male sterile and resistant to triazine, a herbicide that is normally toxic to colza.

This new variety was produced using a technique called "protoplasm fusion" or somatic hybridation, which consists of joining the contents of two somatic (non-sexual) cells obtained from plant tissue. This hybrid variety of colza is now being tested in the field, in accordance with government regulations. However, Allelix announced in 1989 that it had been able to develop the first plants of hybrid corn by using a sophisticated genetic engineering technique — the culture of immature male pollen (microspore). Thus, the firm was able to do with corn what had already been done with colza, but using a different technique. The pollen culture technique, which makes it possible to transfer laboratory results more quickly into the field, is likely to replace the use of protoplasm fusion.

The next stage in colza improvement will undoubtedly involve genetic transfer, which has already produced very encouraging results in the laboratory.

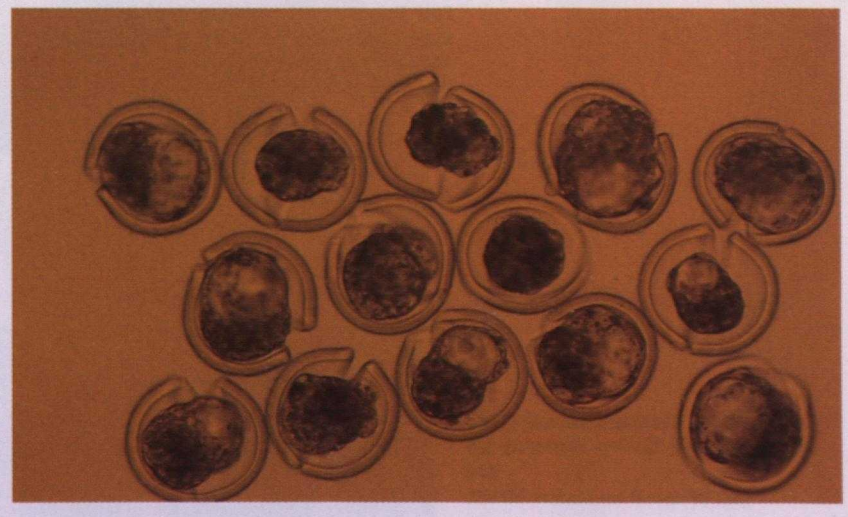
Furthermore, the colza family encompasses a wide variety of genetic characteristics that can easily be exchanged among its members, such plants as broccoli and cauliflower. Indeed, Allelix researchers have recently been able to transfer the characteristic of male sterility from colza to broccoli, and they are now attempting the same process with cauliflower and cabbage.

Breeding success in livestock

Another area where biotechnology is being applied is animal breeding. The animal breeding techniques used in Canada are among the most advanced in the world, and Canadian Holstein cows are renowned as one of the most productive milk-producing breeds.

Biotechnological progress in animal breeding has led to the

Barley embryos cultivated in a nutritional medium — viable plantules.
(W.G. Thompson & Sons Ltd.)



Clone of 14 embryos ready to be transplanted into a cow.
(Alta Genetics Inc.)