

Crop Protection Reviewer By Agriculture Review

- 1. In integrated pest management (IPM), the "economic injury level" (EIL) is defined as:**
 - A. The pest density that causes minimum visible crop damage
 - B. The lowest pest population that will cause economic loss equal to the cost of control
 - C. The pest density below which no yield reduction occurs
 - D. The pest density at which control action should be initiated

- 2. In a pest monitoring program, yellow sticky traps are most effective for capturing which group of insect pests?**
 - A. Soil-dwelling beetle larvae
 - B. Winged aphids and whiteflies
 - C. Caterpillars of Lepidoptera
 - D. Stem borers of rice

- 3. The rice sheath blight pathogen, *Rhizoctonia solani*, survives between cropping seasons primarily through:**
 - A. Conidia on alternate hosts
 - B. Sclerotia and infected plant debris
 - C. Soil zoospores
 - D. Seed-borne mycelium only

- 4. In biological control, the parasitoid *Trichogramma chilonis* is widely used against:**
 - A. Rice stem borers and tomato fruit borers
 - B. Leaf miners in coconut
 - C. Aphids and jassids
 - D. Rice planthoppers

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5. A typical symptom of bacterial leaf blight (BLB) of rice caused by *Xanthomonas oryzae* pv. *oryzae* is:

- A. Grayish water-soaked lesions with wavy margins on leaves
- B. Yellowing and blighting starting from leaf tips with drying along margins
- C. Circular necrotic spots with concentric rings
- D. Powdery white patches on leaf surfaces

6. Among the following weeds, which one propagates mainly through tubers, making it difficult to control mechanically?

- A. *Echinochloa crus-galli*
- B. *Cyperus rotundus*
- C. *Imperata cylindrica*
- D. *Amaranthus spinosus*

7. The phenomenon where pest resurgence occurs after excessive use of broad-spectrum insecticides is primarily due to:

- A. Reduced pest fecundity
- B. Destruction of natural enemies
- C. Increased pesticide degradation
- D. Pest migration from nearby fields

8. The disease triangle concept in plant pathology emphasizes that an epidemic occurs only when:

- A. A virulent pathogen and susceptible host exist
- B. Pathogen, susceptible host, and favorable environment interact simultaneously
- C. Pathogen population exceeds the threshold level
- D. Host is genetically resistant but exposed to virulent pathogen

9. The concept of “allelopathy” in weed science refers to:

- A. Competition among weeds for soil nutrients
- B. Mutualistic association between weeds and microbes
- C. Chemical inhibition of one plant by another through release of toxic compounds
- D. The ability of weeds to resist herbicides genetically

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10. Which of the following management strategies best exemplifies the "cultural control" method in integrated pest management?

- A. Spraying selective insecticides during flowering stage
- B. Rotating rice with leguminous crops to disrupt pest life cycles
- C. Introducing egg parasitoids in the field
- D. Using pheromone traps for pest monitoring

11. In pest monitoring, the concept of "degree-days" is used primarily to:

- A. Determine the duration of pesticide residual effect
- B. Predict insect development stages based on accumulated heat units
- C. Estimate rainfall patterns for pest forecasting
- D. Evaluate temperature tolerance of weed seeds

12. The rice planthopper, *Nilaparvata lugens*, causes "hopperburn" due to:

- A. Transmission of bacterial wilt
- B. Continuous sucking of phloem sap causing plant desiccation
- C. Injection of fungal spores into xylem vessels
- D. Deposition of honeydew promoting mold growth

13. In integrated weed management (IWM), stale seedbed technique is most effective when:

- A. The field is flooded immediately after tillage
- B. Weed seeds are allowed to germinate before crop planting and then destroyed
- C. Herbicide is sprayed before irrigation
- D. Crop residues are incorporated after sowing

14. The appearance of white, cottony growth on the underside of tomato leaves accompanied by yellowing on the upper surface indicates infection by:

- A. *Alternaria solani*
- B. *Pseudoperonospora cubensis*
- C. *Phytophthora infestans*
- D. *Oidium lycopersici*

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15. In IPM programs, "augmentation" of natural enemies refers to:

- A. Conservation of existing natural enemies through reduced pesticide use
- B. Periodic release of mass-reared beneficial organisms into the field
- C. Importation of exotic beneficial species for pest control
- D. Habitat modification to enhance predator survival

16. Which weed is considered an alternate host of rice tungro virus, thereby contributing to its spread?

- A. *Echinochloa colona*
- B. *Leptochloa chinensis*
- C. *Fimbristylis miliacea*
- D. *Cyperus iria*

17. In fungicide resistance management, the term "FRAC code" refers to:

- A. Fungicide Regulatory Approval Code
- B. A classification system based on fungicide mode of action
- C. A measure of fungicide residual persistence
- D. A numerical rating of fungicide phytotoxicity

