VEGETATIVE WEED ID

1. This weed is _____

VEGETATIVE WEED ID

1. This weed is _____

CROP GROWTH AND DEVELOPMENT

2. The wheat plants shown here are currently at which of the following growth stages:

A) jointing
B) flag leaf emergence
C) boot stage
D) heading
E) flowering (anthesis)
F) physiological maturity

CROP GROWTH AND DEVELOPMENT

2. The wheat plants shown here are currently at which of the following growth stages:

A) jointing
B) flag leaf emergence
C) boot stage
D) heading
E) flowering (anthesis)
F) physiological maturity

NUTRIENT DEFICIENCY

3. The purple coloration on the leaves of this corn plant are typical of a deficiency of:

A) Nitrogen
B) Phosphorus
C) Potassium
D) Iron
E) Sulfur

CROP GROWTH AND DEVELOPMENT

4. Shown above are three warm season Kansas crops just emerging. Assume we have a freeze tonight that kills most of the tissue down to just above the soil surface, but not below ground. Based on their seedling emergence pattern and early growth habit, which of the crop shown would have the **best chance** of regrowing and producing a normal crop?

A) Cotton
B) Corn
C) Soybean
D) All of them should recover equally well
E) None of them will be able to recover

A.

B.

C.

CROP GROWTH AND DEVELOPMENT

4. Shown above are three warm season Kansas crops just emerging. Assume we have a freeze tonight that kills most of the tissue down to just above the soil surface, but not below ground. Based on their seedling emergence pattern and early growth habit, which of the crop shown would have the **best chance** of regrowing and producing a normal crop?

PLANT STRUCTURE – DICOT LEAVES

5. The proper description of the leaf type an arrangement for this plant is:
   - A) Simple leaf, alternate arrangement
   - B) Simple leaf, opposite arrangement
   - C) Palmately compound leaf, alternate arrangement
   - D) Palmately compound leaf, opposite arrangement
   - E) Pinnately compound leaf, alternate arrangement
   - F) Pinnately compound leaf, opposite arrangement

PLANT STRUCTURE – DICOT LEAVES

5. The proper description of the leaf type an arrangement for this plant is:
   - A) Simple leaf, alternate arrangement
   - B) Simple leaf, opposite arrangement
   - C) Palmately compound leaf, alternate arrangement
   - D) Palmately compound leaf, opposite arrangement
   - E) Pinnately compound leaf, alternate arrangement
   - F) Pinnately compound leaf, opposite arrangement

CROP PRODUCTS and CROP QUALITY

6. Which of the above hay samples would likely have the highest percent protein?

ANSWER: A, B, C, or D

CROP PRODUCTS and CROP QUALITY

6. Which of the above hay samples would likely have the highest percent protein?

ANSWER: A, B, C, or D

7. This soybean disease is:

A) pod and stem rot
B) bacterial blight
C) bean pod mottle virus
D) rust
E) Phytophthora root rot
F) gray leaf spot

CROP DISEASE

7. This soybean disease is:

A) pod and stem rot
B) bacterial blight
C) bean pod mottle virus
D) rust
E) Phytophthora root rot
F) gray leaf spot

FERTILIZER

8. Which is of the above fertilizers would be a source of phosphorus?

ANSWER: A, B, C, or D

FERTILIZER

8. Which is of the above fertilizers would be a source of phosphorus?

ANSWER: A, B, C, or D

PESTICIDE APPLICATION

9. Shown above are four flat fan sprayer nozzle tips. At standard 40 psi pressure, which of them would have the **lowest** nozzle delivery rate?

ANSWER: Write the **color** or number from the correct nozzle tip.

You may use the hand lens to help read the numbers.

PESTICIDE APPLICATION

9. Shown above are four flat fan sprayer nozzle tips. At standard 40 psi pressure, which of them would have the **lowest** nozzle delivery rate?

ANSWER: Write the **color** or number from the correct nozzle tip.

EQUIPMENT

. This piece of equipment is a (an) _____

EQUIPMENT

10. This piece of equipment is a (an) _____

VEGETATIVE WEED ID

11. This weed is _____

The correct legal description of the area label
R3W and the appropriate number of acres in

