Hyaloperonospora parasitica isolates The pathogen isolates used in this study are listed in Table 2. Two standard isolates (P005 and P006) were included, which were previously used for genetic studies and for selection of the original downy mildew resistant accessions (Leckie et al., 1996). Twenty–five single–spore isolates, derived from infected tissue samples that were collected from transplant nurseries or commercial farms in England during the 2001 and 2002 growing seasons, were included. Fifteen additional isolates were collected from plant nurseries in 2007 and 2008. For maintenance of cultures and inoculum produc– tion, leaf tissue with downy mildew sporulation was washed with 2–3 mL distilled water and the resulting suspension was drop–inoculated onto 9–day–old kale (cv. Maris Kestrel) seedlings. The inoculated seedlings were then incubated for 7–14 days in a growth room at 15 ± 2°C with a day length of 12 h. Infected cotyledons with sporulation were harvested and washed and the spore suspension was inoculated again onto kale seed– lings. After 7 days' incubation, cotyledons displaying heavy sporulation were used to prepare a suspension for seedling experiments. Surplus seedlings with heavy sporulation were harvested, placed in small sealed pots and frozen at )80°C for long–term storage. The interaction phenotype (IP) of each seedling was assessed 7 and 14 days after inoculation by rating the degree of sporulation and host response using a scale adapted from Leckie et al. (1996) and converting the scores to a numerical IP value (Table 3). The highest score of each seedling was used to calculate a mean IP value per line. A mean IP2Æ5 was considered as fully resistant, a mean IP4Æ5 was considered as fully susceptible, and an intermediate value indicated a weak level of resistance with restricted sporulation (possible examples of basal or rate–reducing resistance).