


**DID YOU KNOW?**

# Green Muscardine Fungus (*Metarhizium anisopliae* Sorok)

Is a soil-borne entomopathogenic fungus which is \*epizootics in nature and adaptable to temperate climatic conditions. It penetrates the host body and cause virulence. It also produces secondary toxins Destruxin A and E repressing the host immune system and deploying \*evasive MCl1 protein that is collagen-like to avoid detection. If detected, an array of recognition molecules detects the pathogen resulting to the initiation of Toll and immune deficiency (Imd) pathways. It regulates the anti-fungal and antibacterial defenses respectively.

**Epizootic-** an outbreak of disease affecting many animals of one kind at the same time.

**Evasive-** intended to evade.

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It has green sporulating colonies and was first used against wheat grain beetle in 1897. It can infect around 200 insects and arthropods. It enters the insects through spiracles and pores. It produces a lateral extension of the hyphae consuming the internal contents and sporulates.

## How can we identify an infected pest?

The fungus grows out of the insects' integument and forms reproductive structure (conidiophores) after death. Initially fungal hyphae appear white but when it matures shows olive green color characteristics.



Rice black bug



Red locust



Weevil



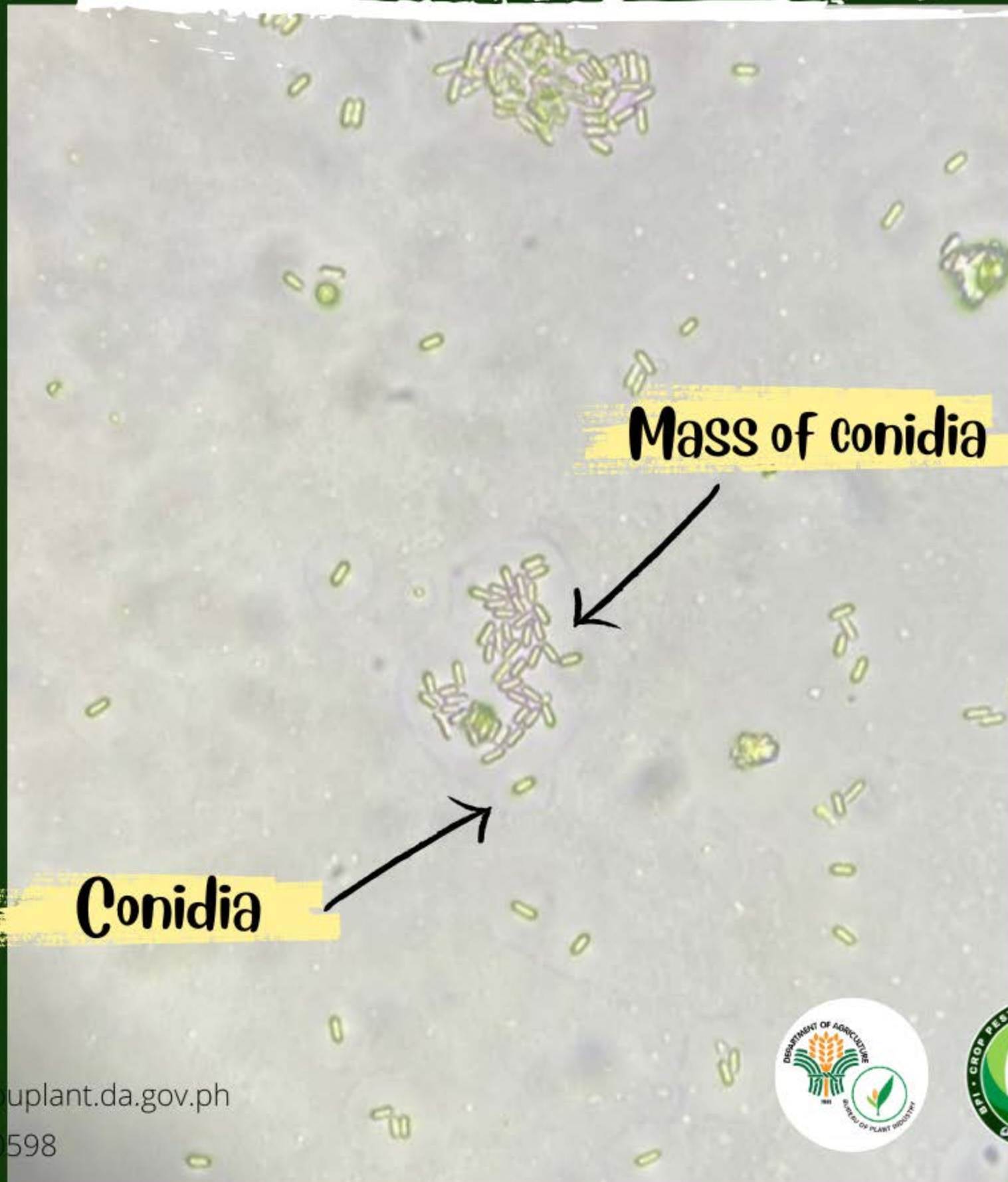
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# How do it look like under a microscope?



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# factors to consider in field application?

- degree of virulence of the fungus
- Microenvironment (temperature, humidity, light)
- quality and quantity of the product
- application methods

## Precautions:

The *Metarhizium* does not appear to infect humans or other animals, and is considered safe as an insecticide.

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# How to apply in the field?




1. Make soap solution by adding 0.5 g detergent powder/liter of water.




2. Prepare suspension by putting 3 bags *M. anisopliae* into water pail containing 4 liters of water. Mix thoroughly until the fungus is totally washed-off. Strain the *M. anisopliae* solution to avoid clogging of the sprayer.



3. Add 4 liter of the strained *M. anisopliae* solution into 12 liters of water (1 spray load) (for Rice Black Bug)
4. Spray the suspension on the leaves of the corn
5. Use 25- 30 bags *Metarhizium*/ ha or 10 spray load/ha. (For Rice Black Bug)

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