A) SW ¼ of NW ¼ = 40 acres

B) N ½ of W ½ = 40 acres

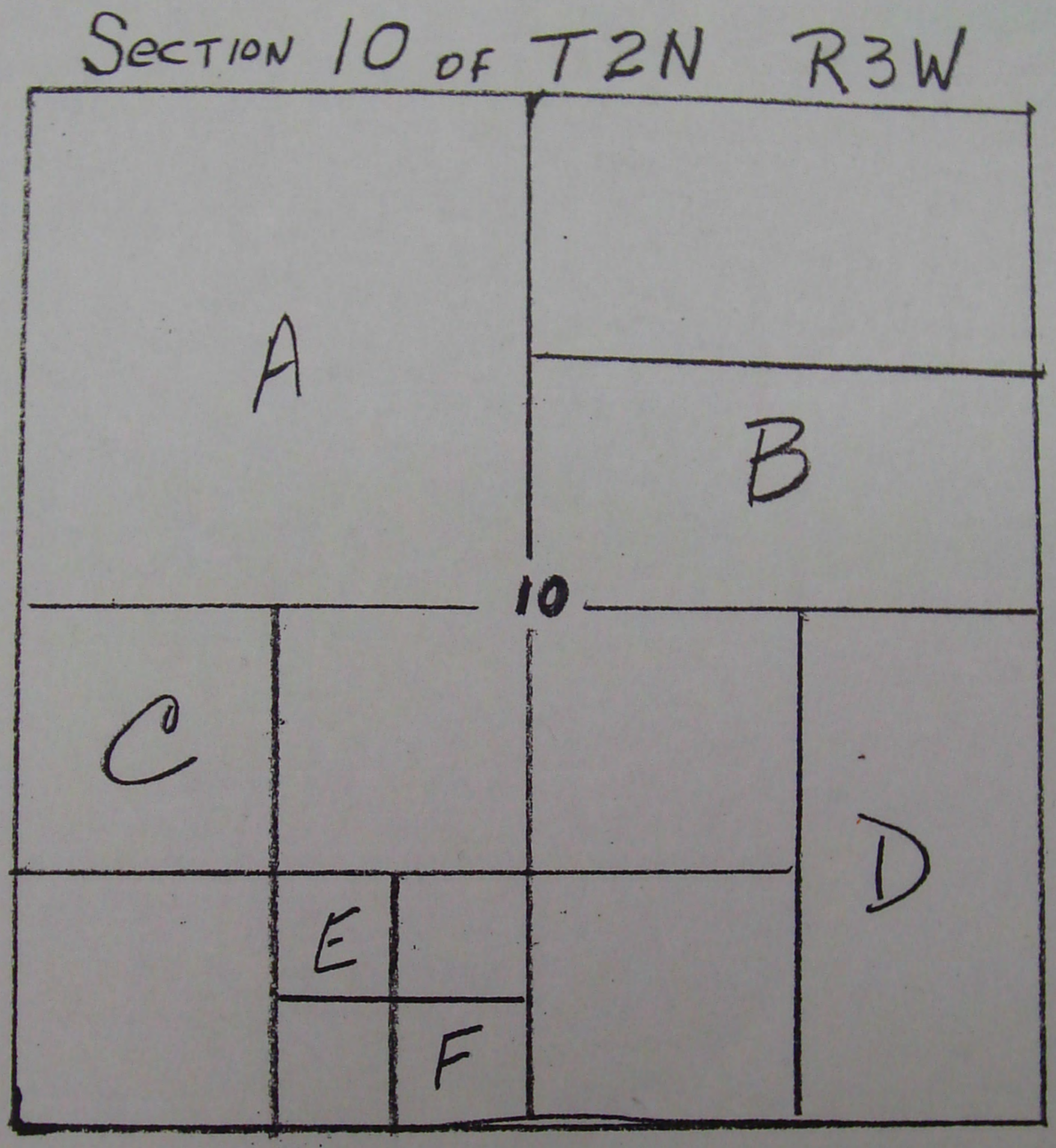
C) W ½ of SW ¼ = 80 acres

D) NW ¼ of SW ¼ = 80 acres

E) SW ¼ of SE ¼ = 40 acres

F) NW ¼ of SW ¼ = 40 acres

RECTANGULAR SOIL SURVEY



The correct legal description of the area labeled "C" in section 10 of T2N R3W <u>and</u> the appropriate number of acres in this area is:

A) SW ¼ of NW ¼ = 40 acres
B) N ½ of W ½ = 40 acres

CROP GROWTH AND DEVELOPM

13. The growth stage of this corn plant is:

A) V 2
B) V 3
C) V 4
D) V 5
E) VT
F) R 1

14. This wheat disease is

A) loose smut of wheat
B) barley yellow dwarf virus
C) wheat streak mosaic virus
C) wheat scab
D) stem rust of wheat
E) leaf rust of wheat

CROP DISEASE

14. This wheat disease is

A) loose smut of wheat
B) barley yellow dwarf virus
C) wheat streak mosaic virus
C) wheat scab
D) stem rust of wheat
E) leaf rust of wheat

VEGETATIVE WEED ID

15. This weed is _____

VEGETATIVE WEED ID

15. This weed is _____

seeds or plants per foot of row. For soybeans planted on

Table 4. Suggested statewide soybean planting rates.

