

047 Molecular markers for resistance to cyst nematodes in potato

Erin BAKKER^{1,*}, Jeroen ROUPPE VAN DER VOORT¹, Herman VAN ECK², Jaap BAKKER¹ and Aska GOVERSE¹

¹Laboratory of Nematology, Wageningen University, Binnenhaven 5, 6709 PD Wageningen, The Netherlands

²Lab. Plant Breeding, Wageningen University, The Netherlands

*erin.bakker@nema.dpw.wau.nl

A mapping strategy based on catalogued, chromosome-specific AFLP markers facilitated the localisation of genes for resistance against potato cyst nematodes. The genes *Gpa2*, *Grp1*, *Gpa3*, *Gpa5* and *Gpa6* could relatively easily be mapped with this AFLP catalogue. Fine mapping showed that most of these genes are located in genomic regions harbouring also resistance genes for other pathogens. Especially, *Grp1* and *Gpa5* on chromosome V and *Gpa3* on chromosome 11 seem to be located in

‘hotspots’ for resistance. Remarkably, both qualitative and quantitative resistances map to these resistance gene clusters indicating that they might be controlled by similar molecular mechanisms. Dissecting resistance in potato will in the near future be accelerated by the availability of an ultra dense genetic map. Using an offspring of about 100 individuals, approximate 10 000 AFLP markers have been placed on the map of potato. The possibilities for marker-assisted breeding in potato will be discussed.