New Mexico Agronomy CDE Test Bank *updated 2015*

*\*\*Note: Questions numbered 100 and above were added in 2015.\*\**

**Agronomy Production Practices**

**Fertilizers and Fertilizer Application**

**1.** A local farmer wants to apply a total of 190 pounds of nitrogen per acre on his rice field. He has spread 8 tons per acre of dry manure with an average analysis of 10 pounds of nitrogen per ton. How many additional pounds of nitrogen must he apply?

A. 100

B. 110

C. 283

D. None, He has applied enough already.

**2.** A fertilizer is being advertised as an all purpose 20-20-20. What does the 20-20-20 indicate?

 A. 20% nitrogen, 20% phosphorus 20% potassium

B. 20% potassium chloride

C. 20% urea, 20% P2O5, 20% K2O

D. both a and c

**3.** Mary Hill owns a wheat farm in Kansas. The soil tests show she needs to apply 45 lbs. of nitrogen per acre to meet her crop goals. She has decided to apply anhydrous ammonia which contains approximately 82% nitrogen to her half section (320 acres) which will be in crop. If anhydrous ammonia costs $0.62 per pound, what will be her total cost for fertilizer? (round to two decimal points)

A. $10,535

B. $27.90

C. $32.92

D. $8,928

**4.** Jim, a wheat farmer in Texas, is planting a field of wheat which measures 1419’ by 1320’. He is using a no-till drill and applying his fertilizer at the same time he seeds. He is applying 12 gallons per acre of 28% liquid nitrogen, (2.99 pounds of N per gallon) at a cost of $1.15/gallon and 20 pounds per acre of a starter fertilizer, 11-52-0, at a cost of $680/ton. He is seeding at a rate of 65 pounds of seed per acre and figures he will need an additional 10% seed for corners.

What is the per acre cost of the fertilizer he is applying?

A. $6.80

B. $20.60

C. $13.80

D. $12.99

**5.** Your soil test recommends 150 pounds of nitrogen per acre applied to your 25 acre field. How much 35-0-0 do you need to apply to meet the recommendation for this field?

 A. 429lbs./acre

B. 150 lbs./acre

C. 444 lbs./acre

D. 245 lbs/acre

**6.** A fertilizer that is a high pressure liquid and 82.2% nitrogen is:

A. urea

B. 82% nitrogen solution

C. aqua ammonia

 D. anhydrous ammonia

**7.** Steve Miller owns a vegetable farm in California. The soil tests show he needs to apply 120 lbs. of nitrogen per acre to meet his yield goal for sweet corn. He has decided to apply urea which contains approximately 46% nitrogen to his half section (320 acres) which will be in crop. If urea costs $.39 per pound, what will be his total cost for fertilizer? (round to two decimal points)

A. $32,556.52

B. $14,976.00

C. $6,888.96

D. $12,208.69

**100.** Your agronomist suggests applying a 35-0-0-10 fertilizer to your land. The 10 represents 10 %:

A. sulfur

B. lime

C. boron

D. zinc

**101.** Your soil test recommends 85 pounds of nitrogen per acre applied to your 75 acre canola oilseed crop. How much 36-0-0 do you need to apply per acre to meet the recommendation?

A. 236 lbs.

B. 200 lbs

C. 20,708 lbs.

D. 36 lbs

**Planting , Seeding, and Acreage**

**8.** You are planting a field of pinto beans 1000’ X 697’. The seed you purchase is 98% pure and has a germination rate of 94%. You want to plant 60 pounds of viable seed per acre. How many actual *bags* of seed should you buy? The seed comes in 50 pound bags.

A. 21

B. 20

1

C. 19

D. 18

**9.** How many sectionsof land are in a township?

A. 6

B. 16

C. 36

D. 72

**10.** You have a half section of dryland wheat in Western Kansas. You have your wheat custom harvested at a cost of $15 per acre plus $.25 per bushel. You expect a yield of 48 bushels per acre. What are your harvest costs per acre?