Row width inches	Seeds/linear foot	Plants/linear foot[7]
30	10.0	8.0
20	6.6	5.3
10	3.3	2.7

[7]Assuming 90 percent germination and 80 percent emergence.

USE THE KANSAS CROP PLANTING GUIDE

16. The recommended plant population for dryland grain sorghum in the 26-32 inch rainfall zone of Kansas is _____ plants per acre.

Kansas Crop Planting Guide

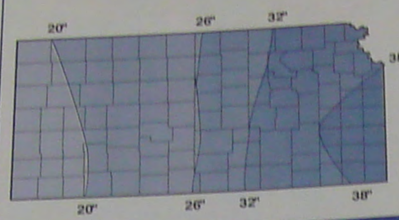
K-STATE
Kansas State University

Kansas is agronomically rich, with diverse soils and growing conditions. The average number of freeze-free days ranges from 150 in the northwest to 200 in southeastern Kansas. The average date of the last 32°F freeze in the spring is May 5 in the northwest and April 10 in the southeast. The average date of the first 32°F fall freeze is October 5 for the northwest and October 25 for the southeast.

Our rich soils and climatic conditions make Kansas the number one state in wheat and grain sorghum production. These conditions not only dictate the type of crop that will grow, but also cause wide differences in the optimum planting dates and seeding rates across the state. It is important that producers recognize optimum planting dates and rates for various crops, but just as important, producers need to recognize and understand the differences between growing conditions on their farms and those of their neighbors.

Tables in this publication show ranges of optimum plant rates and dates for various crops within a given zone.

cultural Experiment Station and Cooperative Extension Service



Grain Sorghum Plant and Seed Spacings

The recommended plant population and seed spacing for grain sorghum is dependent on rainfall (**Table 3**). A dryland grain sorghum producer who farms in the 20- to 26-inch rainfall zone uses a lower plant population than producers in higher rainfall zones or producers using irrigation. Thus the plants per square foot or plants within a foot of row will be fewer and the spacing between seeds will be greater in the lower rainfall areas.

Table 3. Plant and seed spacings of grain sorghum.

Recommended population and spacing	Average annual rainfall: Less than 20"	20–26"	26–32"	More than 32"	Irrigated
Plant population plants/acre[1]	24,000	35,000	45,000	70,000	100,000
Plant population plants/ft²	0.6	0.8	1.0	1.6	2.3
Within row seed spacing at planting[2]	Inches between seeds				
10-inch rows	16.5	12	9.0	6	4.5
20-inch rows	8.5	6	4.5	3	2
30-inch rows	5.5	4	3.0	2	1.5

[1]Plant populations may be increased or decreased by at least 25 percent from the values given depending upon the expected growing conditions without significantly affecting yields.
[2]Assuming 65 percent field emergence. Calibration of plants should be based on seed spacing. Seeding rates based on lbs./A have little meaning since seed size commonly varies from 13,000 to 24,000 seeds/pound.

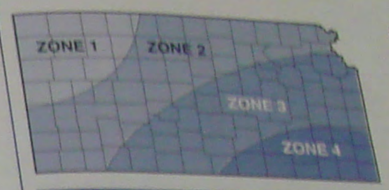
Soybean Planting Rates

The suggested soybean planting rates and final stands for different row spacings are provided in **Table 4**. If a producer wants to keep the population the same while decreasing row spacing, it is necessary to reduce the number of seeds or plants per foot of row. For soybeans planted on droughty soils in central and eastern Kansas or on dryland conditions in western Kansas, the plant population may be reduced by 25 percent. Also, the population may be adjusted upward slightly for late plantings to encourage rapid closing of the rows.

Table 4. Suggested statewide soybean planting rates.

Row width inches	Seeds/linear foot	Plants/linear foot[1]
30	10.0	8.0
20	6.6	5.3
10	3.3	2.7

[1]Assuming 90 percent germination and 80 percent emergence.



Corn Planting Dates, Populations and Seed Spacings

The suggested planting dates for corn range from late March to May 1 in southeastern Kansas (Zone 4), to April 25 to May 20 in Zone 1 (**Table 5**). As with the other crops, the suggested final corn populations are lower in western areas and increase as one moves eastward (**Table 6**). Corn planted under limited irrigation systems will have lower plant populations than corn under full irrigation systems. The seed spacings for a range of harvest populations are provided in **Table 7**.

Table 5. Suggested corn planting dates.

Zone 1: April 20–May 20
Zone 2: April 15–May 20
Zone 3: April 1–May 10
Zone 4: March 25–April 25

Table 6. Suggested final corn populations.

