



# The OPRAtive Word

Technical Note 8  
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## A Field Guide for the Identification of *Ganoderma* on Oil Palm & Coconut

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### INTRODUCTION

There are two types of *Ganoderma* that grow on oil palm (*living and dead*) and dead coconut. The 'palm' type, *Ganoderma boninense*, is the major pathogen on oil palm and is commonly found in large numbers on dead coconut logs. The 'forest' type, *Ganoderma tornatum*, grows mainly as a saprophyte on coconut and oil palm logs & stumps. It is also very common on hardwood logs. This species may sometimes act as a mild pathogen on oil palm, however it does not pose a significant threat. This guide will assist field staff to distinguish the two species.

### THE 'PALM' TYPE - *Ganoderma boninense*

#### UPPER SURFACE

**Appearance:** Shiny (*like varnish*). If it's covered in spores or old it will look dull. Wipe it with a wet cloth. Sometimes has a white margin (*edge*) and concentric ridges (*zonations*).

**Shape:** Shell-like, front edge is (*usually*) wider than the back. Bracket sometimes has a stalk.

**Colour:** Reddish-brown to very dark brown, almost black. Some specimens may have an orange colour.

**Texture:** Leathery when fresh. Hard when dry, but easily scratched with a knife. When scratched the colour is rust/orange and rough.

*G. boninense* White margin and no stalk

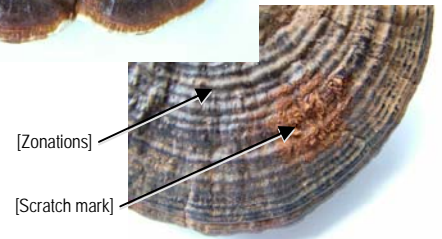


*G. boninense* with stalk and incurved margin



*G. boninense* with spore layer on bracket

*G. boninense* scratched



[Zonations]

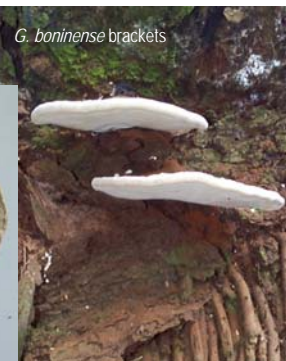
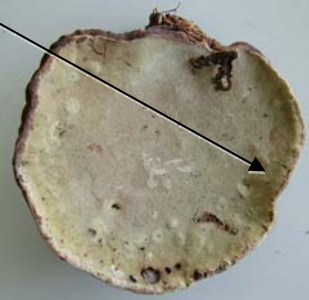
[Scratch mark]

#### LOWER SURFACE

**Form:** Usually flat, thickening very slightly towards the back. Thinner at the margin (*edge*). When dry the margin will curve (*under*) inwards. Pores can be seen

**Colour:** White to cream when young and fresh. Has a yellowish tint when dry. Colour when bruised with fingertips or scratched with fingernails is dark brown.

*G. boninense* underside



*G. boninense* brackets

*G. boninense* underside bruised



#### SPORE PRINT

**Colour:** Dark chocolate-brown. Has a lighter brown colour when the spore print is not dense. Looks darker when spores are wet. Allow to dry before comparing with *G. tornatum*.

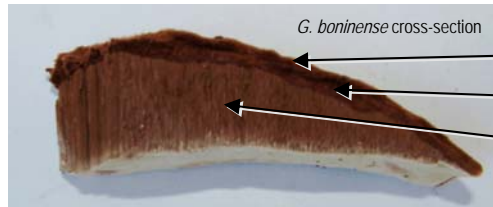
*G. boninense* spore print



#### OTHER FEATURES

**Cross-section:** When cut, tubes are clearly visible and brown-light brown. Context (*area above the tubes*) is reddish brown in colour.

*G. boninense* cross-section



[Pilius (*outer skin*)]

[Context (*spongy leathery layer*)]

[Tubes]

## THE 'FOREST' TYPE - *Ganoderma tornatum*

### UPPER SURFACE

**Appearance:** Dull. If it is wet it will look shiny. Let it dry. Sometimes has a white margin (*edge*). Has concentric ridges (*zonations*) or bumps (*in older specimens*).

**Shape:** Fan-like, semi-circular (*usually*) with rounded margin. Rarely has a stalk. In old specimens, or specimens from hardwoods or coconut, surface is deformed.

**Colour:** Olive-brown to brown. With spores on the surface it will look reddish or light brown; wash them off.

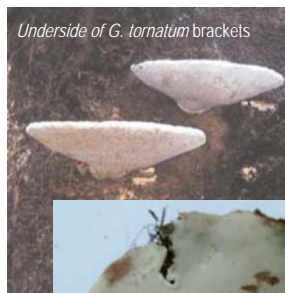
**Texture:** Tough when fresh (*not easily bent*). Very hard when dry. Hard to scratch with a knife, when scratched colour becomes dark brown and looks shiny.



### LOWER SURFACE

**Form:** Angular, much thicker at the back than at the margin. Sometimes the margin appears to turn upwards. Pores can be seen.

**Colour:** White to grey when fresh. Off-white to tan when dried. Colour is brown when bruised with fingertips. Specimens from oil palm may have a yellow tint when dry.



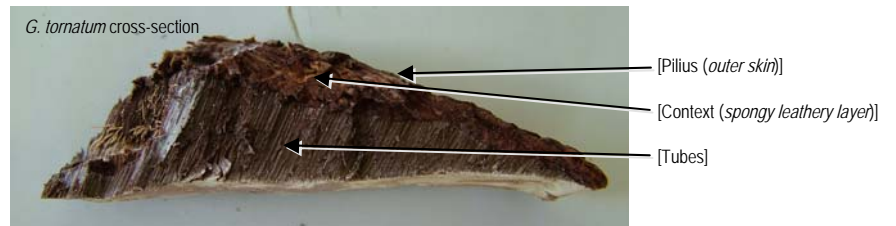
### SPORE PRINT

**Colour:** Brown to dark brown when seen in bright sunlight. Appears dark brown when wet or dense. Allow to dry before comparing with *G. boninense*



### OTHER FEATURES

**Cross-section:** When cut, tubes are visible but closer together than in *G. boninense* and are dark brown in colour. Context (*area above tubes*) is brown.



### NOTES:

- 1) To obtain a SPORE PRINT, suspend a piece of clean white paper 1cm beneath the pores of the fruiting body. Leave for 1-5hr. Allow to dry completely. Compare the colour to that shown.
- 2) BRUISING – press down hard on the under surface of the fruiting body with your thumb. Allow to dry.
- 3) *Ganoderma* taxonomy is not static, species names may change.

For further information contact:

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