A. $15

B. $48

C. $27

D. $50

# **11.** The NW ¼ of Section 12 Township 19 Range 32 contains a maximum of:

A. 40 acres

B. 80 acres

C. 160 acres

D. 320 acres

**102.** Jim, a wheat farmer in Texas, is planting a field of wheat which measures 1419’ by 1320’. He is using a no-till drill and applying his fertilizer at the same time he seeds. He is applying 12 gallons per acre of 28% liquid nitrogen, (2.99 pounds of N per gallon) at a cost of $1.15/gallon and 20 pounds per acre of a starter fertilizer, 11-52-0, at a cost of $680/ton. He is seeding at a rate of 65 pounds of seed per acre and figures he will need an additional 10% seed for corners.

How many pounds of wheat seed should Jim order from his local co-op? (round up if needed to the next pound)

A. 65

B. 279

C. 2795

D. 3075

**103.** A friend wants to plant his 45 acre lettuce field with a population of 28,000 plants per acre. The recommended seeding rate for the selected variety is 7.5 pounds per acre. The germination rate is 97.8%. How many pounds of seed does he need to plant to cover the field?

A. 385 pounds

B. 345 pounds

C. 625.8 pounds

D. 338 pounds

**Plant Stand Densities**

**12.**  If the recommended seeding rate for wheat is 13 to 21 seeds per foot within a 7 inch row, what would happen if the rate was increased to 60 seeds per foot within a 7 inch row?

A. nothing would occur

B. disease and lodging would increase

C. increased yield would result in better straw

D. an increase in tiller numbers

**13.** Your crop advisor is counting plants in your corn field to determine plant population. The corn is planted in 30 inch rows with an average of 38 plants per 20 foot length. What is the plant population per acre?

A. 29,620

B. 33,100

C. 37,540

D. 41,320

**104.** You are estimating the plant population for your cotton field planted on 30 inch rows. In 17 feet 5 inches you counted 18 plants. What is your average plant population per acre?

A. 17,500

B. 18,000

C. 36,000

D. 180,000

**Tillage and Cropping Systems**

**14.** Prolonged applications of animal manure or biosolids can result in a build up of which of these nutrients?

A. Phosphorus

B. Nitrogen

C. Potassium

D. Sulfur

**15.** A limitation of a no-till cropping system is:

A. increases in fuel costs

B. increases in amount of machinery purchases

C. more labor required

D. certain crop disorders may be more of a problem

**16.** If a farmer uses a disc-chisel in a tillage system, these are considered:

A. no-till

B. residue enhancers

C. secondary tillage

D. primary tillage

**17.** What advantage does a crop rotation system have over a single crop system?

A. requires less machinery

B. helps break pest cycles

C. allows farmers maximum participation in government commodity programs

D. reduces chances of a crop failure

**18.** Green manuring is a process of:

A. Adding manure as postemergence treatment to plants

B. Adding manure to plants while they are young

C. Growing a crop to trap insects

D. Growing a crop and plowing it under before planting the next crop

**105.** Fallowing land can best be described as:

A. land used for recreational purposes

B. land set aside for homes or other structures

C. land left idle for one year for weed control or moisture retention

D. land in a government program for wildlife enhancement

**106.** One limitation of a no-till system is:

A. increases fuel costs

B. requires more labor

C. increases machinery costs

D. certain pests may be more of a problem

**Entomology**

**Insects**

**19.** Which of the following insects is considered a beneficial or predatory insect?

A. Aphids

B. Mexican bean beetle

C. Japanese beele

D. green lacewing

**20.** The grain that you had stored is full of holes. Which of the following insects most likely caused this damage?

A. honey bees

B. lady beetle

C. sawtooth grain beetle

D. corn earworm

**21.** Of the beetles listed which is the smallest?

A. Lady beetle

B. Colorado potato beetle

C. Flea beetle

D. Japanese beetle

**22.** An example of biological aphid control is:

A. using an insect growth regulator

B. destroying all natural predators

C. setting and maintaining traps

D. introduction and protection of natural predators

**23.** With a systemic insecticide the insect may be killed by:

A. Ingesting a portion of the plant

B. Wintering over in crop residue that was sprayed with insecticide

C. Contact with the insecticide from spraying the field

D. Both a and c

**107.** Which of the following insects has a gel-like body?

A. aphid

B. spidermite

C. bean leaf beetle

D. green lacewing

**108.** Which of the following insects is necessary for pollinating vegetable crops such as cucumber, watermelon, and cantaloupe?

