

**EXPRESSION OF RESISTANCE IN *BRASSICARAPA*  
INFECTED WITH *PLASMODIOPHORA BRASSICAE***

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**ABSTRACT**

Development of the secondary phase of *Plasmodiophora brassicae* was studied in susceptible and resistant lines of *B. rapa* by light and transmission electron microscopy. In infected plants grown at approximately 20°C in 10 hours light at 450  $\mu$ mole flux density, plasmodia developed and migrated through the susceptible and resistant outer cortical tissue for about 15 - 18 days after inoculation. Subsequently, plasmodia developed rapidly, divided and migrated deeper into the root. In resistant lines the plasmodia failed to grow and divide after this stage; they could not be found in subsequent samplings. X-ray micro-analysis showed that Ca<sup>++</sup> level increased considerably at the infection sites in resistant tissue, becoming concentrated in plasmodia and adjacent cell walls. These levels were considerably in excess of the toxicity threshold and were associated with degenerations of the plasmodia. There were no major changes in other elements measured.

**Keywords:** *Plasmodiophora brassicae*, *Brassica rapa*, Infection, expression of resistance.