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Canada leads in techniques to improve cattle

Canada is one of the world's major producers of quality cattle and semen and is also a leader in the latest technology for cattle reproduction which involves the transplant and freezing of bovine embryos.

Embryo transplant is an advanced breeding process in which a donor cow, selected for superior genetic qualities, is treated with a fertility drug to stimulate her ovaries to release numerous ova, usually ten to 15, rather than just the usual one egg. The cow is then artificially bred with the semen of a genetically superior bull. After fertilization has taken place, her reproductive tract is flushed out non-surgically and the recovered fertilized ova, called embryos, are individually placed directly into the uteri of recipient cows who act as foster mothers for the nine-month incubation period.

The resulting calves possess all the

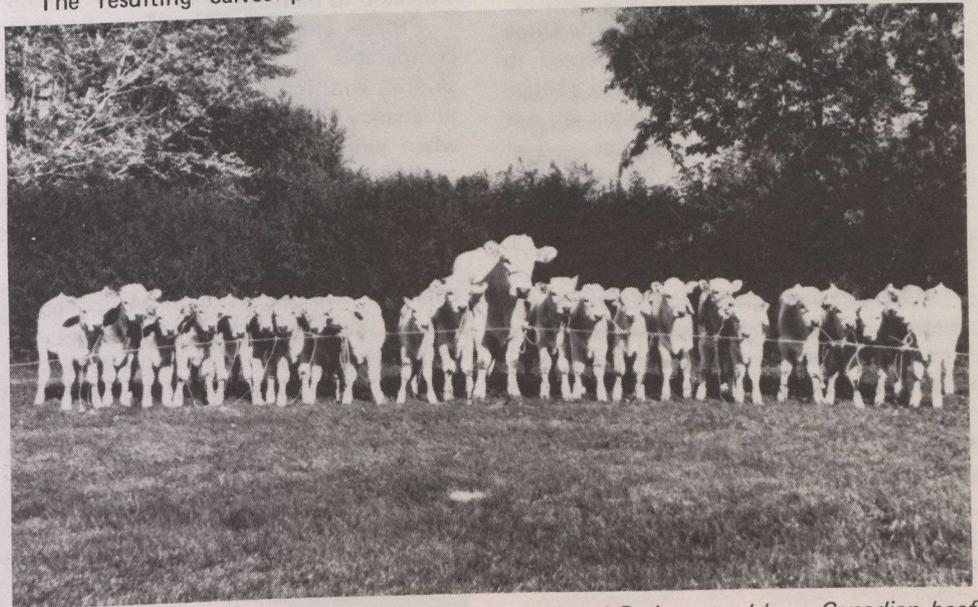
bloodlines and genetic traits of the original sire and dam and none of the foster mothers' which supply the embryo only with nourishment.

The advantage of embryo transplants is that they enable cattle breeders to improve dramatically the quality of beef or dairy herds in a relatively short time.

For example, in any herd of 40 or 50 cows, only three or four may belong in the top categories. Normally cows produce only one calf a year and half their offspring will be bulls. This results in an increase in a farmer's herd by only one or two top-quality cows a year.

Numbers increased

By implanting the embryos recovered from a high grade cow in perhaps ten or 12 lower grade cows, the farmer can considerably increase his annual yield of quality cows even though not all implants



The mother of this family, a Romagnola cow named Perla owned by a Canadian beef farmer, produced all 21 calves as a result of a single non-surgical embryo recovery procedure performed at Alberta Livestock Transplants Limited of Calgary, Alberta. A recovery procedure normally results in fewer than five calves. Perla produced 29 embryos each of which was implanted in another cow for the nine-month incubation period. While 23 pregnancies resulted, one calf was aborted and another died at birth. In 1979 the company transferred more than 3 000 embryos recovered from 700 donors, one of the highest volumes in the world.



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