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| Category | CQs | Answer by system |
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| **Disease/ Pest** | CQ1: What are the following symptoms indicate?   1. Ejection of chewed up fibers from wounds on palm trunk. 2. Palm leaves and offshoot become yellow. | Problem =   1. Red palm weevil damage |
| CQ2: What are the following symptoms indicate?   1. Cylindrical oblique holes appear on the palm trunk and leaf base. 2. Brown sticky material at holes on palm trunk. | Problem =   1. Longhorn date palm stem borer damage. |
| CQ3: What is the following symptom indicate?   1. Dark brown stripe appears on the dorsal side of rachis from the base to the top. | Problem =   1. Bayoud disease 2. Fusarium wilt disease 3. Reddish brown parallel spot disease. |
| CQ4: What are the following symptom indicate?   1. Brown or rusty spots appear on the external surface of unopening inflorescence. 2. Inflorescences covered with white powdery. | Problem =   1. Inflorescence rot disease. |
| CQ5: What are the following symptom indicate?   1. Longitudinal tunnels and holes on fruit bunch. 2. Spikelets tips become light gray to silver. 3. Holes on unopened spathe. | Problem =   1. Greater date moth damage. |
| CQ6: What are the following symptom indicate?   1. Leaflet becomes light green or yellowish green. 2. Oozing of honeydew on leaflet. | Problem =   1. Date palm dubas bug damage. |
| CQ7: What are the following symptom indicate?   1. A yellowish-brown stripe on leaf base and leaf rachis. 2. Leaf base rot. 3. Death of offshoot. | Problem =   1. Diplodia leaf-base disease. |
| CQ8: What are the following symptom indicate?   1. Deformation of Leaves 2. Brown spots with a light center and dark edge surrounded by a yellow halo on the leaflet. | Problem =   1. Anthracnose disease. |
| CQ9: What are the following symptom indicate?   1. Pale spots surrounded by a brown ring on leaflet. 2. Circular or irregular scorched shot holes on the leaf edge. | Problem =   1. Shole hole disease of date palm. |
| CQ10: What are the following symptom indicate?   1. Sticky material at entrance holes on leaf rachis. 2. Tunnels at leaf rachis. 3. Leaf becomes powdery. | Problem =   1. Palm frond borer damage. |
| CQ11: What are the following symptom indicate?   1. Death of leaflet from the tip backwards. 2. Malformation and twisting of leaf. 3. Leaf with a scorched or charcoal-like appearance. | Problem =   1. Black scorch disease. |
| CQ12: What are the following symptom indicate?   1. Subepidermal spots on both sides of the leaflet and rachis. 2. Yellow pustules that turn black on lower old leaf. 3. Drying of leaf. | Problem =   1. Graphiola leaf spot disease. |
| CQ13: What are the following symptom indicate?   1. Leaflet tip and edges become burnt grey. 2. Small yellow or brown circular spots on leaflet and leaf rachis. | Problem =   1. Pestalotia leaf spot disease. |
| CQ14: What are the following symptom indicate?   1. Small holes like shotgun bullets on trunk and leaf base. 2. Ejection of wooden sawdust from holes at leaf base or trunk. | Problem =   1. Bark beetle damage. |
| CQ15: What are the following symptom indicate?   1. Small and dried fruit hanging by silken threads. 2. Dropped fruit with holes and silky remain close to fruit cap. 3. Fruit becomes dark red. | Problem =   1. Lesser date moth damage. |
| CQ16: What are the following symptom indicate?   1. Deep tunnels on fruit stalk. 2. Superficial and deep tunnels on green leaves. 3. Malformation and twisting of offshoot leaves. | Problem =   1. Fruit stalk borer damage. |
| CQ17: What are the following symptom indicate?   1. Wilting on one side of leaf. 2. Dark brown stripe on leaf rachis. | Problem =   1. Bayoud disease. 2. Fusarium wilt disease. |
| CQ18: What are the following symptom indicate?   1. Small parallel reddish-brown spots on leaf. 2. Dark brown stripe appears on the dorsal side of rachis. | Problem =   1. Reddish brown parallel spot disease. |
