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Isozyme analysis of some *Phoma* - like fungi

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To confirm the identification of the *Phoma*-like isolates based on morphological characters *in vitro*, complementary α-esterase isozyme analyses of fungal extracts were made. Isozyme banding patterns, as produced by electrophoresis, are a reflection of the genetic content of an organism. We applied the PhastSystem® micro-gel electrophoretic device (Pharmacia). The α-esterase isozyme patterns of 26 *Phoma* isolates were determined.

Phoma pinodella is a seed- and soil-borne fungus and causal organism of black stem disease of red clover and foot rot and leaf spot of pea moreover leaf spot of soybean. Identification of *Phoma pinodella* is based on stable *in vitro* morphological characters described on oatmeal, malt and cherry agar using standardized conditions, presence of chlamydospores and characteristic dendritic crystals (pinodellalide A and B), always occurring abundantly in malt agar cultures are also important features of fungus. For *Phoma pinodella* a comparative table, based on the profiles of 11 isolates from different sources (soil, *Phaseolus, Pisum, Glycine*) was made.

α-esterase zymogram of 4 *Phoma sojicola* isolates was different from those of *Phoma pinodella* and *Phoma exigua* var. *exigua* and it confirmed the identification of those isolates which has been determined as '*Ascochyta*' *sojicola* (= *Phoma sojicola*) before.

Analysis of 13 *Phoma exigua* var. *exigua* isolates yielded 5 enzyme loci which could be used as additional feature for identification.

A good progress was made in identification and separation of different *Phoma exigua* varieties: var. *exigua, lilacis, heteromorpha, linicola, inoxydabilis, diversispora and sambuci-nigrae*. More isolates should be examined to determine α-esterase isozyme maps to properly characterise *Phoma exigua* varieties. There are plans to make further isozyme examinations not only for α-esterase but other isozymes as well.

The opinion that *Phoma foveata* is a distinct species, which formerly considered as a variety of *Phoma exigua (P. exigua* var. *foveata*), was confirmed by the help of esterase isozyme pattern.