	Plants per acre
Northwest (dryland)	13,000 to 18,000
Northeast	18,000 to 24,000
East central and Southeast (normal planting dates)	16,000 to 30,000
Central	16,000 to 32,000
Early planting with early hybrids	
dryland	18,000 to 24,000
irrigated	28,000 to 36,000
Irrigated	24,000 to 36,000
Limited irrigation	18,000 to 28,000

Table 7. Seed spacings required for harvest populations of 10,000 to 36,000 plants per acre.

Harvested population	Seeds/acre[1] planted	Row width: 30"	36"	40"	Row width
		seed spacing, inches			seeds/10 ft.
10,000	11,800	17.75	14.75		7
12,000	14,100	14.75	12.25		8
14,000	16,500	12.50	10.50		10
16,000	18,800	11.00	9.25		11
18,000	21,200	9.75	8.25		13
20,000	23,500	9.00	7.50		13
22,000	25,900	8.00	6.75		15
24,000	28,200	7.50	6.25		16
26,000	30,600	6.75	5.75		18
28,000	32,900	6.25	5.50		19
30,000	35,300	6.00	5.00		20
32,000	37,600	5.60	4.60		21
34,000	40,000	5.25	4.35		23
36,000	42,400	5.00	4.10		24

[1]Assuming high germination and that 85 percent of seeds produce plants.

USE THE KANSAS CROP PLANTING GUIDE

16. The recommended plant population for dryland grain sorghum in the 26-32 inch rainfall zone of Kansas is _____ plants per acre.

CROP STRUCTURE - SEEDLINGS

17. The structure marked by the white pin is called the:

A) Mesocotyl
B) Cotyledon
C) Hypocotyl
D) Coleoptile
E) Radicle

CROP STRUCTURE - SEEDLINGS

17. The structure marked by the white pin is called the:

A) Mesocotyl
B) Cotyledon
C) Hypocotyl
D) Coleoptile
E) Radicle

TRANSORB II TECHNOLOGY

Roundup WEATHER MAX®

HERBICIDE

CROPSHIELD™ FORMULA

Specially formulated for Roundup Ready® crops

Herbicide for Roundup Ready Crops

Selective broad-spectrum weed control in Roundup Ready crops. Non-selective, broad-spectrum weed control for many agricultural systems and farmsteads.

Carefully follow detailed instructions in label booklet.

This container is not to be sold to homeowners for residential use.

ABLE PLANTS AND TREES, BECAUSE SEVERE INJUR
DESTRUCTION MAY RESULT.

Keep out of reach of children

CAUTION! Read precautions on side panel.

Read the entire label before using this product. Use only according t label instructions. Read the "LIMIT OF WARRANTY AND LIABILITY" statement before buying or using. If terms are not acceptable, return at once unopened.

ACTIVE INGREDIENT:	
*Glyphosate, N-(phosphonomethyl)glycine, in the form of its potassium salt	48.8%
OTHER INGREDIENTS:	51.2%
	100.0%

*Contains 660 grams per liter or 5.5 pounds per U.S. gallon of the active ingredient glyphosate, in the form of its potassium salt. Equivalent to 540 grams per liter or 4.5 pounds per U.S. gallon of the acid, glyphosate.

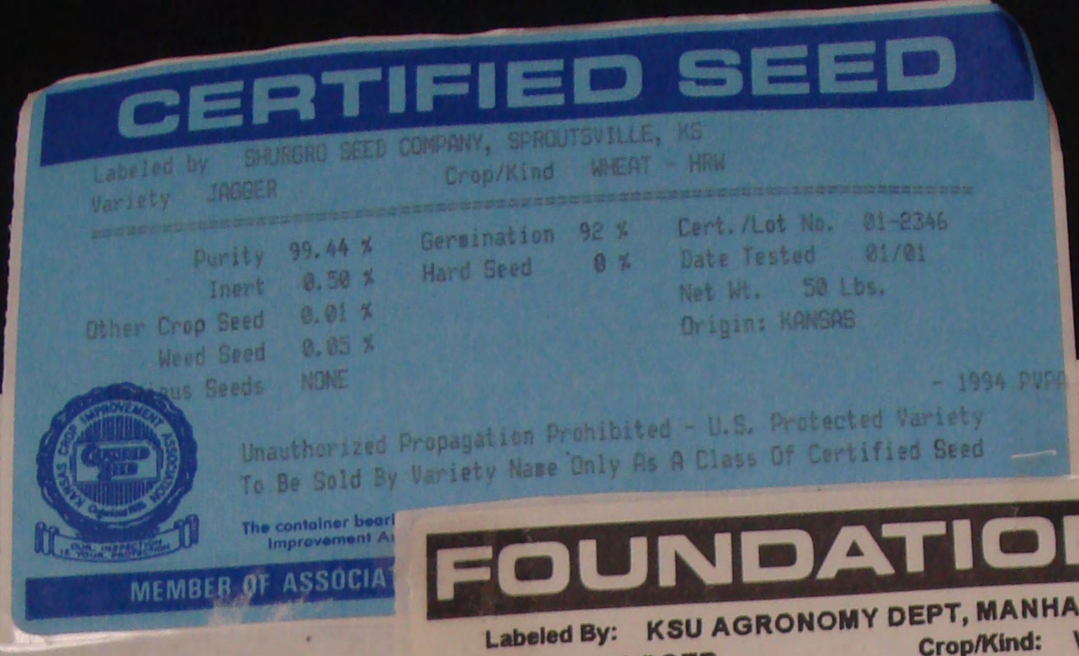
This product is protected by U.S. Patent No's. 5,668,085, RE 37,866 and 6,365,551. Other patents pending. No license granted under any non-U.S. patent(s).

