

SPLJK, AB C. van*, STEVE BARNES, and JAN PERTIJS, Advanta Seeds BV, P.O. Box 1, 4410 AA Rilland, Netherlands. **Monitoring the nematode resistance gene in tetraploid pollinators by using genetic markers.**

Nematode resistance coming from the *Beta procumbens* is introduced in *Beta vulgaris* as an addition on chromosome number 4. Due to this addition the transmission of the resistance to the offspring is not stable; in the meiosis the addition is eliminated frequently. In triploid and tetraploid plants the consequences of this instability are less drastic. However the number of chromosomes carrying the addition has to be monitored closely. The development of genetic markers has been a major improvement in the breeding process. Comparisons of the F1 and F2 generations are giving an indication about the stability of the transmission of the resistance. In the breeding program backcrosses have been made and marker assisted selection applied to bring the resistance into highly-performing pollinators. Yield comparisons made under infested and non-infested conditions show that significant improvements have been made over the different backcross generations for sugar content and juice purity, resulting in a better recoverable sugar yield.