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# Ascochyta phaseolorum synonymous with Phoma exigua

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Numerous samples of beans with symptoms of leaf spot or blotch ascribed to *Ascochyta phaseolorum* Sacc. (cf. Hubbeling, 1955) were received at the diagnostic department of the Plant Protection Service; pure cultures were indistinguishable from those of *Phoma exigua* Desm. This pycnidial fungus is most frequently encountered on leaves, stems and roots of herbaceous plants; its diagnostic characteristics were described by Boerema and Höweler (1967). It can be characterized as a weak parasite or as a wound parasite and appears to be a ubiquitous soil-borne organism. The hyaline conidia of this fungus are continuous or 1- (occasionally 2-) septate. In vivo often a high percentage of the conidia is 1-septate, whereas in vitro the majority of the conidia is always continuous. According to Saccardo's system of classification the species could be placed in different form-genera of the Sphaeropsidales, as appears also from the various synonyms listed for it by Boerema and Höweler (l.c.) and van der Aa and van Kesteren (1971). In modern taxonomy the primary character for the separation of genera is considered to be conidium ontogeny. Because the conidia originate from undifferentiated conidiogenous cells by a monopolar repetitive budding process (Brewer and Boerema, 1965; Boerema, 1970), the fungus is a characteristic *Phoma* species. Septation of conidia in species of *Phoma* is a secondary process (euseptation) and occurs independently of the conidiogenesis (Boerema l.c.).

In 1958 Crossan showed that cultures of *A. phaseolorum* isolated in the USA (North Carolina Agricultural Experiment Station, Raleigh) from beans were morphologically, physiologically and pathogenically similar to isolates obtained from other plants e.g. soybean, cowpea, okra, cotton, hollyhock, tobacco, tomato and eggplant. Most of these plants are at present known as common hosts of *Phoma exigua*. Three of the isolates mentioned in Crossan's study (see also Person, 1961) are preserved under the name *A. phaseolorum* in the American Type Culture Collection (ATCC 15418 from lima bean; ATCC 15461 from tobacco and ATCC 15462 from okra). The characteristics of these three strains completely agree with those of *P. exigua*.

Recently Alcorn (1968) in Australia also reported that *A. phaseolorum* appears to have a wide host range, including vegetable crops, weeds and indigenous species. Natural infections were found by Alcorn in 48 hosts in 14 families, and additional 12 species proved susceptible when inoculated experimentally. Most of these plant species are also listed as hosts of *Phoma exigua*. A representative of the isolates made by Alcorn could be studied and showed all the typical characteristics of *P. exigua*.

Finally a recent culture of *A. phaseolorum* preserved at the 'Centraalbureau voor Schimmelcultures' at Baarn, CBS 729.68, also completely agrees with *P. exigua*.

The original specimen of *A.phaseolorum* Sacc. is not known to be in existence, but the original description (Saccardo, 1878) is in full accordance with the interpretation by Hubbeling, Crossan and Alcorn. Therefore *Ascochyta phaseolorum* Sacc. (1878) can be reduced to synonymy with the weak parasite *Phoma exigua* Desm. (1849). The fact that leaf spot (or blotch) of bean is rarely destructive unless the crop has been weakened by unfavourable growing conditions (Sutton and Waterston, 1966) is in accordance with this conclusion.

The names *Ascochyta althaeina* Sacc. & Bizz., *A.nicotianae* Pass., and *A.capsici* Bond.-Mont. listed by Crossan (l.c.) as synonyms of *A.phaseolorum*, and *A.ori* Viéges considered by Alcorn (l.c.) as a synonym of *A.phaseolorum*, are all likely to refer to *P.exigua* (for *A.althaeina* see van der Aa and van Kesteren l.c.). The other species and the 'European isolates' mentioned by Crossan (l.c.) however are different from *P.exigua*.

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**Samenvatting**

*Ascochyta phaseolorum synoniem met Phoma exigua*

Diverse isolaten van *Ascochyta phaseolorum* Sacc., veroorzaker van spikkelziekte bij bonen, afkomstig uit Nederland, de Verenigde Staten van Noord-Amerika en Australië, bleken in cultuur niet te verschillen van de algemeen voorkomende wond- en zwakteparasiet *Phoma exigua* Desm. Geconcludeerd werd dat de schimmel thuishoort in het geslacht *Phoma* en dat *A.phaseolorum* een recenter synoniem is van *P.exigua*.

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