

# Oyster Mushroom Cultivation

## Part II. Oyster Mushrooms

### Chapter 8

#### Pest and Disease Management

## VIRAL DISEASE

Viral disease in oyster mushroom has not been well documented. However, they occur sporadically and cause huge losses in some mushroom farms.

### Causing Agents

- Two isometric viruses, OMIV-I and -II (oyster mushroom isometric virus I and II) were isolated from oyster mushrooms showing viral disease symptoms.
- Virus particle sizes of both viruses are same as 30 nm at diameter. Coat proteins and ds-RNAs that the viruses contain are different.
- Except these two viruses, the same size of cryptic virus was found in healthy oyster mushroom. The third virus is also isometric and 30 nm in size.

### Symptoms

- Typical symptoms of viral disease on oyster mushroom are quite similar to 'La France disease' which is a well-known viral disease in button mushrooms (*Agaricus bisporus*).
- Delay in fruiting body formation, shortening in stipe, abnormal shape and thin mushroom caps are the major symptoms (Fig. 1b, 1c, 1d). Fruiting bodies are not formed at all on some infected mushroom beds.
- The viral-infected hyphae grow very slowly on agar and their density is very low (Fig. 1f).



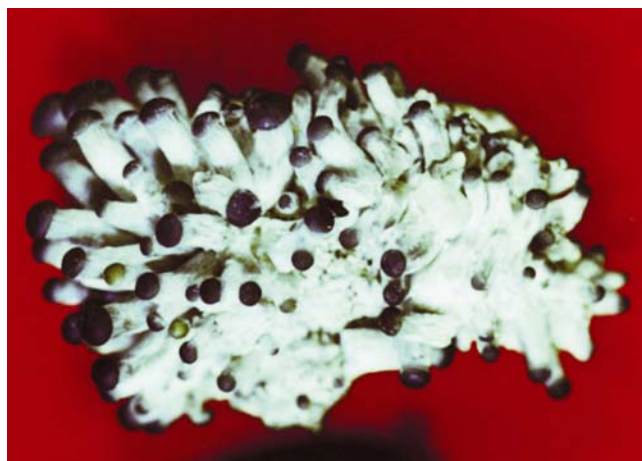
A. Healthy oyster mushrooms



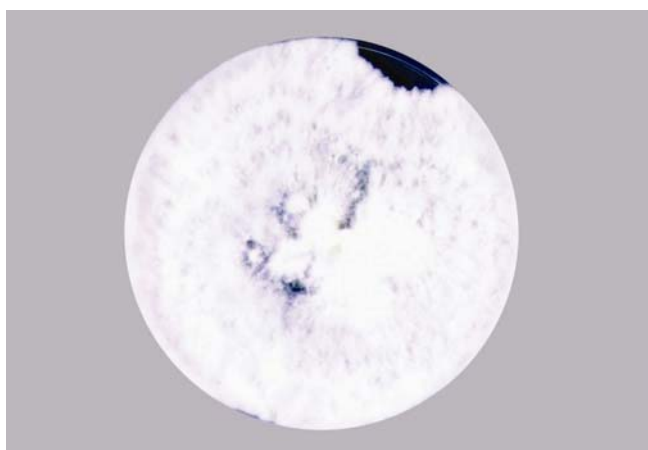
B. Viral-infected mushrooms



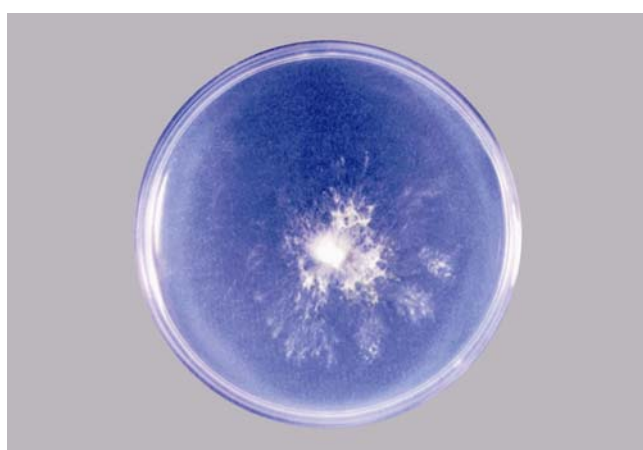
C. Viral-infected mushrooms



D. Viral-infected mushrooms



E. Healthy culture on agar plate



F. Viral-infected culture

Figure 1. Healthy and viral-infected oyster mushrooms and culture (Photo courtesy of Hyun-Suk Lee)

## Ecology

The ecology of viral disease in oyster mushrooms is not known at all so far. For La France disease, a known viral disease of button mushroom, it has been known that basidiospores mediate the spread of the virus. How this virus is spread in oyster mushrooms is not yet known.

## Control Measures

- Viral diseases cannot be cured in infected mushrooms by any cultural or chemical treatment. Prevention is only the way of control the viral diseases.
- Use healthy spawn. Prepare spawn using virus-free strain. Do not use any culture containing the viral particles.
- Clean and disinfect thoroughly the growing house in which any viral disease occurred. It has not been proven yet, but spores or mycelium of viral infected mushrooms can transfer the viral disease in a manner similar to the spread of La France disease of the button mushroom.