

## Discoveries and landmarks in ANIMAL BREEDING

- 1677 **Anton Van Leeuwenhock** & his student *Jonn Hamm*; Observed sperms through a magnifying lens
- 1725 – 1795 **Robert Bakewell**, an English man began his animal breeding work at Dishley, Leicestershire, England with horses, sheep and cattle. He is **called Father of Animal Breeding**. He travelled extensively for his time both in England and on the continent in quest of superior breeding stock. He developed theories and tested them with experiments. He concentrated on producing farm animals with increased efficiency.
- **Bakewell's two remarks were "Like begets like" and "Breed the best to the best"**.
- Bakewell's methods were widely copied and thus the foundation of purebred was laid. He laid the foundation for the Shire horses, Leghorn cattle and Leicester sheep.

- 1775 – 1849 **Thomas Bates developed highly inbred herd of cattle.**
- 1780 **L. Spallanzani** of Italy: First scientific work **on A.I.** Successfully obtained three pups by A.I. in dogs.
- 1791 British Royalty encouraged horse breeding for races, which results in English thoroughbred and **general studbook.**

- **1822 Coats first published a herd book for Shorthorn breed of cattle.** Settlers in America developed American saddle horse.
- **1866 Mendel published the law of heredity in Journal of Zoological Society of Austria**
- **1875 Herd book for Dutch Friesian Cattle**
- **1899 E.I. Ivonoff;** Practised A.I. in many stud farms (horses). First to undertake A.I. successfully in Cattle and Sheep

- Mendel's principles were **rediscovered by DeVeris of Holland, Von Tschermak of Austria and Correns of Germany**
- 1908 G. H. Hardy and Weinberg Independently formulate the **Hardy-Weinberg law** of population genetics
- **1939: Sampath Kumaran of Palace Dairy Farm, Mysore used A.I. for the first time in India.**
- **1942 P.Bhattacharya of Indian Veterinary Research Institute, Izatnagar, first scientific work on A.I. in India.**
- 1953 J. D. **Watson and F. H. C. Crick** Propose the double-helix model for DNA; Discovery of DNA as the genetic material

- 1980 Martin Cline and co-workers created a **transgenic mouse**
- 1990 The first genetic engineering company “Genetech” founded in San Francisco in USA.
- 1990 Formal launch of the international **Human Genome Project**
- 1997 Researchers at Scotland’s **Roslin Institute** lead by Ian Wilmut have cloned a sheep called “**Dolly**” from somatic cell of an adult ewe.
- 1998 Scientists from University of Hawaii cloned a mouse using **Wilmut’s technique** creating not only dozens of copies but three generations of clones.

- 1998 Scientists at Japan's Kinki University cloned eight identical calves using cells from a single adult cow.
- 1998 Scientists at USA created a **cloned calf** from a Friesian cow and named as **"Jafferson"**.
- 2010 Cloned a buffalo calf named **'Shresth'** at National Dairy Research Institute, Karnal, India.
- **ICAR has started herd books for the first time India for Red Sindhi and Sahiwal breeds of cattle in 1941. Subsequently herd books were also established for Haryana, Murrah, Gir, Kankrej, Tharparkar, Kangayam and Ongole breeds.**

(Sources: ICAR,NBAGR etc)