PLANT PATHOLOGY

PURPOSE
The Plant Pathology Career Development Event stimulates learning activities

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. The lowest score will be dropped. FFA members will wear official dress or professional dress as it pertains to the profession. For example, Black plants 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

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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: ●

Team Number

State

Last Name

First Name

Code

Placing Classes

Place	Class (1 2 3 4 5 6 7 8 9)	Place	
1	1234		1234	1
2	1243		1243	2
3	1324		1324	3
4	1342		1342	4
5	1423		1423	5
6	1432		1432	6
7	2134		2134	7
8	2143		2143	8
9	2314		2314	9
10	2341		2341	10
11	2413		2413	11
12	2431		2431	12
13	3124		3124	13
14	3142		3142	14
15	3214		3214	15
16	3241		3241	16
17	3412		3412	17
18	3421		3421	18
19	4123		4123	19
20	4132		4132	20
21	4213		4213	21
22	4231		4231	22
23	4312		4312	23
24	4321		4321	24

Team Activity
Team | Ind.

Practicums (Judges)
1 | 2 | 3 | 4 | 5 | 6

Assessment and Solution

	A B C D		A B C D		A B C D		A B C D		A B C D
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

Exam

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

Exam 2/Team

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

Identification A — Number of Specimen (answer bubble grid, columns 1–50)

Identification B — Number of Specimen (answer bubble grid, columns 1–50)

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
	Sclerotina 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 • Topsim-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

HOST	DISEASE	CONTROL
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
	Anthracnose	• Disease free seed • Mancozeb • Bravo • Topsin-M
	Downy Mildew	• Bravo • Mancozeb • Ranman • Tanos
	Powdery Mildew	• Bravo • Nova
BEANS	Anthracnose	• 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 • CaptEvate
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 Weathe rstik
	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
002. Bacterial blight
003. Bacterial spot
004. Bacterial wilt
005. Bitter rot on fruit
006. Black knot
007. Black leg

008. Black rot
009. Blossom - end rot
010. Botrytis rot
011. Brown rot
012. Cane blight and spot

013. Cedar/apple rust on leaves or fruit
014. Club root
015. Smut
016. Crown rust
017. Downy mildew
018. Early blight
019. Ergot

020. Fire blight on twigs, limbs or fruit
021. Frog-eye leaf spot
022. Glume blotch
023. Gray Leaf Spot (Cercospora)
024. Hopper burn

025. Late blight
026. Leaf blight
027. Leaf roll
028. Leaf rust
029. Leaf spot
030. Leaf spot or shot hole

031. Maize Dwarf Mosaic Virus
032. Mosaic (including common or virus)
033. Northern leaf blight
034. Orange rust
035. Peach leaf curl
036. Powdery mildew
037. Rhizoctonia

038. Ring rot
039. Root knot (Nematode)
040. Rust
041. Scab
042. Scab "freckles"
043. Scald
044. Sclerotinia crown rot
045. Septoria leaf spot

046. Soft rot
047. Sooty blotch on fruit
048. Southern leaf blight
049. Stem rust
050. Stripe
051. Wilt
052. Yellows

Host

001. Alfalfa
002. Apple
003. Barley
004. Bean

005. Brambles
006. Cherry
007. Clover
008. Corn

009. Crucifer
010. Cucurbits
011. Grapes
012. Oats

013. Peach
014. Pepper
015. Plums
016. Potato

017. Rye
018. Strawberry
019. Tomatoes
020. Wheat

Controls

101. Abound
102. Acidify soil
103. Acrobat
104. Admire
105. Ambush
106. Apply lime (pH 6.8)
107. Apply Quilt Xcel
108. Apply Rally
109. Avoid infested soil or fumigate
110. Bayleton
111. Bordeaux
112. Bravo
113. Bravo Weather stik
114. Bury infected debris
115. Captan
116. Captan + Pristine
117. Captan & Topsin- M, mixed
118. CaptEvate
119. Certified seed
120. Clean seeds
121. Close grazing in the autumn and early winter
122. Control aphid vector
123. Copper
124. Cover until bloom with a row cover

125. Crop rotation
126. Crop rotation 3-years
127. Cultural practice "plant shallow and hill deep"
128. Curzate
129. Cut foliage in a timely manner
130. Cut wild grass hosts
131. Destroy alternate host
132. Disease free seed
133. Endura
134. Facilitate quick fruit drying
135. Ferbam
136. Fixed Copper
137. Folicur
138. Fumigate soil
139. Headline
140. Hot water seed treatment
141. Indar
142. Insecticide spray of pyrethroid
143. Keep calcium high
144. Keep foliage dry as much as possible
145. Lime-sulfur in spring when leaves show 1/2 inch growth: follow with

Cabrio at bloom and two weeks after bloom
146. Luna privilege
147. Mancozeb
148. Mulch-Even Water Supply
149. No practical control
150. Non grain crop rotation-bury stubbles
151. Nova
152. Nova+Mancozeb
153. Polyram
154. Pounce
155. Prevent mechanical and insect injuries to plant
156. Pristine
157. Prune out and destroy visible knot
158. Pull and destroy diseased tree
159. Quadris
160. Quintec
161. Rally
162. Ranman
163. Remove alternate host
164. Remove and destroy diseased parts
165. Remove dead branches

166. Remove infected canes
167. Remove infected plants, including all roots
168. Remove mummies from cane
169. Renovate
170. Resistant varieties
171. Ridomil Gold MZ
172. Rotation 3-years with non-solanaeeous crop
173. Rotenone - cucumber beetles
174. Rovral
175. Rubigan + Captan
176. Rubigan + Ziram
177. Streptomycin
178. Tanos
179. Thin old beds
180. Topsim-M + Captan
181. Topsin-M
182. Topsin-M +Sulfur
183. Treat seed with a systemic fungicide
184. Treat seed with Captan
185. Treat seed with suitable chemical
186. Water soak treatment
187. Wettable Sulfur