| CQ19: What are the following symptom indicate?   1. Small holes below of inflorescence spathe. 2. Inflorescences become devoid of flowers and fruits. | Problem =   1. Date palm inflorescence weevil damage. |
| CQ20: What are the following symptom indicate?   1. Oozing of honeydew on leaflet. 2. Deformation and curl of fruit. | Problem =   1. Mealy bugs damage. |
| CQ21: What are the following symptom indicate?   1. Fruit stalk, leaf rachis, and leaflet become light green with brown spots. 2. Deformation and curl of fruit. | Problem =   1. Parlatoria date scale damage. |
| CQ22: What are the following symptom indicate?   1. Vertical tunnels at the root zone and offshoots base. 2. Soil tunnels on leaf base. 3. Death of newly planted offshoots. | Problem =   1. Termites damage. |
| CQ23: What are the following symptom indicate?   1. Silken webbings around fruits and spikelets that collect dust. 2. Fruit skin becomes leathery with a cork texture. 3. Fruits become reddish brown. | Problem =   1. Old world date mite damage. |
| CQ24: What are the following symptom indicate?   1. Light brown spots with dark brown edges on the leaflet and leaf rachis. 2. Dark gray spots with reddish-to-brown edges on both surfaces of the leaflet. | Problem =   1. Rectangular pale brown spot disease. |
| CQ25: What is the following symptom indicate?   1. Black sooty rot appears on the leaflet. | Problem =   1. Date palm Dubas bug damage. 2. Mealy bugs damage. |
| **Control Method** | CQ1: What is the suitable chemical control of (*Red palm weevil*)? | **Chemical Control =**   1. Cypermethrin 2. Deltamethrin 3. Methidathion |
| CQ2: What is the suitable chemical control of (*Black scorch disease of date palm*) | **Chemical Control =**   1. Thiophanate Methyl 2. Metalaxyl-M 3. Bordeaux Mixture 4. Mancozeb 5. Copper Oxychloride |
| **CQ3**: What is the suitable biological control of a (*Palm frond borer damage*)? | **Biological Control =**   1. Metarhizium anisopliae 2. Beauveria bassiana 3. Rhabdits blumi |
| **CQ4**: What is the suitable biological control of (*Red palm weevil*)? | **Biological Control =**   1. Chelisoches morio f 2. Platymeris laevicollis distant 3. Steinernema feltiae 4. Steinernema carpocapsae 5. Tetrapholypus rhynchophori 6. Beauveria bassiana 7. Scolia erratica smith 8. Heterorhabditis spp 9. Sarcophaga fuscicauda bottcher |
| **CQ5**: What is the suitable chemical control of (*Inflorescence rot disease*) | **Chemical Control =**   1. Thiophanate\_Methyl 2. Maneb 3. Benomyl 4. Metalaxyl-M 5. Mancopper 6. Bordeaux\_Mixture 7. Mancozeb 8. Copper\_Oxychloride 9. Dichlone 10. Bavistin 11. Thiram |
| **CQ6**: What is the suitable cultural control of *(Fusarium wilt disease)* | Cultural\_Control =   1. Use of thermal sterilization. 2. Avoid excessive irrigation. 3. stop planting in the same site. 4. uprooted and burned infected palms on the spot. 5. Agricultural quarantine. 6. Stop planting of Hijazi Alfalfa. |
| **CQ7**: What is the suitable biological control of (*Fruit Stalk Borer Damage)* | **Biological Control =**   1. Metarhizium anisopliae 2. Beauveria bassiana 3. Rhabdits blumi |
| **CQ8**: What is the suitable chemical control of  (*Bayoud disease*) | **Chemical Control =**   1. Thiophanate\_Methyl 2. Chloropicrin 3. Methyl\_Bromide 4. Hymexazol |
| **CQ9**: What is the suitable cultural control of  (*Black scorch disease of date palm*) | Cultural\_Control =   1. Avoid planting of Infected offshoot. 2. Protect wounds on palm parts. 3. Avoid removing spines by pulling. 4. Avoid injuries of palms parts. 5. Remove and burn of infected plant part. 6. Uprooted and burned of infected palms on the spot. 7. Ensure proper operation and maintenance. |
| **CQ10**: What is the suitable chemical control of  (*Diplodia Leaf-Base disease*) | **Chemical Control =**   1. Thiophanate\_Methyl 2. Bordeaux\_Mixture 3. Thiram |
| **CQ11**: What is the application rate of “Bavistin” to control (*Inflorescence rot disease)*? | **Application Rate =** 100-150 g/100 L water, about (10 L) of pesticide. |