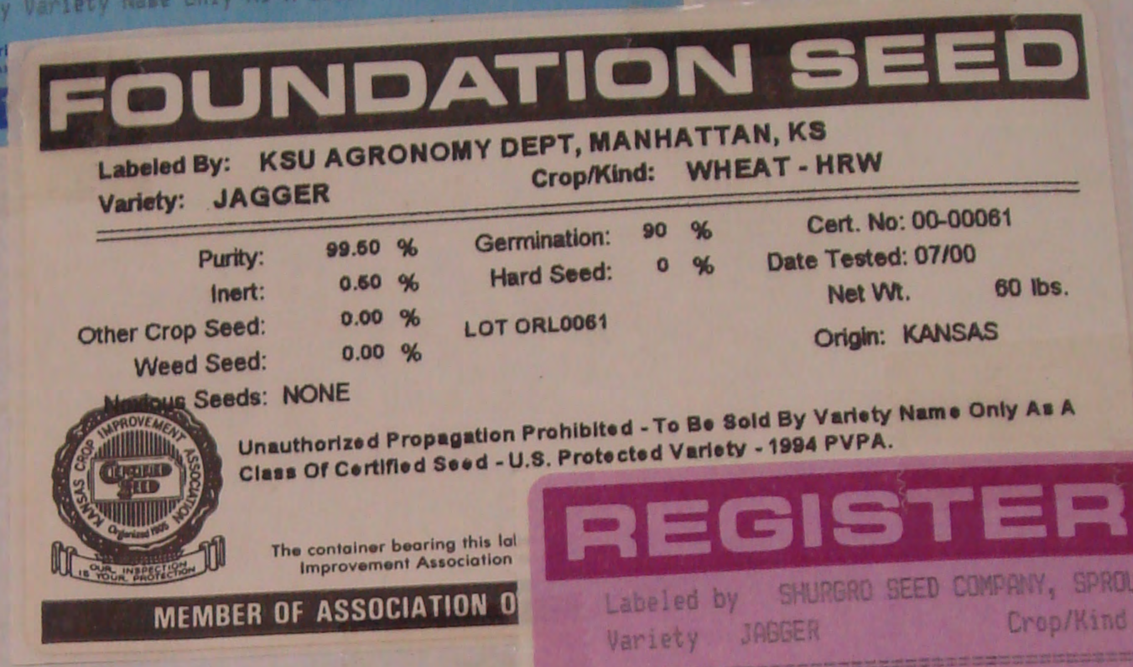
THIS IS AN END-USE PRODUCT. MONSANTO DOES NOT INTEND AND HAS NOT REGISTERED IT FOR REFORMULATION OR REPACKAGING.

