

## **Neck rot on allium**

*Botrytis aclada* (= *B. allii*)

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*Botrytis aclada* (synonymous to *Botrytis allii*) is the causative agent of neck rot in onion, garlic, leek and shallot. Neck rot is mainly a storage disease, although infection originates in the field as described for *Botrytis blast*. The incidence of neck rot in Indonesia is unknown

### **Symptoms and damage**

- During the growing season plants are usually symptomless. Symptoms occur mainly in storage
- Symptoms starts in the neck area with a semiwatery decay
- As decay progresses, scales weaken and become water-soaked. Finally the entire bulb may be decayed
- Decayed tissue is often sunken (Fig. )
- Between scales and a gray whitish mycelium may be appear
- Sclerotia may be formed on the outer scales on the shoulders

In the USA, post harvest losses due to neck rot were up to 30%.

### **Survival and dissemination**

- The pathogen is seedborne and can survive on seed for at least 3 years at 10 °C and 40% RH. External and internal infections have been observed.
- The fungus is also soilborne and survives as sclerotia in rotting bulbs or free in soil
- It can also be transmitted by (symptomless) infected bulbs and transplants.
- At high moisture conditions sclerotia in soil or in outer scales of infected bulbs start to sporulate
- Alternatively, it sporulates on dead or dying leaf tissue under prolonged moisture conditions
- Spores are transmitted by wind
- *Fusarium* can also be transmitted via true seed
- Soil infested with chlamydospores (7.5-10 µm in diameter), adhering to plant parts can also disseminate the pathogen. Chlamydospores can persist for a long time in soil
- Disease incidence increases by insect damage
- The pathogen also produces microconidia (unicellular) and macroconidia (fusiform or ellipsoid, 3-4 septate).

- In mature plants infections remain in the basal plate area for some time before spreading to the fleshy bulb scales and causing decay
- Spread during storage is not significant

### ***Prevention and cure***

#### Cultural practices

- Use certified pathogen-free plant bulbs, and disease-free transplants
- Grow in well-drained pathogen-free soil, in places where air circulation is good
- Avoid the use of overhead irrigation; drip irrigation is preferred. If used, allow crops to dry quickly
- Lower the density of transplanted crops
- Treat seed with hot water or a fungicide before planting
- Avoid working around plants when the foliage is wet
- Eradicate weeds, in particular members of the onion family that can host *Fusarium*
- Control insects, to prevent wounding
- Strive to maintain a balanced fertility.
- Eliminate allium cull piles and burn or deeply plow plant debris. Practice crop rotation (allium species only every 4 years)
- Use of resistant cultivars
- Storage of bulbs at low temperature (4 °C) decreases incidences

#### Chemical control

In the USA, two pre-layby treatments with Topsin M was sufficient to control *B. aclada*



Fig. 3. Infected bulb tissue appear sunken



Fig. 3. Scape blight



Fig. 3. Soilline rot

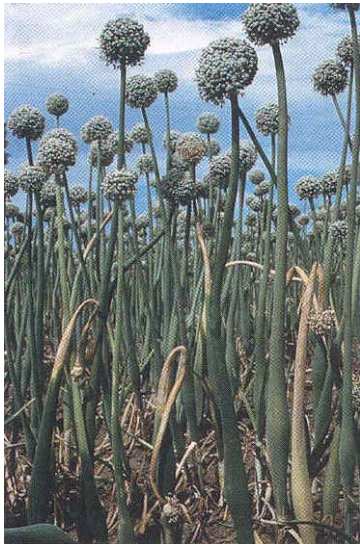


Fig. 3. Transsection of rotted bulb