A. Grasshopper

B. Gypsy moth

C. Honey bee

D. Corn earworm

**Insecticides**

**24.** Which of the following is a way to prevent pesticide resistance?

A. discourage natural predators

B. use pesticides with a single site of action

C. use the same pesticide on the same pest year after year

D. rotate pesticides with different modes of action

**25.** Integrated pest management (IPM) is pest control based on the principle of:pest eradication through

A. chemical and nonchemical management procedures

B. management of pest populations through a combination of various chemical pesticide groups

C. management of pest populations through chemical and nonchemical procedures

D. pest eradication through a management program which combines using various pesticide groups at established time periods

**26.** Which of the following classes of insecticides requires the most thorough spray coverage?

A. contact

B. systemic

C. photosynthetic

D. seed treatment

**109.** An insecticide that moves throughout the plant is:

A. systemic

B. contact

C. photosynthetic

D. juvenile

**110.** Which of the following signal words represent the greatest hazard?

A. hazard

B. warning

C. danger

D. toxic

**Insecticide Application**

**27.** You are spraying a field at 7 MPH. Your nozzle output is 0.32 GPM. The nozzles are 32 inches apart. How much spray mixture do you need per acre?

A. 5.6 gallon/acre

B. 8.5 gallons/acre

C. 12.7 gallons/acre

D. 2.0 gallon/acre

**28.** Select the condition that could help reduce pesticide volatilization:

A. high air temperatures

B. low relative humidity

C. incorporation in soil

D. small droplets

**111.** You are spraying a field at 6 MPH. Your nozzle output is 0.45 GPM. The nozzles are 35 inches apart. How much spray mixture do you need per acre?

A. 5.6 gallons

B. 8.2 gallons

C. 12.7 gallons

D. 2.3 gallons

**Plant Diseases**

**29.** Which of the following diseases contain certain compounds (alkaloids) that are toxic to animals?

A. corn smut

B. ergot

C. powdery mildew of red clover

D. spring black stem of alfalfa

**30.** Powdery mildew can be controlled by using which of the following type of crop protection product(s)?

A. nematicide

B. miticide

C. fungicide

D. all of the above

**31.** Which of the following pathogens would cause a streaming or water-soaked effect in leaf tissue?

A. fungi

B. bacteria

C. virus

D. nematode

**32.** Your oat crop has a black growth where the seed should be. This blows in the wind. This disease is probably caused by?

A. Bacteria

B. Fungi

C. Virus

D. Herbicide

**33.** Stewarts wilt (*Pantoea stewartii*) on sweet corn is caused by a:

A. A bacteria

B. An insect

C. A virus

D. A fungus

**34.** This disease spreads by water splash and causes problems with water uptake in the plant as it grows in the vascular tissue. The cause is most likely a .

A. virus

B. nematode

C. bacteria

D. fungi

**35.** A systemic fungicide:

A. does not move in the plant

B. moves throughout the plant

C. only moves in the roots of the plant

D. only moves in the plant stem

**36.** Plant diseases native to an area and generally at a low level are called:

A. endemic

B. epidemic

C. pathogenic

D. organismal

**37.** It may be necessary to repeat an application of a foliar (ex. leaf blights) fungicide because:

A. the fungi become resistant to the fungicide

B. new diseases become a problem

C. the disease becomes more severe with time

D. the plant continues to produce new unprotected foliage

**112.** Your tobacco leaves look mottled and twisted. Nothing has been sprayed in the area. What is the most likely cause listed?

A. Bacteria

B. Virus

C. Fungi

D. Japanese beetle feeding

**113.** Corn mushroom (smut) is considered a delicacy in some cultures. What causes this disease?

A. herbicide

B. virus

C. fungi

D. bacteria

**114.** You are called by your neighbor to look at his cucumbers. The foliage is covered with white spots. With close inspection the spots appear powdery. Which of the following most likely caused the problem?

A. white grubs

B. bacterial wilt

C. powdery mildew

D. herbicide damage (pigment inhibitor)

**Plant Science**

**Crop Specific Knowledge**

**38.** Which of the following crops uses the most applied nitrogen?

A. corn

B. soybeans

C. cotton

D. orchardgrass

**39.** In small grain production (rice, wheat, rye, barley or oats), which of the following leaves is most important to grain fill?