| **CQ12**: What is the application rate of “Mancozeb” to control (*Back Scorch disease*)? | **Application Rate =** 250-300 g/100 L water, about (10 L) of pesticide. |
| **CQ13**: What is the application rate and method of “Cypermethrin” to control (*Rhynchophorus Ferrugineus*)? | **Application Rate =** 100 ml /100 liters of water.  **Application Method =** Spraying. |
| **CQ14**: How to apply "Sodium hypochlorite" to control (*Fusarium wilt disease*)? | Usage Description =  “Used when pruning trees by dipping the pruning shears in the Sodium hypochlorite solution”. |
| **CQ15**: For which disease or pest "Methyl Bromide" used? | Disease/Pest =   1. Bayoud disease 2. Fusarium wilt disease |
| **CQ16**: What is "Metalaxyl-M" and for which disease or pest used? | Control Method Definition =  “Metalaxyl is an acylalanine fungicide with systemic function.”  Disease/Pest =   1. Back Scorch disease 2. Inflorescence rot disease |
| **CQ17**: What is the suitable chemical control of  (*Graphiola leaf spot disease*)? | **Chemical Control =**   1. Copper\_Hydroxide 2. Maneb 3. Bordeaux\_Mixture 4. Mancozeb |
| **CQ18**: What is the suitable cultural control of  (*Graphiola leaf spot disease*)? | Cultural\_Control =   1. Follow the appropriate distance between palm trees. 2. Remove and burn of infected leaves. |
| **CQ19**: What is the suitable biological control of a (*Longhorn date palm stem borer damage*)? | **Biological Control =**  Metarhizium\_Anisopliae  Beauveria\_Bassiana  Rhabdits\_Blumi |
| **CQ20**: What is the application rate and method of “Methidathion” to control (*Rhynchophorus Ferrugineus*)? | **Application Rate =** 150 ml /100 liters of water.  **Application Method =** Spraying. |
| **Symptom** | **CQ1**: What are the possible symptoms associated with (*Fusarium wilt disease*)? | Symptom =   1. Dark brown stripe on leaf rachis. 2. Wilting on one side of leaf. 3. Leaf become yellow white on one side. 4. Rapid wilting of offshoots. 5. Root rot. 6. Leaves hangs down along the trunk. 7. Leaves becomes arched. |
| **CQ2**: What are the possible symptoms associated with (*Red palm weevil damage*)? | Symptom =   1. Leaf becomes yellow. 2. Oozing of brownish fluid with typical fermented odor. 3. Tunneling of palm tissue . 4. Wilting of offshoots. 5. Holes that look chewed and broken on leaf 6. Small round holes at the site of removed offshoots. 7. Ejection of chewed-up fibers from wounds. 8. Toppling of the Trunk 9. Drying of leaf and fruit bunch 10. Offshoot becomes yellow. 11. Drying of offshoots. 12. Death of offshoot. 13. Wilting of leaf. |
| **CQ3**: What are the possible symptoms associated with (*Inflorescence rot disease*)? | Symptom =   1. Rot of young green fruit. 2. Brown or rusty spots. 3. Partial or complete destruction of flowers and spikelets. 4. Inflorescences covered with pink or white or black powder. 5. Drying of inflorescence. 6. Rot of flowers and spikelets. |
| **CQ4**: What are the possible symptoms associated with (*Back Scorch disease*)? | Symptom =   1. Death of leaflet from the tip backwards. 2. Trunk rot. 3. Malformation and twisting of leaves. 4. inflorescence blight. 5. black rot on inflorescence. 6. Leaf with scorched or charcoal like appearance. 7. Root rot. 8. Dark brown or black hard lesions on leaves. 9. Terminal bud rot and blackening. 10. Round to oblong dark brown spots. 11. Diminishes growth of new leaves. |
| **CQ5**: What are the possible symptoms associated with (*Graphiola leaf spot disease*)? | Symptom =   1. Yellow pustules that turn black on lower old leaves. 2. Drying of leaves. 3. Subepidermal spots on both sides of leaflet and rachis. |
| **CQ6**: What are the most common general symptoms of plant disease or pest damage? | **Most Common** Symptom =   1. Die\_Back 2. Blight 3. Dryness 4. Spotting 5. Dwarfing 6. Shot\_Hole 7. Downy\_Mildew 8. Canker 9. Spores 10. Rust 11. Mildew 12. Death 13. Exudation 14. Powdery\_Mildew 15. Wilting 16. Ejection 17. Necrosis\_Lesion 18. Scorch 19. Puncture 20. Damping\_Off 21. Malformation 22. Discoloration 23. Rotting 24. Pustule 25. Streaking 26. Boring 27. Gummosis 28. Transformation 29. Breaking |