18. The weed *Imperata cylindrica* (cogon grass) reproduces mainly through:

- A. Underground rhizomes
- B. Wind-dispersed seeds
- C. Tuberous roots
- D. Aerial stolons

19. The rice gall midge (*Orseolia oryzae*) induces gall formation due to:

- A. Mechanical feeding damage by adults
- B. Larval feeding and secretion of growth-regulating substances
- C. Secondary infection by fungal pathogens
- D. Egg-laying inside leaf sheaths causing tissue rupture

20. The main purpose of using buffer zones in pesticide application is to:

- A. Increase pesticide absorption in soil
- B. Prevent spray drift and protect adjacent sensitive areas
- C. Improve chemical mixing efficiency
- D. Enhance foliar uptake by neighboring crops

21. The bacterium *Xanthomonas oryzae* pv. *oryzae*, causing bacterial leaf blight in rice, enters the plant primarily through:

- A. Stomata and hydathodes
- B. Root hairs
- C. Wounds caused by insects
- D. Lenticels and leaf midrib

22. The mycotoxin “Aflatoxin B₁” is primarily produced by which fungal species under warm and humid storage conditions?

- A. *Fusarium oxysporum*
- B. *Aspergillus flavus*
- C. *Penicillium chrysogenum*
- D. *Rhizopus stolonifer*

23. In Integrated Pest Management (IPM), the concept of “sequential sampling” is mainly applied to:

- A. Determine pest resistance to insecticides
- B. Estimate pest density to decide control action with minimum sampling effort
- C. Evaluate pesticide residues
- D. Classify insect feeding guilds

24. The resistance mechanism in plants where biochemical changes inhibit insect growth or survival is known as:

- A. Antibiosis
- B. Antixenosis
- C. Tolerance
- D. Non-preference

25. The Sterile Insect Technique (SIT) has been most successfully implemented worldwide against which pest species?

- A. Mediterranean fruit fly (*Ceratitis capitata*)
- B. Rice stem borer (*Scirpophaga incertulas*)
- C. Cotton bollworm (*Helicoverpa armigera*)
- D. Brown planthopper (*Nilaparvata lugens*)

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26. The principal vector of tungro virus complex in rice fields of Southeast Asia is:

- A. *Nephotettix virescens*
- B. *Sogatella furcifera*
- C. *Nilaparvata lugens*
- D. *Cicadulina mbila*

27. The enzyme “cutinase” produced by fungal pathogens aids in:

- A. Penetration of host cuticle by degrading cutin
- B. Detoxification of plant secondary metabolites
- C. Spore germination on host surface
- D. Formation of appressorium

28. The mode of action of neonicotinoid insecticides such as imidacloprid is primarily through:

- A. Inhibition of acetylcholinesterase
- B. Activation of nicotinic acetylcholine receptors causing continuous nerve stimulation
- C. Blocking sodium channels in neurons
- D. Inhibiting oxidative phosphorylation

29. The pathogen *Phytophthora infestans* that caused the Irish potato famine belongs to which group of organisms?

- A. Ascomycetes
- B. Oomycetes
- C. Basidiomycetes
- D. Deuteromycetes

30. The insecticide resistance management (IRM) strategy that alternates chemicals with different modes of action over time is called:

- A. Mixture strategy
- B. Rotation strategy
- C. Sequential strategy
- D. Mosaic strategy

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31. In the disease cycle of *Puccinia graminis* f. sp. *tritici* (wheat stem rust), the alternate host *Berberis* species plays a key role in:

- A. Completing the sexual stage of the pathogen
- B. Producing uredospores for secondary infection
- C. Acting as the overwintering host for uredospores
- D. Providing shelter to insect vectors

32. The causal organism of downy mildew of maize (*Peronosclerospora sorghi*) is best identified microscopically by the presence of:

- A. Sporangia borne on dichotomously branched sporangiophores
- B. Unbranched conidiophores with septate conidia
- C. Oospores with thick, sculptured walls
- D. Pycnidia containing single-celled conidia

33. The insect *Scirpophaga incertulas* (yellow stem borer of rice) overwinters primarily in which developmental stage?

- A. Pupa inside rice stubble
- B. Egg masses on grass hosts
- C. Larva inside rice stubbles
- D. Adult moth in diapause

34. The principal reason for the resurgence of brown planthopper (*Nilaparvata lugens*) in rice ecosystems is:

- A. Excessive and indiscriminate use of broad-spectrum insecticides
- B. Use of resistant rice varieties
- C. Heavy rainfall and waterlogging
- D. Reduction in nitrogen fertilizer

35. The hypersensitive response (HR) in plants during pathogen attack is primarily mediated by:

- A. Reactive oxygen species and localized cell death
- B. Callose deposition in phloem tissues
- C. Secretion of phytoalexins alone
- D. Reduction in photosynthesis in infected tissue

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36. “Cercospora leaf spot” of sugar beet produces its characteristic lesions due to which phytotoxic compound?

