Topsin-M + Captan • Resistant varieties
	Brown Rot	• Captan and Topsin-M, mixed
CHERRIES	Leaf Spot or Shot hole	• Captan and Topsin- M, mixed
	Black knot	• Captan and Topsin- M, mixed • Prune out and destroy visible knot

NOTE: Most peaches, plums and cherries are sprayed or dusted with sulfur, except for yellows, peach leaf curl, and black knot. Never use Bordeaux or lime-sulfur on growing peaches

CRUCIFERS (Cabbage, Cauliflower, Brussels Sprouts)	Club Root	• Avoid infested soil or fumigate • Apply lime to soil to pH 6.8
	Blackleg	• Clean seeds • Hot water seed treatment • Rovral
	Soft Rot	• Prevent mechanical and insect injuries to plant

HOST	DISEASE	CONTROL
CUCURBITS (Cucumbers, Melons etc)	Bacterial wilt	• Cover until bloom with a row cover • Ambush • Admire • Pounce • Rotenone for cucumber beetles N.B. Cucumber beetle is the vector of the pathogen, controlling the vector in most cases controls the disease
	Anthrachnose	• Disease free seed • Mancozeb • Bravo • Topsin-M
	Downy Mildew	• Bravo • Mancozeb • Ranman • Tanos
	Powdery Mildew	• Bravo • Nova
BEANS	Anthrachnose	• Bravo • Headline • Mancozeb • Bury infected debris
	Bacterial Blight	• Disease free seed • Crop rotation
	Rust	• Bravo • Folicur • Endura • Resistant varieties
	Common Mosaic	• Certified seed • Control aphid vector • Disease-free seed
CORN	Rust	• No Practical control
	Southern Leaf Blight	• Resistant varieties
	Northern Leaf Blight	• Resistant varieties
	Smut	• Remove and destroy diseased parts • Crop rotation
	Maize Dwarf Mosaic Virus	• Resistant varieties
	Gray leaf Spot (Cercospora)	• Resistant varieties
PEPPER	Bacterial Spot	• Resistant varieties • Copper • Disease free seed

HOST	DISEASE	CONTROL
POTATOES	Late Blight	• Mancozeb • Copper • Acrobat • Bravo • Curzate • Resistant varieties
	Early Blight	• Mancozeb • Copper • Bravo
	Hopper burn	• Insecticide spray of pyrethroid
	Leaf Roll	• Disease free seed
	Mosaics	• Disease free seed
	Rhizoctonia (Black Scurf, Dry Stem Rot)	• No practical control • Cultural practice “plant shallow and hill deep”
	Scab	• Acidify soil • Resistant varieties
	Black leg	• Treat seed with Captan • Polyram • Disease free seed
	Ring Rot	• Disease free seed
STRAWBERRIES	Leaf Spot	• Rally • Nova • Indar • Pristine
	Botrytis Rot	• Renovate • Thin old beds • Luna privilege • Captan • Topsin-M • CaptEbate
GRAPES	Black Rot	• Remove mummies from cane • Ferbam • Captan • Bayleton • Pristine
	Downy Mildew	• Bordeaux • Fixed copper • Ridomil Gold MZ • Abound
	Powdery Mildew	• Nova • Quintec • Endura

HOST	DISEASE	CONTROL
BRAMBLES (Blackberries, Raspberries, Dewberries)	Anthracnose	Lime-sulfur in spring when leaves show 1/2 inch growth: follow with Cabrio at bloom and two weeks after bloom Caution: do not use lime-sulfur after 1/2inch leaf, it will cause severe burning
	Orange Rust	- Remove infected plants, including all roots - Apply Rally
	Cane blight and spot	- Remove infected canes - Apply Quilt Xcel
TOMATOES	Late Blight	- Mancozeb - Copper - Quadris - Bravo - Bravo Weather
	Early Blight	- Mancozeb - Copper - Bravo - Keep foliage dry as much as possible
	Blossom End Rot	- Mulch-Even Water Supply - Keep calcium high
	Septoria Leaf Spot	- Crop rotation 3-years - Mancozeb - Copper - Bravo Weatherstik
	Anthracnose	- Rotation 3-years with non- solanaeeous crop - Disease free seed - Mancozeb - Copper - Bravo - Quadris
	Wilt	Resistant varieties
	Root Knot	- Fumigate soil - Crop rotation