A. The flag leaf

B. Leaves produced while tillering

C. All leaves are equally important

D. None of the above

**40.** Certain genetic lines of corn, soybeans and cotton have been genetically modified to be tolerant to what commonly used herbicide:

A. Altrazine

B. Liberty

C. Cobra

D. Accent

**41.** Which of the following stages of wheat growth comes first in the development of a wheat plant?

A. soft dough

B. tiller stage

C. first node appears

D. flag leaf stage

**42.** Certain genetic lines of corn and soybeans have been genetically modified to be tolerant to what commonly used herbicide:

A. Dual II Magnum

B. Banvel

C. Roundup

D. Callisto

**43.** A hybrid is:

A. the most expensive seed source

B. a cultivated variety within a plant species that is different from other members of its species

C. a male plant

 D. offspring of two parents that are different in one or more heritable characteristics

**44.** A cultivar is:

A. the most expensive seed source

B. a cultivated variety within a plant species that is different from other members of its species

C. a male plant

D. offspring of two parents that are different in one or more heritable characteristics

**45.** What type of wheat is generally used to produce spaghetti noodles:

A. Hard Red Winter

B. Soft White

C. Hard White

D. Durum

**46.** Vernalization is a process some plants require to flower and produce seed. An example of a crop that needs vernalization is:

A. dent corn

B. sweet corn

C. winter wheat

D. cotton

**47.** A wheat plant would be damaged most by a frost at what stage of development:

A. pre-emergence

B. early tillering

C. just before it heads out

D. just before harvest

**115.** Which of the following crops uses the most nitrogen?

A. corn

B. soybeans

C. cotton

D. orchardgrass

**116.** By cutting alfalfa too late in the fall, the farmer will:

A. Increase his yield for the next year

B. Destroy alfalfa weevil wintering over

C. Increase the carbohydrate reserves stored in the crown

D. Weaken the stand next spring or reduce yields next spring

**117.** What role do rhizobia bacteria play in white clover plant development?

A. fix nitrogen from the air and make it available to the plant.

B. loosen soil to allow for better root development.

C. provide more axillary buds

D. prevent worms from feeding on roots.

**Distinguishing Plant Characteristics**

**48.** As a rice, wheat, rye or other grain crop plant emerges through the soil surface the primary leaf or plumule is protected by the

A. hypocotyls

B. coleoptile

C. rhizome

D. mesocotyl

**49.** Which of the following crops is a dicot?

A. corn

B. rice

C. orchardgrass

D. tomato

**50.** Which of the following species has a spiked inflorescence?

A. Tomato

B. Kentucky bluegrass

C. Timothy

D. Oats

**51.** On a grass plant which part is a clasp-like structure located where the blade attaches

to the stem?

A. Ligule

B. Apical meristem

C. Auricle

C. Root

**52.** A soybean plant has the top of the plant eaten by a ground hog. The plant recovers and continues to grow. What part of the plant makes this possible?

A. Auricles

B. Axillary buds

C. Large Stomates

D. Rhizomes

**53.** The part of the seed that becomes the first root is called the .

A. Radicle

B. Plumule

C. Endosperm

D. Hilum

**54.** Which of the following has a panicle inflorescence?

A. alfalfa

B. Kentucky bluegrass

C. rye

D. morninglory

**55.** The tillers of a plant can best be described as:

A. roots

B. leaves

C. crown

D. stems

**56.** Which of the following definitions best describes a petiole:

A. the surface of the leaf

B. the stem attached to the leaf

C. the vein structure in the leaf

D. the edge of the leaf

**118.** The endosperm is to an emerging seed.

A. The starchy food source

B. The first root

C. Protection for the plumule

D. The embryo

**119.** The first true leaves on a soybean plant are .

A. Cotyledons

B. Unifoliate

C. Trifoliate

D. Parallel veined

**120.** Which of the following structures would be considered an underground stem?

A. Seed

B. Auricle

C. Rhizome

D. Nodule

**Plant Nutrition**

**57.** A crop of corn can best take up which of the following forms of

nitrogen?

