

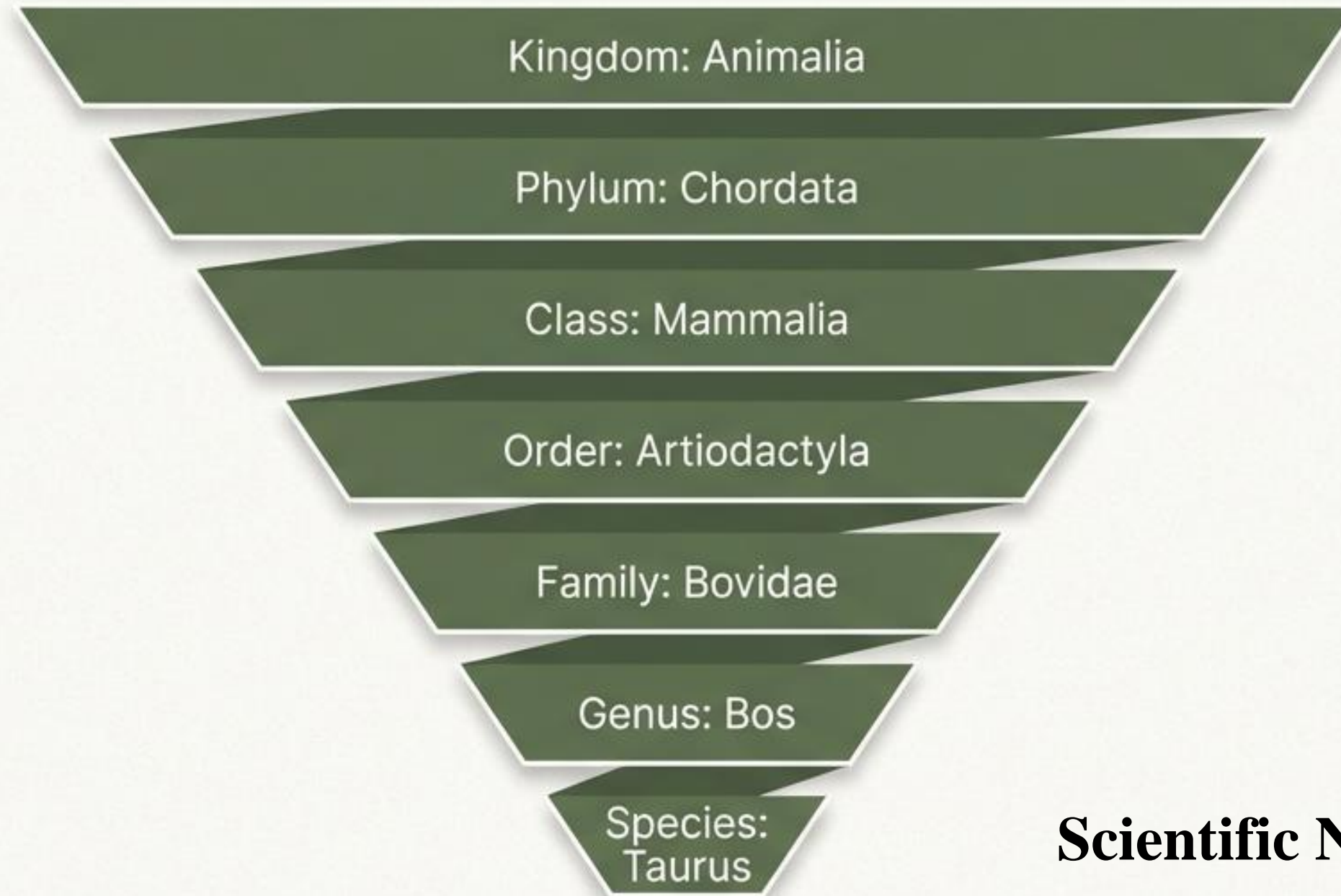
Exotic Milch Breeds of Cattle

Genetic Profiles, Production Capabilities,
and Global Crossbreeding Strategies



Based on the Seminar by Dr. Deepesh Garg, Department of LPM.

Scientific Classification



Scientific Name: *Bos taurus*

Defining the Utility

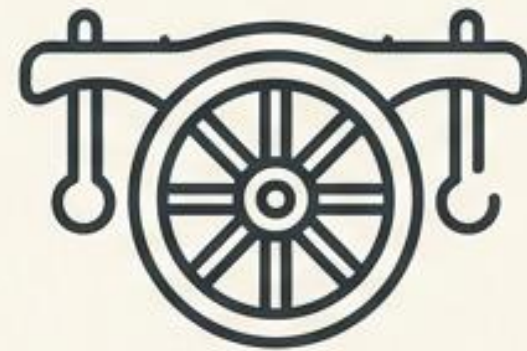
“A breed may be defined as a group or population of animals of the same species having similar characters and producing similar offspring.”