Plant Pathology CDE CODE SHEET 2022

001. Anthracnose	014. Club root	026. Leaf blight	038. Ring rot
002. Bacterial blight	015. Smut	027. Leaf roll	039. Root knot (Nematode)
003. Bacterial spot	016. Crown rust	028. Leaf rust	040. Rust
004. Bacterial wilt	017. Downy mildew	029. Leaf spot	041. Scab
005. Bitter rot on fruit	018. Early blight	030. Leaf spot or shot hole	042. Scab “freckles”
006. Black knot	019. Ergot	031. Maize Dwarf Mosaic Virus	043. Scald
007. Black leg	020. Fire blight on twigs, limbs or fruit	032. Mosaic (including common or virus)	044. Sclerotinia crown rot
008. Black rot	021. Frog-eye leaf spot	033. Northern leaf blight	045. Septoria leaf spot
009. Blossom - end rot	022. Glume blotch	034. Orange rust	046. Soft rot
010. Botrytis rot	023. Gray Leaf Spot (Cercospora)	035. Peach leaf curl	047. Sooty blotch on fruit
011. Brown rot	024. Hop burn	036. Powdery mildew	048. Southern leaf blight
012. Cane blight and	025. Late blight	037. Rhizoctonia	049. Stem rust
013. Cedar/apple rust on leaves or fruit			050. Stripe
			051. Wilt
			052. Yellows

Host

001. Alfalfa	005. Brambles	009. Crucifer	013. Peach	017. Rye
002. Apple	006. Cherry	010. Cucurbits	014. Pepper	018. Strawberry
003. Barley	007. Clover	011. Grapes	015. Plums	019. Tomatoes
004. Bean	008. Corn	012. Oats	016. Potato	020. Wheat

Control

101 Abound	126 Crop rotation 3-years	146 Luna privilege	166 Remove infected canes
102 Acidify soil	127 Cultural practice “plant shallow and hill deep”	147 Mancozeb	167 Remove infected plants, including all roots
103 Acrobat	128 Curzate	148 Mulch-Even Water Supply	168 Remove mummies from cane
104 Admire	129 Cut foliage in a timely manner	149 No practical control	169 Renovate
105 Ambush	130 Cut wild grass hosts	150 Non grain crop rotation-bury stubbles	170 Resistant varieties
106 Apply lime (pH 6.8)	131 Destroy alternate host	151 Nova	171 Ridomil Gold MZ
107 Apply Quilt Xcel	132 Disease free seed	152 Nova+Mancozeb	172 Rotation 3-years with non-solanaceous crop
108 Apply Rally	133 Endura	153 Polyram	173 Rotenone - cucumber beetles
109 Avoid infested soil or fumigate	134 Facilitate quick fruit drying	154 Pounce	174 Rovral
110 Bayleton	135 Ferbam	155 Prevent mechanical and insect injuries to plant	175 Rubigan + Captan
111 Bordeaux	136 Fixed Copper	156 Pristine	176 Rubigan + Ziram
112 Bravo	137 Folicur	157 Prune out and destroy visible knot	177 Streptomycin
113 Bravo Weather stik	138 Fumigate soil	158 Pull and destroy diseased tree	178 Tanos
114 Bury infected debris	139 Headline	159 Quadris	179 Thin old beds
115 Captan	140 Hot water seed treatment	160 Quintec	180 Topsim-M + Captan
116 Captan + Pristine	141 Indar	161 Rally	181 Topsin-M
117 Captan & Topsin- M, mixed	142 Insecticide spray of pyrethroid	162 Ranman	182 Topsin-M +Sulfur
118 CaptEvate	143 Keep calcium high	163 Remove alternate host	183 Treat seed with a systemic fungicide
119 Certified seed	144 Keep foliage dry as much as possible	164 Remove and destroy diseased parts	184 Treat seed with Captan
120 Clean seeds	145 Lime-sulfur in spring when leaves show 1/2 inch growth: follow with Cabrio at bloom and two weeks after bloom	165 Remove dead branches	185 Treat seed with suitable chemical
121 Close grazing in the autumn and early winter			186 Water soak treatment
122 Control aphid vector			187 Wettable Sulfur
123 Copper			
124 Cover until bloom with a row cover			
125 Crop rotation			