A. ammonium and nitrite

B. ammonium and nitrate

C. nitrite alone

D. nitrogen from the atmosphere

**58.** Generally which nutrient deficiency causes grass leaves to have yellow margins?

A. phosphorus

B. iron

C. potassium

D. sulfur

**59.** What role does nitrogen play in a plant?

A. It is a primary component of cellulose

B. It is used for synthesis of proteins

C. It is part of the lignin in a plant

D. It is a primary compound in sugars

**60.** The secondary nutrients are:

A. Calcium, manganese, and sulfur

B. Calcium, magnesium, and sulfur

C. Copper, magnesium, and sodium

D. Sulfur, calcium, and phosphorus

**61.** Which of the following is not a primary nutrient for plant growth?

A. Calcium

B. Nitrogen

C. Phosphorus

D. Potassium

**62.** Plant tissue analysis can give information on:

A. additional fertility needs

B. harvest date

C. GMO or not

D. number of degree days

**121.** Your rice plant has yellow lower leaves. The newer leaves appear green. The intermediate leaves show yellowing from the tip down the midvein. Which nutrient deficiency possibly caused this damage?

A. Phophorus

B. Sulfur

C. Boron

D. Nitrogen

**122.** Which of the following is not a micronutrient needed for plant growth?

A. Boron

B. Iodine

C. Zinc

D. Manganese

**123.** What role does phosphorus play in a plant?

A. It is a primary component of cellulose

B. It is used for energy storage and transfer

C. It is part of the lignin in a plant

D. It is a primary compound in sugars.

**Plant Physiology**

**63.** Sweet corn hybrid XYZ is ready for picking in 82 days in Fairfield, Michigan but it takes 102 days for the same sweet corn to be ready in Fairfield, Washington. The *best* explanation for this is difference in:

A. elevation

B. degree days

C. sub-soil structure

D. soil texture

**64.** Drought has the most severe impact on yield of most grain crops during:

A. cotyledon stage

B. rooting stage

C. mature seed grain stage

D. flowering reproductive stage

**65.** Winter varieties of crops need a cool or freezing period in order to insure the plant will flower the next year. For example winter wheat. This process is called:

