

Choanephora blight of potatoes and other crops grown under tropical conditions in Peru

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Accepted 27 December 1978

Additional keywords: *Choanephora cucurbitarum*, *C. conjuncta*, *C. circinans*, cowpea, soybean.

As part of a breeding program of the International Potato Center on adaptation of potatoes to hot and moist tropical lowland conditions, potatoes have been grown at Yurimáguas in the Amazon basin in Peru since 1975 (Mendoza, 1976).

A destructive blight found associated with *Choanephora cucurbitarum* (Berk. & Rav.) Thaxter and, to a lesser extent, with the closely related species, *C. conjuncta* Couch and *C. circinans* (Naganishi & Kawakami) Hesselt. & C. R. Benj. has been commonly observed. These fungi have been identified according to descriptions by Fitzpatrick (1930), and Hesseltine and Benjamin (1957). The same fungi are also found to severely attack soybean and cowpea during the rainy season (Fig. 1); they are probably the main limiting pathogens for many crops during the rainy season at that location. *C. cucurbitarum* was found to be highly pathogenic to potato plants inoculated with a spore suspension and incubated in plastic bags at temperatures that fluctuated daily between 24 and 30 °C. Within two days the typical sporangiophores appeared.

Symptoms start mostly at the leaf margins and leaf tips as water-soaked lesions which later become dry and turn olive-green to light brown. In this stage the lesions show a close resemblance to mineral oil damage. During dry weather, sporangiophores 4 to 5 mm long develop and release spores within a few hours. At this stage, symptoms are very typical due to large numbers of the relatively long, spiny sporangiophores on the affected tissues of leaves and stems (Fig. 2). On petioles and stems, initial symptoms are small,

Fig. 1. *Choanephora cucurbitarum* affecting pods of cowpea.

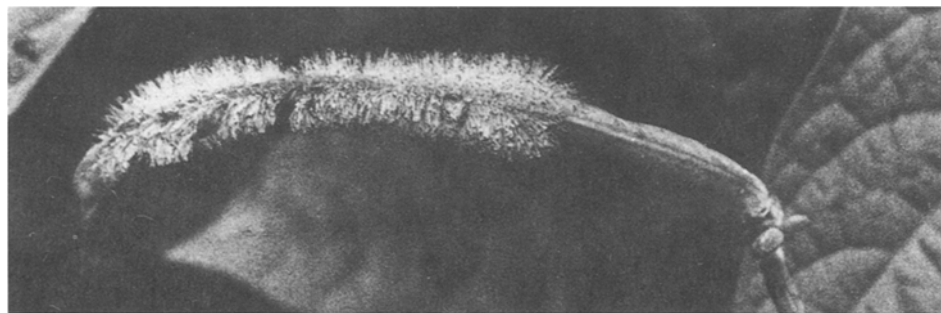


Fig. 1. Aantasting van vignapeulen door *Choanephora cucurbitarum*.

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Fig. 2. *Choanephora cucurbitarum* affecting potato leaves. Note the typical long sporangiophores on leaflets.



Fig. 2. Aantasting van aardappelblad door *Choanephora cucurbitarum*. Typische lange sporangiëndragers op de blaadjes.

light brown, elongated spots which increase in size and coalesce. From affected petioles the fungus enters leaflets and stem tissues. The affected tissues colour dark brown, shrink, and disintegrate, causing petioles and stems to bend and fall over. In a more advanced stage, the plant becomes completely necrotic. The speed with which the disease develops in the crop is comparable to that of *Phytophthora infestans*. Experience so far indicates that there are considerable differences in susceptibility between families and between clones of the breeding materials of potato exposed.

Samenvatting

Choanephora-ziekte van aardappel en andere gewassen in het tropische laagland van Peru

In het kader van een veredelingsprogramma voor de aanpassing van de aardappel aan de teelt in het warme, vochtige tropische laagland worden sinds 1975 aardappels verbouwd op een proefveld te Yurimáguas in het Amazonebekken van Peru. Vanaf het begin is veelvuldig een ernstige aantasting van het loof waargenomen veroorzaakt door *Choanephora cucurbitarum* en enkele nauwverwante soorten. Het ziektebeeld is gekenmerkt door lesies die zich aanvankelijk van bladranden en bladspitsen uitbreiden, waarbij aangetaste weefsels eerst waterig worden en daarna uitdrogen en een olijfgroene kleur aannemen. Bij droog weer worden vier tot vijf mm lange sporangiëndragers gevormd op de aangetaste delen en ontstaat het voor de ziekte zo kenmerkende beeld (Fig. 2). Dezelfde schimmel is ook gevonden op andere cultuurgewassen (Fig. 1) en is ter plaatse waarschijnlijk de meest beperkende factor voor vele gewassen gedurende regenrijke perioden.

References

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