LEAF ENRICHMENT: A METHOD FOR DETECTING SMALL NUMBERS OF PHYTOPATHOGENIC BACTERIA IN SEEDS AND SYMPTOMLESS LEAVES OF VEGETABLES

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Attempts to detect small numbers of phytopathogenic bacteria in seeds and in symptomless leaves have so far met with great difficulties when using conventional methods. A new method, using the host's leaves as an enrichment medium, has been developed and proved successful in detecting *Pseudomonas tomato* and *Xanthomonas vesicatoria*. Detached leaves of tomato cv. 'VF-198' and pepper cv. 'Ma'or' were surface-disinfested in 0.5% NaOCl for 3 min, washed with sterile water, placed on 0.5% water agar, and inoculated with 2 ml suspension of 10^1-10^2 cells/ml of *Pseudomonas tomato* (tomato leaves) or *Xanthomonas vesicatoria* (pepper leaves). After incubation under fluorescent light (5000 lux) at 25±3°C for 48-120 h, the leaves were again surface-disinfested and washed in sterile water. The leaves were then homogenized in sterile potassium-phosphate buffer and aliquots of dilutions of the homogenate were plated on diagnostic medium. After 48 h incubation typical fluorescent *P. tomato* or yellow *X. vesicatoria* colonies were counted. Bacterial counts increased significantly (10^5-10^7 cells/g leaf) inside the pathogen-inoculated leaves, but not inside leaves inoculated with saprophytic *P. fluorescens*. Symptoms of bacterial speck of tomato and bacterial scab of pepper appeared in the detached inoculated leaves after 5 days' incubation in the petri dishes. This method was used successfully to detect pathogens present in very small numbers in disease-suspected commercial seed lots of tomato and pepper and in leaves from suspected fields. (*P*)

SUMMER SURVIVAL OF *PRATYLENCHUS THORNEI* IN THE NORTHERN NEGEV

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Pratylenchus thornei is a winter pest of cereals, legumes and potatoes in the northern Negev of Israel. During the 7-8 months of the dry and hot season in this region, the nematodes survive in the soil at a rather high population level and return to full activity at the beginning of the rainy season. The purpose of the present project was to demonstrate that *P. thornei* survives the summer in an anhydrobiotic stage.

All developmental stages of *P. thornei* were exposed to gradually reduced relative humidity obtained by means of a series of glycerin-water solutions. At 97.7% R.H. the nematodes were coiled in a way characteristic of other anhydrobiotic plant parasitic nematodes. Similar coiled nematodes were extracted from naturally dry soil. The desiccated nematodes could withstand temperatures of 45°C. About 40% of the artificially desiccated nematodes could be reactivated by gradually increasing the humidity to the final water environment. In reactivated individuals the intestine seemed to be devoid of reserve materials. Only 3% of the original population remained alive when desiccated and reactivated three times in succession. In a pathogenicity test, reactivated *P. thornei* after anhydrobiosis multiplied within *Vicia sativa* roots, twice as much as did fresh nematodes. (*L*)