A. vernalization

B. glutenizing

C. scarification

D. bolting

**66.** Geotropism is caused by plant hormones that cause a plant to

A. lean toward a light source

B. have downward growth of roots

C. have upward growth of stems

D. both b and c

**124.** Vernalization is a process some plants require to flower and produce seed. This process involves exposure to:

A. cold temperatures

B. hot temperatures

C. over 12 hours of sun light

D. under 12 hours of sun light

**125.** Earliest planting date for a crop species is determined by . . .

A. Soil moisture

B. Calendar date

C. Soil temperature

D. Crop variety

**126.** The average water needs of a plant are greatest when:

A. the seed is placed in the soil

B. when the plant is in the cotyledon stage

C. when the plant is nearing or in reproductive stage

D. when the plant has reached maturity

**Soils and Soil Fertility**

**Basic Soil Science**

**67.** The largest particle in soil is?

A. sand

B. silt

C. clay

D. loam

**68.** A soil is classified as “acid” if it has a pH

A. Below 6.5

B. Higher than 7.5

C. That is neutral

D. Has no pH

**69.** Which of the following soil types would have the highest Cation Exchange Capacity (CEC)?

A. Sand

B. Sandy clay loam

C. Silt loam

D. Muck

**70.** The water pH of a soil is an accurate measure of what?

A. The amount of soluble salts in a soil

B. The lime requirement of a soil

C. The concentration of hydrogen ions in the soil solution

D. The amount of free lime in the soil

**71.** Which of the following is not a liming material?

A. Ag ground limestone

B. Potassium nitrate

C. Calcium carbonate

D. Ag pulverized slag

**72.** A recognizable compaction layer in a field is often called:

A. caliche material

B. a plow pan

C. a drill pan

D. a cultivation pan

**73.** Cropping systems can modify soil structure by:

A. increasing root activity

B. protecting the soil from erosion

C. adding organic matter

D. all the above

**74.** Soil structure is defined as:

A. the way sand, silt and clay are grouped together

B. the way the soil was built by glaciers

C. the ability of soil to be used in supporting buildings

D. the percent of sand, silt and clay

**127.** A soil is classified as “alkaline” if it has a pH

A. below 6.5

B. higher than7.5

C. that is neutral

D. has no pH

**128.** A soils cation exchange capacity or CEC is determined by its organic matter content and the amount of:

A. sand

B. silt

C. clay

D. water

**129.** Which of the following soil components has the largest surface area per cubic foot of soil?

A. Sand

B. Silt

C. Clay

D. Metals

**130.** Your soil has a pH of 7.5. You need to lower it to 7.0. What can you do?

A. Apply sulfur

B. Apply lime

C. Apply micronutrients

D. Apply herbicides

**Soil Fertility**

**75.** Soil sampling should not be conducted :

A. if rain is expected

B. if tillage is going to be done

C. if the soil is too warm

D. if the soil is frozen

**76.** A nutrient has greater potential to move into groundwater on a soil with:

A. high organic matter content, such as a muck soil

B. high sand content, such as a sandy soil

C. high clay content, such as a clay loam soil

D. high silt content, such as a silty clay loam soil

**77.** A nutrient has greater potential to move into groundwater on a soil with:

A. high organic matter content, such as a muck soil

B. high sand content, such as a sandy soil

C. high clay content, such as a clay loam soil

D. high silt content, such as a silty clay loam soil

**78.** Increasing the pH on certain soils increases the availability of:

A. microbes and earthworms

B. cations like calcium and magnesium

C. anions like iron

D. soil moisture

**79.** Phosphorus will not move a great deal in soil because:

A. it is a cation and reacts with organic matter

B. it is a cation and reacts with sand

C. it is an anion and reacts with calcium, iron, aluminum and clay surfaces

D. it is always applied at low rates

**131.** When taking soil fertility samples the depth of sampling should;

A. Be several feet

B. Reflect depth of tillage and crop characteristics

C. Stay in the top two inches of soil

D. Vary with the amount of fertilizer used

**132.** Potassium is held in soil:

A. by binding to electrical charges on/in minerals and clays

B. by binding to cobalt

C. by binding to soil microbes

D. by binding to the soil solution

**133.** Which of the following nutrients becomes more available as the pH increase? (becomes more alkaline)

A. copper

B. iron

C. manganese

D. calcium

**134.** Lowering the pH on certain soils increases the availability of:

A. microbes and earthworms

B. cations like calcium and magnesium

C. anions like iron

D. soil moisture

**Weed Science**

**Herbicides**

**80.** Why would you add a surfactant to a pesticide for application?

A. to enhance adsorption of the pesticide

B. to aid in spreading and sticking of the pesticide

C. to enhance the pesticide’s rain-fastness

D. all of the above

**81.** The proper mixing order for herbicides is:

A. wettable powders – dispersible granules – emulsifiable concentrates –surfactants

B. surfactants – liquid fertilizers – wettable powders – dispersible granules –emulsifiable concentrates

C. surfactants – liquid fertilizers

D. emulsifiable concentrates – dispersible granules – wettable powders – surfactants – surfactants

**82.** Foliar applied herbicides that exhibit differential selectivity are generally based upon what?

A. differential placement

