Breeding *Brassica rapa* in Scandinavia

Rutger Persson

Svalöf Consulting AB, Kulinggränd 1A, SE-234 39 Lomma, Sweden

Brassica oil crops are important and profitable break crops in rotations where cereals are repeatedly grown. In areas with short vegetation period or harsh winters, *Brassica rapa* (turnip rape, polish canola) is more reliable than *Brassica napus*. Important traits are early maturity, shattering resistance and good competition with weeds. The winter form of *Brassica rapa* is more winter hard than winter *Brassica napus* and can be sown later in autumn. Sweden has for a long time been one of the leading countries breeding spring and winter forms of *Brassica rapa*, but in 2002 the breeding program stopped. For some years, there was no plant breeding of *Brassica rapa* in Scandinavia until a new program was started by Svalöf Consulting AB. We breed both winter and spring forms and so far, we have two varieties of winter *Brassica rapa* and two spring varieties accepted for the EU Common Catalogue. The resources put into *Brassica rapa* breeding have always been just a small fraction of what is spent on *Brassica napus*. This is still practiced and Svalöf Consulting AB has no external funding of the breeding. It forces us to make hard priorities and take clear, long term decisions about the strategy, such as herbicide tolerance, GMO and hybrids. We don't introduce any herbicide tolerance since there are several problems from a sustainability point of view. The trend is that less number of herbicides will be accepted from an environmental point of view. It is also obvious that weeds develop resistance to herbicides. Developing a breeding material with a special herbicide tolerance is a big investment. Instead we want to develop the already advantageous weed competition of *Brassica rapa*. We don't oppose using GMO but for the moment we see no important application for *Brassica rapa*. GMO is still not accepted on important markets. The term hybrid is not applicable in the same way as for *Brassica napus*. *Brassica rapa* is 100% cross-pollinating and thus all plants are hybrid plants. The difference is that the hybrid plants are more different from each other than within a hybrid of *Brassica napus*. The key to good performance is to have an effective selection among the hybrid plants. This can be enhanced by creating synthetic varieties.