

MANAGEMENT OF GANODERMA DISEASE IN OIL PALM FARM

Objectives

- To avoid infection due to *Ganoderma* by decreasing the source of the disease in the farm.
- Prolong the production period of *Ganoderma* disease infected oil palm trees

1. What is *Ganoderma* Disease?

Fungi causing disease that resulted in the infection and rotting of the stem, roots or trunk base of palm trees. It is often referred to as one of a kind of white root disease, owing to the colour of the fungal hypha.

2. What danger does *Ganoderma* Disease pose?

- Loss of oil palm trees
- Decrease of the fruit production of oil palm
- Risk of palm trees toppling, in particular during high winds and storms

3. What type of fungi causes *Ganoderma*?

There are 3 types or species of fungi that cause *Ganoderma* disease on oil palm trees. The three fungi species are *Ganoderma boninensis*, *Ganoderma zonatum* and *Ganoderma miniatocinctum*.

4. What is the difference between Basal Stem Rot (BSR) and Upper Stem Rot (USR)?

Both infections can be caused by *Ganoderma* fungi. The differences are:

- BSR is referred to the infection point at a height level of 1 meter or below from the base of the palm tree;
- USR is referred to the infection point at a height level of more than 1 meter from the base of the palm tree.



Diagram 1. *Ganoderma* fungus bracket on the oil palm stem



Diagram 2. Various growth stages of *Ganoderma* fungus

5. How does this disease transmit?

- i) By direct contact with the infectious tissue.
- ii) By the growth of the fungi spore.

6. Why *Ganoderma* Disease in Oil Palm Farms becoming more widespread?

- i) Tissues or remains of *Ganoderma*-infected stems / large roots/ base of stems is not destroyed
- ii) New oil palm trees are planted too close to the remains of *Ganoderma*-infected stems / large roots/ tree bases or living infected trees.
- iii) In-filling new plants under an oil palm or an aged coconut tree.
- iv) Plant or bury the remains of *Ganoderma* infected stems/ roots/ tree bases underground.
- v) *Ganoderma* fungus brackets were not collected and destroyed.
- vi) During the replanting operation, the stems and trunks of oil palm trees are not shredded and spread on the ground to be exposed to the sun.
- vii) Farmers are not aware of the long-term benefits of managing *Ganoderma* disease.



Diagram 3. Infilled young oil palm planted near a *Ganoderma* infected tree



Diagram 4. Young oil palm tree is planted near the old planting point of an old dead tree

7. Symptoms that indicate a Palm Tree has been infected by *Ganoderma* Disease



Diagram 5. Symptom: The lower leaves droop like a skirt



Diagram 6. Symptom: Multiple shoots or spears (more than 3 spears) especially during the rainy season



Diagram 7. Symptom: Rot and perforated hole in the stem



Diagram 8. *Ganoderma* fungus brackets can be seen on the stem



Diagram 9. Symptom: Light green coloured/ Yellowish leaves; Multiple shoots or spears (more than 3 spears) especially during the rainy season



Diagram 10. The darker brown coloured section is infected by *Ganoderma* and causing the stem tissue to die.