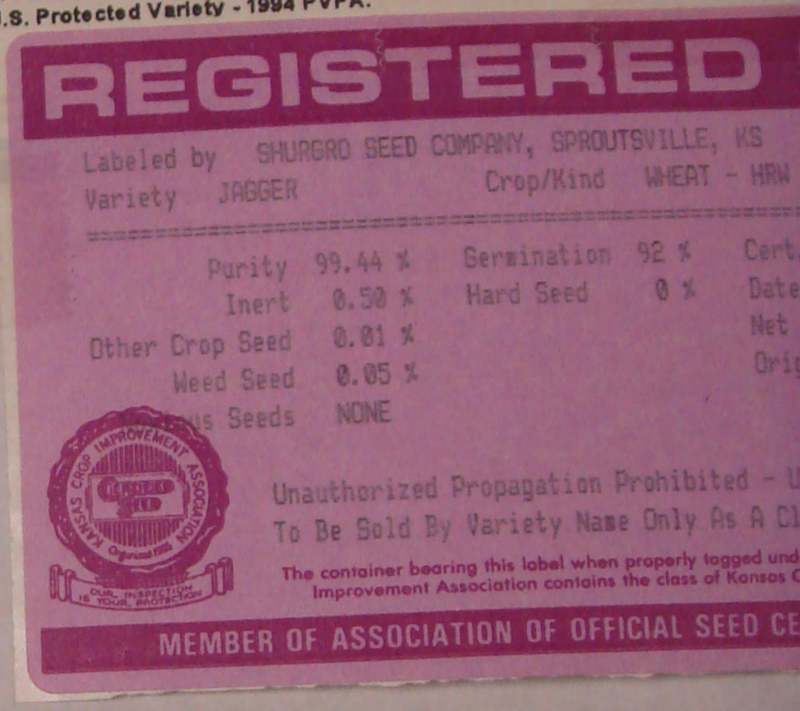
NET 2.5 GAL

HERBICIDE LABEL

18. The signal word on this herbicide label is: _____







SEED BAG LABELS

19. Shown are three standard tags that may be found on pedigreed seed regulated by state crop improvement associations. The correct order of generation of production for these three seed classes is:

A. Certified → Registered → Foundation
B. Foundation → Certified → Registered
C. Registered → Certified → Foundation
D. Certified → Foundation → Registered
E. Foundation → Registered → Certified
F. Registered → Foundation → Certified

19. Shown are three standard tags that may be found
regulated by state crop improvement associations
of generation of production for these three seed c

A. Certified → Registered → Foundation
B. Foundation → Certified → Registered
C. Registered → Certified → Foundation
D. Certified → Foundation → Registered
E. Foundation → Registered → Certified
F. Registered → Foundation → Certified

20. This insect is

A) corn earworm
B) green cloverworm
C) corn rootworm
D) fall armyworm
E) black cutworm
F) European corn borer

CROP INSECT

20. This insect is

A) corn earworm
B) green cloverworm
C) corn rootworm
D) fall armyworm
E) black cutworm
F) European corn borer

