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Ganoderma* Stem Rot and its Management on First Generation Oil Palm on Peat

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*The study was based on 70 000 ha first generation oil palm planted on logged-over tropical peat forest in Riau, Indonesia. Oil palm planting was carried out over a period from 1997 till 2004. *Ganoderma* infection was first detected in 2006 in the 1997 and 1998 plantings (about 8-9-year-old palms). The main species identified were *Ganoderma boninense* and *Ganoderma zonatum*, generally in a ratio of about 1:1. In some areas *G. boninense* was more common. Both species were often found on the same infected palms. Higher infection was seen in over-drained peat dome areas with water level more than 75 cm below the peat surface. In areas with optimal water table (50-75 cm from the peat surface) infection level was relatively lower.*

Appearance of fruiting bodies (basidiomata) and lesion cavities are usually seen on the exposed roots or basal region of the infected palms, generally referred to as basal stem rot (BSR). However about 20-30 per cent of the infected palms showed fruiting bodies and lesion cavities on the middle region of the palm trunks, termed here as middle stem rot (MSR).

*Due to the relatively good moisture availability in peat, the early foliar symptoms of drooping lower fronds and several unopened spears commonly seen on mineral soils were not generally exhibited on *Ganoderma* infected palms on the peat area. The early stage of infection is therefore taken when fruiting bodies are seen on the basal or middle stem region. When the stem rot occurs on more than 50 per cent of the circumference of the base or infected trunk, the infection is considered to be in the advanced stage.*

Field trial showed that 4 m x 4 m x 75 cm deep isolation trenches around early infected palms are effective in minimising spread to the neighbouring healthy palms. For palms in the advanced stage of infection or fallen palms, construction of sanitation pits (2 m x 2 m x 1 m depth) was used to contain the spread of the disease. The excavated infected bole and root tissues are cut into smaller pieces and placed next to the harvesting paths to decay.

*Due to the high cost of constructing sanitation pits and cutting the infected bole and root tissues into smaller pieces, a trial was conducted to expedite the in-situ decomposition of the infected tissues without excavation. Application with decanter solid, a by-product from palm oil mills, was able to attract more fungal and biological activities that enhance the breakdown of the *Ganoderma* infected tissues. Early results seem promising and a combination of isolation trench and in-situ decomposition of the infected stump is being tested to replace the more expensive sanitation pit for *Ganoderma* management on peat.*

Keywords: *Ganoderma stem rot, peat, management, isolation trench.*