

Agricultural Research

8.70 Technology led development in agriculture has made India self-sufficient in food grains and a leading producer of several agricultural commodities in the world. The **Green revolution** in crops, **Yellow revolution** in oilseeds **White Revolution** in milk production, **Blue Revolution** in fish production and **Golden revolution** in horticulture bear an ample testimony to the contributions of agricultural research and development efforts undertaken in the country. During the year 1999-2000, 47 varieties of different crops were released/notified. The important ones are maize varieties – JH 3459, Amar, Kohinoor; Rice variety – Vivek Dhan 62; Sorghum variety – CSH – 19 R; Chick-pea variety-Gujarat Gram 4; Soyabean variety – Ahalya 4; Groundnut variety – Manjra; and Cotton variety - Sumangala. In a non-conventional crop like safflower, 2 hybrids have been released. Twenty new improved varieties and hybrids of cereal crops were identified for release for commercial cultivation in different agro-ecologies. The technology for the integrated pest management (IPM), including large scale production of bio-agents and bio-pesticides, has

been developed in major crops/crop-groups such as cotton, sugarcane, pulses, oilseeds etc. A National Research Centre on Seed Spices has been established at Tabji Farm, Ajmer in 2000. The National Research Centre on Arid Horticulture, Bikaner has been upgraded to the level of full-fledged Institute (Central Institute of Arid Horticulture) with a Regional Centre at Godhra, Gujarat.

8.71 Techniques of super-ovulation and embryo transfer both in cattle and buffaloes have been standardized. It is now possible to have many more calves from high producing females as compared to 3-4 female calves possible otherwise in the lifetime of an animal. Embryos from high yielding cows and buffaloes are now available commercially. Precise, quick and reliable diagnostic methods and technologies for diagnosis of various livestock and poultry disease (ELISA, PCR, SDS PAGE, COGGIN'S, PHT, Electrophoresis, RIA, Electron Microscopy etc) have been developed. A High Security Animal Disease Laboratory has been commissioned at Bhopal. The Laboratory is the first of its kind in Asia for control and diagnosis of exotic diseases.