VEGETATIVE WEED ID

21. This weed is _____

22. This piece of equipment is a(n)_____

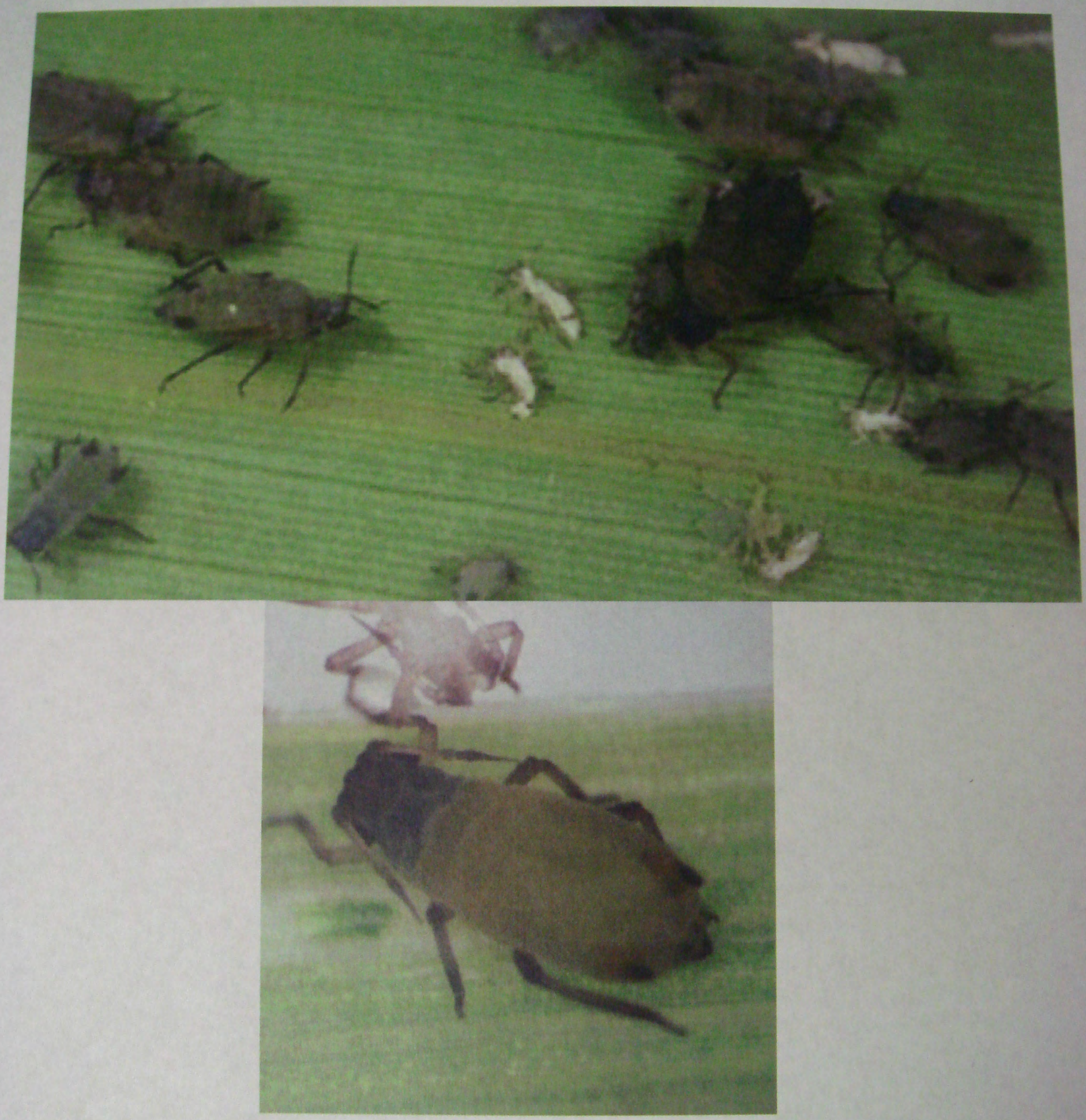
EQUIPMENT

22. This piece of equipment is a(n)_____.

23. This insect is:

A) alfalfa weevil
B) lady beetle
C) blister beetle
D) chinch bug
E) aphid
F) lacewing

CROP INSECT



23. This insect is:

A) alfalfa weevil
B) lady beetle
C) blister beetle
D) chinch bug
E) aphid
F) lacewing