B. differential metabolism

C. physiological morphogenesis

D. both a and c

**83.** The movement of pesticides downward through the soil to the water table is called?

A. Runoff

B. Drift

C. Leaching

D. Back-siphoning

**84.** Looking at the Accent 4DF label what does the DF stand for?

A. Dispersible flowable

B. Dry flowable

C. Dissolved formulation

D. Dissolved floride

**85.** Which of the following statements appears on all pesticide labels?

A. Keep out of reach of children

B. Calibrate sprayer before application.

C. Danger – poison.

D. Caution – May be harmful if swallowed

**86.** Which of the following is the best way to avoid herbicide resistance?

A. Plant the same crop and use the same herbicide at a higher rate.

B. Plant the same crop and combine different herbicide families

C. Rotate crops using Roundup-Ready technology.

D. Rotate crops using different herbicide families.

**87.** A herbicide application made before the crop or weeds emerges is:

A. a postemergence application

B. a preemergence application

C. a post-banded application

D. an off-label application

**135.** The selectivity of a herbicide is a measure of the:

A. herbicide’s ability not to go off target (i.e. no drift, runoff, etc.)

B. toxicity to humans

C. time it will remain active in the soil

D. species of weeds it will kill or control

**136.** The reason for adding liquid fertilizer solution to herbicide applications is to:

A. Optimize the pesticide’s activity

B. Aid in the penetration and absorption of the pesticide

C. Aid in the translocation of the pesticide to the active site

D. All of the above

**137.** An herbicide is most likely to pollute groundwater if it has which of the following characteristics?

A. rapidly degraded by soil organisms

B. strongly adsorbed to soil colloids

C. high solubility

D. high volatility

**138.** A thick, waxy plant cuticle:

A. decreases the amount of herbicide needed

B. increases the amount of herbicide needed

ha



C. has no affect on the rate of herbicide needed

D. requires a double rate of herbicide

**Herbicide Application**

**88.** You have a center pivot irrigating 148 acres of tomatoes. To control weeds you will chemigate 4.5 ounces of herbicide per acre on his field. How many gallons of herbicide must you use for this application?

A. 4.5 gallons

B. 5 gallons

C. 5.2 gallons

D. 3.8 gallons

**89.** The label directs you to add a spreader-sticker to the tank mix. The application rate for the spreader-sticker (surfactant) is 3 quarts per 100 gallons of water. You need to mix 115 gallons of spray. How much spreader- sticker do you need?

A. 34.5 oz

B. 110 oz

C. 55 oz

D. 441 oz

**139.** Rainfall or irrigation is needed after a preemergence herbicide application to:

A. decrease the rate of microbial activity

B. move the herbicide into the weed germination zone

C. decrease the rate of herbicide breakdown

D. improve the distribution of the pesticide sticker used

**140.** The label directs you to add a spreader-sticker to the tank mix. The application rate for the spreader-sticker (surfactant) is 3 quarts per 100 gallons of water. You need to mix 115 gallons of spray. How much spreader- sticker do you need?

A. 34.5 oz

B. 110 oz

C. 55 oz

D. 441 oz

**141.** Spray drift is the least when which of the following conditions exist?

A. droplet size increases, wind speed increases

B. droplet size decreases, wind speed decreases

C. droplet size decreases, wind speed increases

D. droplet size increases, wind speed decreases

**Herbicide Injury**

**90.** The broadleaf weeds in your corn field are showing a white coloration. Which of the following herbicide types would most likely cause such injury?

A. Growth regulator

B. Cell membrane disrupter

C. Amino acid inhibitor

D. Pigment inhibitor

**91.** Your tomato plants are twisting toward the ground and dying. Which of these type of herbicides most likely caused this damage?

A. cell membrane disrupter

B. growth regulator

C. pigment inhibitor

D. amino acid inhibitor

**142.** The broadleaf weeds in your sorghum field are showing cupped leaves and epinasty. Which of the following herbicide types would most likely cause such injury?

A. growth regulator

B. cell memebrane disrupter

C. pigment inhibitor

D. amino acid inhibitor

**Weeds**

**92.** Which of the following weed species is a biennial?

A. Pigweed

B. Canada thistle

C. Wild carrot

D. Johnsongrass

**93.** Canada thistle is a problem weed that spreads by creeping roots. Which of these methods would best control this weed?

A. Plowing

B. Cultivation

C. Spring applied fungicides

C. Fall applied herbicides

**94.** Weeds such as nightshade are hard to control in crops like tomato because:

A. they are herbicide resistant

B. they are in the same family.

C. tomato closes canopy quickly.

D. nightshade grows faster

**95.** Weeds are a problem year after year because:

A. weeds can grow in all soil temperatures

B. weeds can grow in any soil pH

C. the seed can be dormant in the soil

D. weeds are resistant to most herbicides

**143.** Johnsongrass is a primary noxious weed in most states due to its spread by both seed and rhizome. Which of these methods would best control this weed?

A. Plowing

B. Cultivation

C. Spring applied fungicides

D. Fall applied herbicides

**144.** Which of the following weeds contains alkaloids that can cause hallucinations or death if ingested?

A. dandelion

B. jimsonweed

C. wild carrot

D. pigweed