| **CQ7:** What is the “Die\_Back” symptom means? | Symptom Definition = “Progressive death of shoots, branches and roots generally starting at the tip.” |
| **CQ8**:What is the “Blight” symptom means? | Symptom Definition = “Sudden, severe, and extensive spotting, discoloration, wilting, or destruction of leaves, flowers, stems, or entire plants.” |
| **CQ9**: What is the “Discolouration” symptom means? | Symptom Definition = “The change in the normal colour of the plant/plant part to a different colour.” |
| **CQ10**: What is the “Scorch” symptom means? | Symptom Definition = “Any symptom that suggests the action of flame or fire on the affected part, often seen at the margins of leaves; “Burning” of leaf margins as a result of infection or unfavourable environmental conditions.” |
| **CQ11:** What are the distinct characteristics of "Wilting" symptom? | Symptom Characteristic =   1. Drying of young growing tip or the whole plant. 2. Leaves become flaccid. 3. Leaves become yellow. 4. Leaves droop down. 5. Leaves lose their turgidity. 6. Sick or weak appearance. |
| **CQ12**: What are the distinct characteristics of " Scorch" symptom? | Symptom Characteristic =   1. Browning of leaf edges or veins. 2. Diminishes growth of new leaves. 3. Charcoal-like appearance of affected plant part. 4. Death of leaflet from the tip backwards. |
| **CQ13**: What are the distinct characteristics of " Shot\_Hole" symptom? | Symptom Characteristic =   1. Circular or irregular scorched holes. 2. Formation of localised lesions on leaves. |
| **CQ14**: What are the distinct characteristics of "Gummosis” symptom? | Symptom Characteristic = Production of gum. |
| **CQ15**: What are the distinct characteristics of " Blight” symptom? | Symptom Characteristic = Burnt-like appearance to affected plant part. |
| **Causal Agent** | **CQ1**: What is the scientific name of major agents of (*Inflorescence rot disease*)? | Major Agents Scientific Name =   1. Alternaria alternata. 2. Thieaviopsis\_Paradoxa\_(De\_Seyn.) \_Hohn. 3. Alternaria chlamydospore. 4. Fusarium moniliforme J. Sheld. 5. Mauginiella\_Scattae\_Cav. |
| **CQ2**: What is the scientific name of major agents of (*Black scorch disease*)? | Major Agents Scientific Name =   1. Ceratocystis\_Paradoxa\_(Dade)\_C.Moreau. 2. Chalara\_Paradoxa\_(De\_Seyn.)\_Sacc. |
| **CQ3**: What is the scientific name of major agents of (*Ganoderma butt rot disease*)? | Major Agents Scientific Name =   1. Ganoderma zonatum. 2. Ganoderma Tornatum (Pers.) Brisad. 3. Ganoderma boninense. |
| **CQ4**: What is the scientific name of major agents of (*Anthracnose disease of date palm*)? | Major Agents Scientific Name =   1. Colletotrichum\_Gloeosporioides\_(Penz.)Sacc. |
| **CQ5**: What is the scientific name of major agents of (*Diplodia leaf-base disease*)? | Major Agents Scientific Name =   1. Diplodia phoenicum (Sacc.) Fawc. & Klotz. |
| **CQ6**: What is the scientific name of major agents of (*Fusarium wilt disease*)? | Major Agents Scientific Name =   1. Fusarium Oxysporum Schlecht. |
| **CQ7**: What is the scientific name of major agents of (*Reddish brown parallel spot disease*)? | Major Agents Scientific Name =   1. Curvularia australiensis. 2. Curvularia spicifera. |
| **CQ8**: What is the scientific name of major agents of (*Date palm Dubas bug damage*)? | Major Agents Scientific Name =   1. Ommatissus lybicus de Bergevin. |
| **CQ9**: What is the scientific name of major agents of (*Lesser date moth damage*)? | Major Agents Scientific Name =   1. Batrachedra amydraula Meyer. |
| **CQ10**: What is the scientific name of major agents of (*Palm frond borer damage*)? | Major Agents Scientific Name =   1. Phonopate frontalis (Fahs.) |