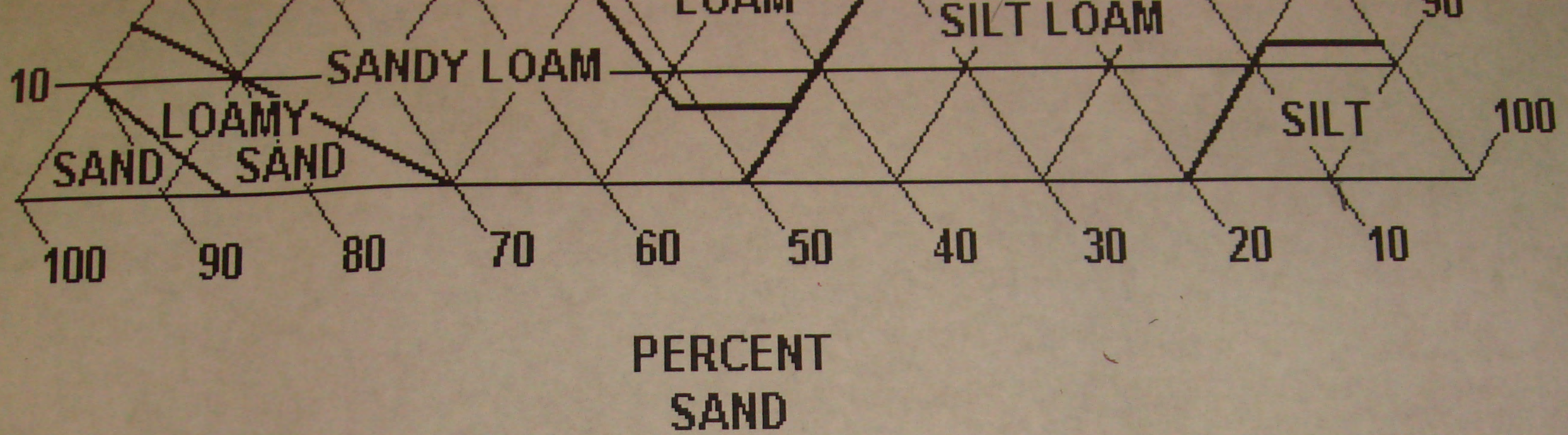
CROP PRODUCTS and CROP QUALITY

24. Which of the above wheat samples would typically be used to make the food product displayed?

ANSWER: A, B, C, or D

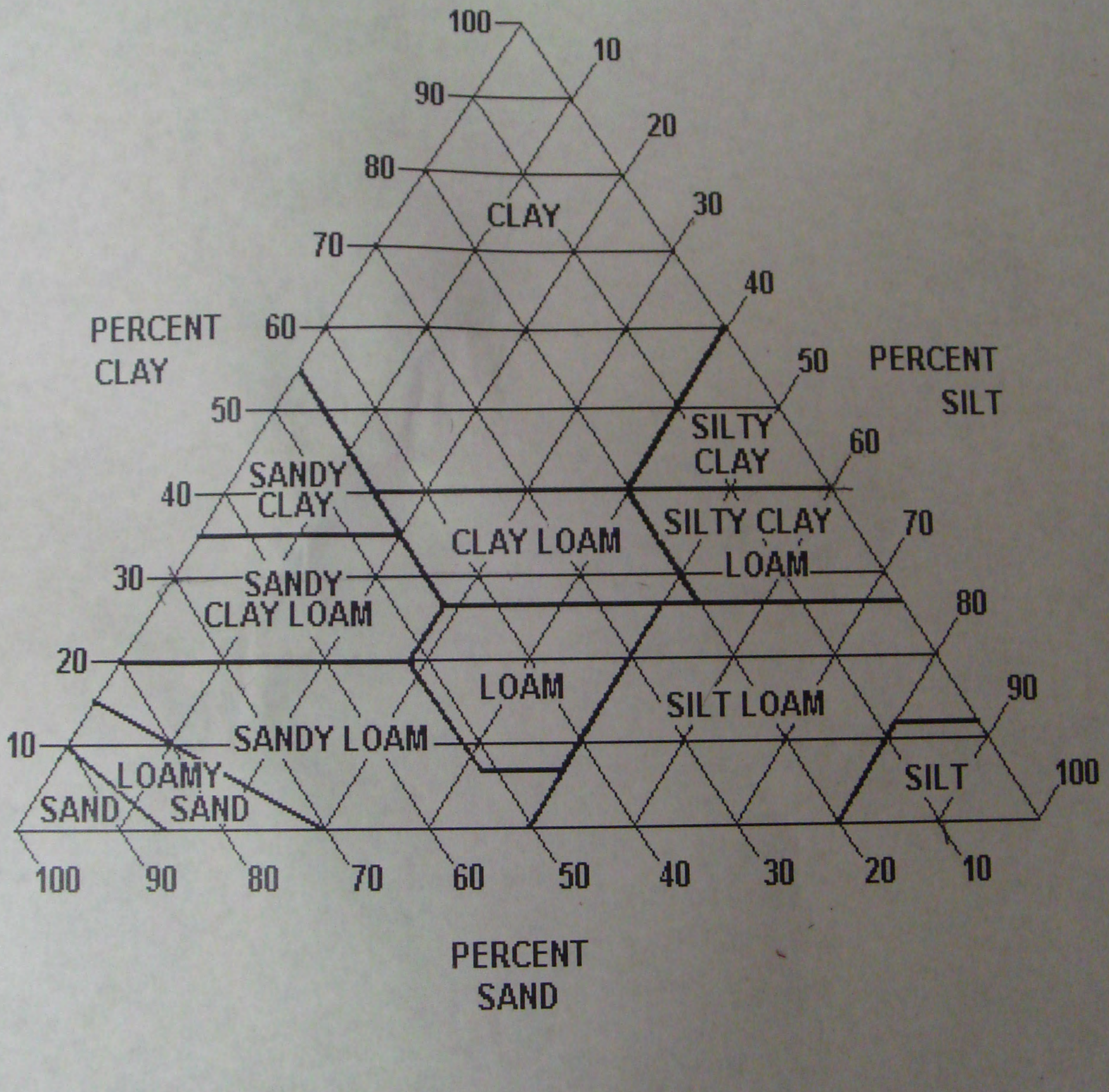

1
2
B
A


Martha Gooch
Elbow Macaroni
ENRICHED PASTA
NET WT. 10 OZ
283 GRAMS
MADE WITH
100%
SEMOLINA



25. The correct soil textural class for a soil with 30 % clay, 60 % silt, and 10 % sand is a _____.

SOIL TEXTURE



25. The correct soil textural class for a soil with 30 % clay, 60 % silt, and 10 % sand is a _____.

26. This corn disease is:

A) gray leaf spot
B) Northern corn leaf blight
C) Gibberella stalk rot
D) ear rot
E) corn smut
F) blue eye mold

CROP DISEASE

26. This corn disease is:

A) gray leaf spot
B) Northern corn leaf blight
C) Gibberella stalk rot
D) ear rot
E) corn smut
F) blue eye mold

CROP PRODUCTS

27. What crop is the above feed ingredient made from?

A) Corn
B) Wheat
C) Alfalfa
D) Soybean
E) Cotton

CROP PRODUCTS

27. What <u>crop</u> is the above feed ingredient made from?

A) Corn
B) Wheat
C) Alfalfa
D) Soybean
E) Cotton

28. This insect is:

A) blister beetle
B) bean leaf beetle
C) green cloverworm
D) chinch bug
E) alfalfa weevil
F) stinkbug

CROP INSECT

28. This insect is:

A) blister beetle
B) bean leaf beetle
C) green cloverworm
D) chinch bug
E) alfalfa weevil
F) stinkbug

D.

SOIL AMENDMENTS

29. Which of the above materials is ag lime used to raise the pH of acidic soils?

ANSWER: A, B, C, or D

SOIL AMENDMENTS

29. Which of the above materials is ag lime used to raise the pH of acidic soils?

ANSWER: A, B, C, or D

PLANT STRUCTURE – DICOT FLOWERS

30. How many **SEPALS** does each flower have? _____

(You may touch the flowers to count the sepals)