

## CONTRIBUTION TO THE EARLY DETECTION OF LIGHT LEAF SPOT AND CONTROL METHODS IN WINTER OILSEED RAPE IN GERMANY

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Light leaf spot is at present, next to stem rot (*Sclerotinia sclerotiorum*) an important fungal disease in oilseed rape in Germany. Since its first discovery in 1977 in eastern Germany (AMELUNG & DAEBELER 1979) it has spread nationwide. It appears most often in mild fall and winter. Light leaf spot on oilseed rape (*Brassica napus* L.) is caused by *Pyrenopeziza brassicae* (teleomorph) and more often, through, by the anamorphic form *Cylindrosporium concentricum*. It can cause, depending on the development stage of the oilseed rape, weather situation and location, high losses of yield. Under beneficial weather circumstances it can cause up to 40 % of yield loss.

A definite identification of the disease symptoms of the fungus (anamorph) in early stages in the field is often unsure. A distinctive identification sign are tiny conidiospore accumulations (acervuli) that appear on young leaves, sprouts and later even on pods. It is still unknown in which growth stage (BBCH) of winter oilseed rape the first acervuli can appear.

So it was the aim of this study to identify when and to what extent the first acervuli appear at the early growth stages of winter oilseed rape (here BBCH 13-16). Further, the use of certain fungicidal active ingredients was tested to control the disease in practice as well as cultivar tolerance.

At the Laboratory for Biotechnology and Quality Assurance in Soest, Germany, trials in laboratory, climate chamber and greenhouse were performed with regard to sporulation of the fungus, protective and curative application of selected fungicides and cultivar response (BEINEKE 1994 and BEINEKE 1995).

### Results

Acervuli of *C. concentricum* appeared under controlled conditions irregularly at the very early growth stages of winter oilseed rape (BBCH 13-14). Acervuli appeared much more abundant at BBCH 15-16. First acervuli were visible after 20-28 days past inoculation (dpi) at the earliest with highest numbers in the untreated control after 30-38 dpi. The assessments were carried out by using an assessment scheme on basis of number of acervuli per inoculated leaf. In the experiments it appeared that there was no correlation between occurrence of lesions and occurrence of acervuli.

These experiments showed that the fungicides applied, depending on their active ingredient, had a good protective as well curative effect on *C. concentricum*.

As the official list of plant cultivars of the Bundessortenamt (Federal Plant Variety Office) does not mention the susceptibility to *C. concentricum*, a screening using 10 cultivars (hybrids and lines) was performed. Results showed clear differences with regard to susceptibility to *C. concentricum*.

Precise basic knowledge about the epidemiology of *C. concentricum* in early growth stages of winter oilseed rape and detailed knowledge of sporulation and release of conidia as well as about responses of winter oilseed rape cultivars and the effect of fungicides will enable a targeted monitoring and control of the disease in the field.

Amelung, D.; Daebeler, F., 1979: Untersuchungen zur Biologie und Bekämpfung von von *Cylindrosporium concentricum* Grev. an Winterraps (*Brassica napus* L.), Agrarwissenschaften, Wissenschaftlicher Fachverlag, Gießen, 1, 4-5

Beineke, M., 1994: Untersuchungen zur Biologie und Bekämpfung von *Cylindrosporium concentricum* Grev. an Winterraps (*Brassica napus* L.). Diss. Giessen

Beineke, M.; Paul, V.H.; Schloesser, E., 1995: Investigations on isolate variability of *Pyrenopeziza brassicae* Sutton and Rawlinson (Anamorph: *Cylindrosporium concentricum* Greville), the pathogen of light leaf spot on oilseed rape. Bulletin OILB SROP, Vol. No. 18(4)