| **CQ11**: What is the scientific name of major agents of (*Longhorn date palm stem borer damage*)? | Major Agents Scientific Name =  Jebusaea hammerschmidti. |
| **CQ12**: What is the scientific name of major agents of (*Mealy bugs damage*)? | Major Agents Scientific Name =  Maconellicoccus hirsutus (Green). |
| **CQ13:** What are the most common type of biotic factors that contribute to the emergence of a plant disease/damage? | **Biotic Factors =**   1. Fungi 2. Virus 3. Nematode 4. Protozoa 5. Viroid 6. Parasitic\_Plant 7. Bacteria 8. Phytoplasma 9. Pest\_Insect 10. Pest\_Mite |
| **CQ14**: What are the environmental factors that contribute to the emergence of *(Inflorescence rot disease*)? | **Environmental Factors =**   1. High humidity 2. 15-21°C in spring 3. Low temperature 4. Cold and wet winter 5. Heavy rain in winter and spring |
| **CQ15**: What are the environmental factors that contribute to the emergence of (*Black scorch disease*)? | **Environmental Factors =**   1. High humidity 2. High soil moisture 3. Silty soil 4. Moderate temperature (25°C) 5. Rain |
| **CQ16**: What are the environmental factors that contribute to the emergence of the insect (*Rhynchophorus Ferrugineus*)? | **Environmental Factors =**   1. High humidity 2. High soil moisture |
| **CQ17**: What are the agricultural practices that contribute to the emergence of (*Fusarium wilt disease*)? | **Agricultural Practices =**   1. Bad drainage. 2. Increase irrigation water. 3. Increased nitrogen fertilization. |
| **CQ18**: What are the agricultural practices that contribute to the emergence of the insect (*Red palm weevil damage*)? | **Agricultural Practices =**  Closely spaced planting.  Beheaded palms.  Open flood irrigation.  Neglected plantation.  Closed gardens. |
| **CQ19**: What is the transmission mode of "*Fusarium Oxysporum Schlecht*" fungi that cause fusarium wilt disease? | **Transmission Mode =**   1. Transmitted through infected offshoots. 2. Transmitted through nematode infection. 3. Transmitted through winds. 4. Transmitted through insect infection. |
| **CQ20**: What is the transmission mode of the insect "*Rhynchophorus\_Ferrugineus*" ? | **Transmission Mode =**   1. Transmitted through infected offshoots. 2. Transmitted through Infested planting material. |
| **Others** | **CQ1**: What is the active time of the insect "*Rhynchophorus\_Ferrugineus*" ? | **Outbreak Time =**   1. February 2. October 3. September 4. March |
| **CQ2**: What is the expected outbreak time of *(Inflorescence rot disease*)? | **Outbreak Time =**   1. February 2. March |
| **CQ3**: What varieties or cultivars are most susceptible to (*Black scorch disease*)? | **Susceptible Cultivars =**   1. Halooa 2. Zahdi 3. Barhi 4. Hallawi 5. Deglet\_Nour 6. Medjool |
| **CQ4**: What varieties or cultivars are most susceptible to (*Fusarium wilt disease*)? | **Susceptible Cultivars =**   1. Dakhini 2. Nbut\_Saif 3. Khediri |
| **CQ5**: What varieties or cultivars are most susceptible to *(Inflorescence rot disease*)? | **Susceptible Cultivars =**   1. Sayer 2. Sukari 3. Barhi 4. Medjool 5. Ghars |
| **CQ6**: What varieties or cultivars are most susceptible to *(Graphiola leaf spot disease*)? | **Susceptible Cultivars =**   1. Zahdi 2. Maktoom 3. Ashrasi 4. Khisab 5. Bream |
| CQ7: What are the possible affected plant parts by (Graphiola leaf spot disease)? | Affected Plant Part =   1. Leaf rachis 2. Old leaves 3. Leaflet |
| **CQ8**: What are the possible affected plant parts by *(Inflorescence rot disease*)? | Affected Plant Part =   1. Date 2. External surface of unopened spathe 3. Spikelets or Strands 4. Flowers 5. Palm inflorescence |
| **CQ9**: What are the possible affected plant parts by *(Red palm weevil damage*)? | Affected Plant Part =   1. Leaves 2. Palm trunk 3. Leaf bases 4. Fruit bunch 5. Outer leaves 6. Offshoots |
| **CQ10**: What are the possible affected plant parts by (*Longhorn date palm stem borer damage*)? | Affected Plant Part =   1. Leaf bases 2. Palm trunk |