- A. Cercosporin
- B. Alternariol
- C. T-toxin
- D. Fusaric acid

37. The process of “detoxification of allelochemicals” in insect midgut is primarily mediated by:

- A. Cytochrome P450 monooxygenases
- B. Chitinase enzymes
- C. Juven hormone esterase
- D. Tyrosinase

38. Which of the following fungal diseases of rice shows a “dirty panicle” symptom at harvest?

- A. False smut
- B. Sheath blight
- C. Leaf scald
- D. Grain discoloration complex

39. The virus responsible for “Papaya ringspot” belongs to which viral group?

- A. Potyvirus
- B. Tobamovirus
- C. Tospovirus
- D. Geminivirus

40. The selective herbicide “Pendimethalin” inhibits which biochemical process in susceptible plants?

- A. Microtubule assembly during cell division
- B. Acetolactate synthase activity
- C. Photosystem II electron transport
- D. Lipid biosynthesis

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41. The disease “Tikka leaf spot” of groundnut is caused by:

- A. *Cercospora arachidicola* and *Cercosporidium personatum*
- B. *Alternaria alternata* and *Colletotrichum capsici*
- C. *Phoma exigua* and *Phyllosticta arachidis*
- D. *Helminthosporium oryzae* and *Fusarium solani*

42. The term “pseudothecium” is associated with the sexual reproductive structure of which fungal class?

- A. Loculoascomycetes
- B. Basidiomycetes
- C. Deuteromycetes
- D. Phycomycetes

43. The insect growth regulator (IGR) “diflubenzuron” disrupts insect development by:

- A. Inhibiting chitin synthesis during molting
- B. Mimicking juvenile hormone
- C. Blocking ecdysone receptor
- D. Interfering with mitochondrial respiration

44. The rice disease “Sheath blight” caused by *Rhizoctonia solani* spreads primarily through:

- A. Sclerotia and contact between infected and healthy plants
- B. Airborne basidiospores
- C. Seedborne conidia
- D. Insect-vectored spores

45. The pesticide formulation “WP” stands for:

- A. Wettable powder
- B. Water paste
- C. Wax pellet
- D. Water polymer

46. The insect pest *Leucinodes orbonalis* attacks which major crop?

- A. Eggplant (*Solanum melongena*)
- B. Tomato (*Solanum lycopersicum*)
- C. Okra (*Abelmoschus esculentus*)
- D. Chili (*Capsicum annum*)

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47. The “green ear” symptom in pearl millet is associated with infection by:
- A. *Sclerospora graminicola*
 - B. *Claviceps fusiformis*
 - C. *Tolyposporium penicillariae*
 - D. *Ustilago cynodontis*
48. The “cultural control” of bacterial wilt in tomato (*Ralstonia solanacearum*) is best achieved by:
- A. Crop rotation with non-solanaceous crops
 - B. Application of copper oxychloride
 - C. Soil fumigation with methyl bromide
 - D. Foliar spray of streptomycin
49. “Entomopathogenic nematodes” such as *Steinernema* and *Heterorhabditis* species kill insect hosts through:
- A. Symbiotic bacteria producing toxins inside the host
 - B. Direct tissue penetration and feeding
 - C. Paralyzing nervous system with neurotoxins
 - D. Blocking insect tracheal system
50. The resistance-breaking biotype of brown planthopper (*Nilaparvata lugens*) that overcomes the resistance gene Bph1 in rice was first reported in:
- A. Philippines
 - B. India
 - C. Thailand
 - D. Japan
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Answer Key

- Question 1: Option B
- Question 2: Option B
- Question 3: Option B
- Question 4: Option A
- Question 5: Option B
- Question 6: Option B

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- Question 7: Option B
- Question 8: Option B
- Question 9: Option C
- Question 10: Option B
- Question 11: Option B
- Question 12: Option B
- Question 13: Option B
- Question 14: Option C
- Question 15: Option B
- Question 16: Option A
- Question 17: Option B
- Question 18: Option A
- Question 19: Option B
- Question 20: Option B
- Question 21: Option A
- Question 22: Option B
- Question 23: Option B
- Question 24: Option A
- Question 25: Option A
- Question 26: Option A
- Question 27: Option A
- Question 28: Option B
- Question 29: Option B
- Question 30: Option B
- Question 31: Option A
- Question 32: Option A
- Question 33: Option C
- Question 34: Option A
- Question 35: Option A
- Question 36: Option A
- Question 37: Option A
- Question 38: Option A
- Question 39: Option A
- Question 40: Option A
- Question 41: Option A
- Question 42: Option A
- Question 43: Option A

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- Question 44: Option A
- Question 45: Option A
- Question 46: Option A
- Question 47: Option A
- Question 48: Option A
- Question 49: Option A
- Question 50: Option A

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