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An agar-disc method for testing the germination of conidia of *Erysiphaceae*

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Evaluation of an anti-mildew fungicide "in vitro" has always been difficult. A great help in solving this problem was the method reported by Zaracovitis (1964, 1968). His slide-germination method on slides, coated with cellulose-acetate is of great use in testing anti-mildew fungicides, especially those well soluble in acetone. However not all fungicides used against *Erysiphaceae* are soluble in this solvent (e.g. sulphur compounds etc.). On the other hand, new systemic fungicides developed recently are used in powdery mildews control.

In evaluation of this kind of fungicides it is often of great importance to check the anti-mildew properties of the sap, pressed from plants treated with the fungicide. In such cases the agar-disc technique, developed at the Institute of Organic Industry in Warszawa, Poland, for the evaluation of the sulphur compounds can be useful. The same method has eventually been used in the Plant Pathology Laboratory in Wageningen (Netherlands) for testing the systemic fungicide PP 675 I.C.I. Plant Protection. (Gorska-Poczopko 1971).

According to this technique an agar-glucose medium is prepared, containing 3 per cent of glucose and 2 per cent of agar-agar. Warm, but not hot agar medium is subsequently mixed with water suspensions or solutions of fungicides or with plant sap. This mixture is poured out on Petri dishes to form a thin layer, about 2—3 mm thick. After consolidation of the medium, small discs are cut out of the gel layer by means of corckborer 5—8 mm in diameter. The discs are then transferred onto a glass slides with 5—6 replications on each slide.

Inoculation of agar discs with *Erysiphaceae* conidia may take place, as in Zaracovitis method, by "shaking" the conidia on the agar disc surface. A "contact" inoculation, proved better, however, by pressing small squares cut from diseased leaves to the agar surface.

Slides bearing agar discs with conidia are then incubated in Petri dishes, lined with moist filter paper. Incubation under stable conditions, advised by Zaracovitis, was not always satisfactory in respect to these

obligate parasites. It seems advisable to use incubation conditions as similar as possible to natural germination conditions on plants in a greenhouse, without avoiding the influence of normal light. Satisfactory results were obtained with conidia of *Erysiphe graminis* D. C., *E. betae* Weltzien and *E. pisi* D. C. ex St-Am. Conidia of *Sphaerotheca fuliginea* (Schlechtendal ex Fr.) Pollaci failed to germinate on agar discs.

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Badanie kiełkowania konidiów *Erysiphaceae* techniką krążków agarowych

Streszczenia

Metoda nadaje się do obserwacji kiełkowania konidii *Erysiphaceae* "in vitro" oraz wstępnej oceny fungicydów mączniakobójczych.

Pożywkę agarową zawierającą 3% glukozy i 2% agaru miesza się z roztworem lub zawiesiną związku badanego i rozlewa cienką warstwą. Korkoborem wycina się krążki z pożywki i przenosi na szkiełka podstawkowe. Szkiełka z krążkami zainokulowanymi zarodnikami *Erysiphacease* inkubuje się w szalkach Petriego, wysłanych wilgotną bibułą. Inkubację najlepiej przeprowadzić w szklarni. Zadowalające wyniki uzyskano z zarodnikami *Erysiphe graminis* D. C. *E. betae* Weltzien i *E. pisi* D. C. ex St-Am.

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