Dairy



Beef



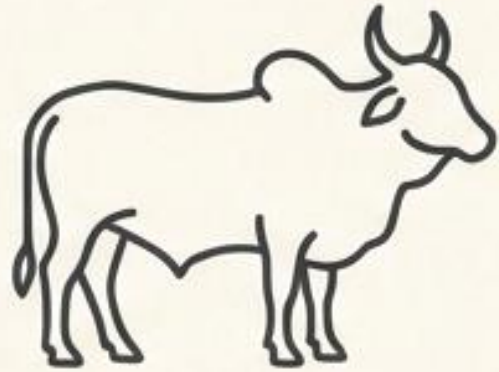
Draught



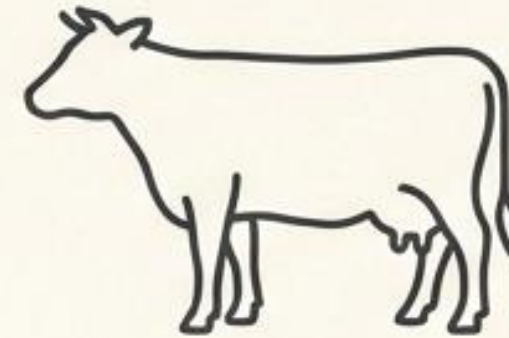
Byproducts
(Manure/Fuel)

The Genetic Divide

Indigenous Breeds



Exotic Breeds



Jersey
Holstein-Friesian (HF)
Brown Swiss
Ayrshire
Guernsey
Red Dane

Beef Exotics: Hereford, Angus, Shorthorn

Comparative Performance Matrix

Table 1 : Description of Exotic Cattle Breeds

Breed	Origin	Key Characters
Jersey	Island of Jersey (England)	Longest lactation (365 days), Highest fat (5.5%) , Smallest & most hardy .
HF (Holstein-Friesian)	Netherland/Holland	Highest milk producer in world (6,150 L) , Lowest fat (3.5%) .
Ayrshire	Scotland	Most beautiful dairy breed .
Brown Swiss	Switzerland	Highest lactose (5%) , Max heat tolerance .
Hereford	England	Beef breed context .

Jersey: The Butterfat Champion

Origin: Island of Jersey (England)

Body Profile: Smallest breed, dished forehead, compact angular body.

Key Stat: Highest Milk Fat (5.3% - 5.5%)

Production: 7,260kg per cycle

Utility: Excellent for cheese, butter, and Vitamin B-12.



Holstein Friesian: The Volume Giant



Origin: Northern Netherlands (Friesland)

Body Profile: Largest dairy breed, heaviest exotic breed.

Key Stat: World's Highest Milk Producer

Production: 6,000 - 7,000 kg per lactation

Fat Content: Lower average (3.45% - 3.5%)

The Rugged All-Rounder: Brown Swiss



Origin: Switzerland
(Mountainous Regions)



Utility: Triple Purpose:
Milk, Meat, Draught



Performance: 5,250
kg yield, 4.2% Fat,
Highest Lactose (5%)



**Maximum Heat
Tolerance**

Guernsey: The Golden Milk

High
Beta-
Carotene



Origin: Small island of France

Visuals: Fawn or red and white

Superpower: Golden colored milk due to Beta-carotene

Stats: 6,000 Liters/annum, 5% Butterfat, 3.7% Protein

The European Specialists

Red Dane



Origin: Northern Europe.
Heavy breed.
Yield: 3,000-4,000 kg.

Ayrshire



Origin: Scotland.
Also known as Dunlop cattle.
Considered the most beautiful dairy breed.

The Science of Crossbreeding



The Crossbreed Formulas

Table 15: Crossbreds of Cattle

Name		Location		Genetic Mix	
Jersind		Allahabad		Jersey × Red Sindhi	
Frieswal		Meerut		HF × Sahiwal	
Jerthar		Bangalore		Jersey × Tharparkar	
Karan Swiss		NDRI Karnal		Brown Swiss × Sahiwal	
Karan Fries		NDRI Karnal		HF × Tharparkar	
Sunandini		Kerala		Brown Swiss × Non-descript	
Jamaica Hope		Jamaica		80% Jersey, 15% Sahiwal, 5% HF	
Taylor		Patna		Shorthorn × Native (First Indian Crossbreed)	

The New Frontiers: Complex Composites

Updated Data from Table 15

Crossbred	Origin	Composition
Phule Triveni	MPKV, Rahuri	50% HF, 25% Jersey, 25% Gir
Vrindavani	ICAR-IVRI, Izatnagar	50-75% Exotic (HF, Jersey, Brown Swiss) & 25-50% Indigenous (Haryana)

Comparative Hall of Fame



Highest Volume

Inter Regular, Slate Grey

Holstein Friesian

Playfair Display Bold, Deep Charcoal



Highest Fat %

Inter Regular, Slate Grey

Jersey

Playfair Display Bold, Deep Charcoal



Smallest Breed

Inter Regular, Slate Grey

Jersey

Playfair Display Bold, Deep Charcoal



Largest & Heaviest

Inter Regular, Slate Grey

Holstein Friesian

Playfair Display Bold, Deep Charcoal



Most Beautiful

Inter Regular, Slate Grey

Ayrshire

Playfair Display Bold, Deep Charcoal



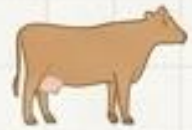
Best Heat Tolerance

Inter Regular, Slate Grey

Brown Swiss

Playfair Display Bold, Deep Charcoal

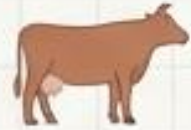
Engineered Genetics: Indian Crossbreeds



+



=



Jersey
Inter Regular

Red Sindhi
Inter Regular

Jersind
(Allahabad)



+



=



Brown Swiss
Inter Regular

Sahiwal
Inter Regular

Karan Swiss
(NDRI Karnal)



+



=



HF
Inter Regular

Sahiwal
Inter Regular

Frieswal
(Meerut)



+



=



HF
Inter Regular

Tharparkar
Inter Regular

Karan Fries
(NDRI Karnal)



+



=



Jersey
Inter Regular

Tharparkar
Inter Regular

Jerthar
(Bangalore)



+



=

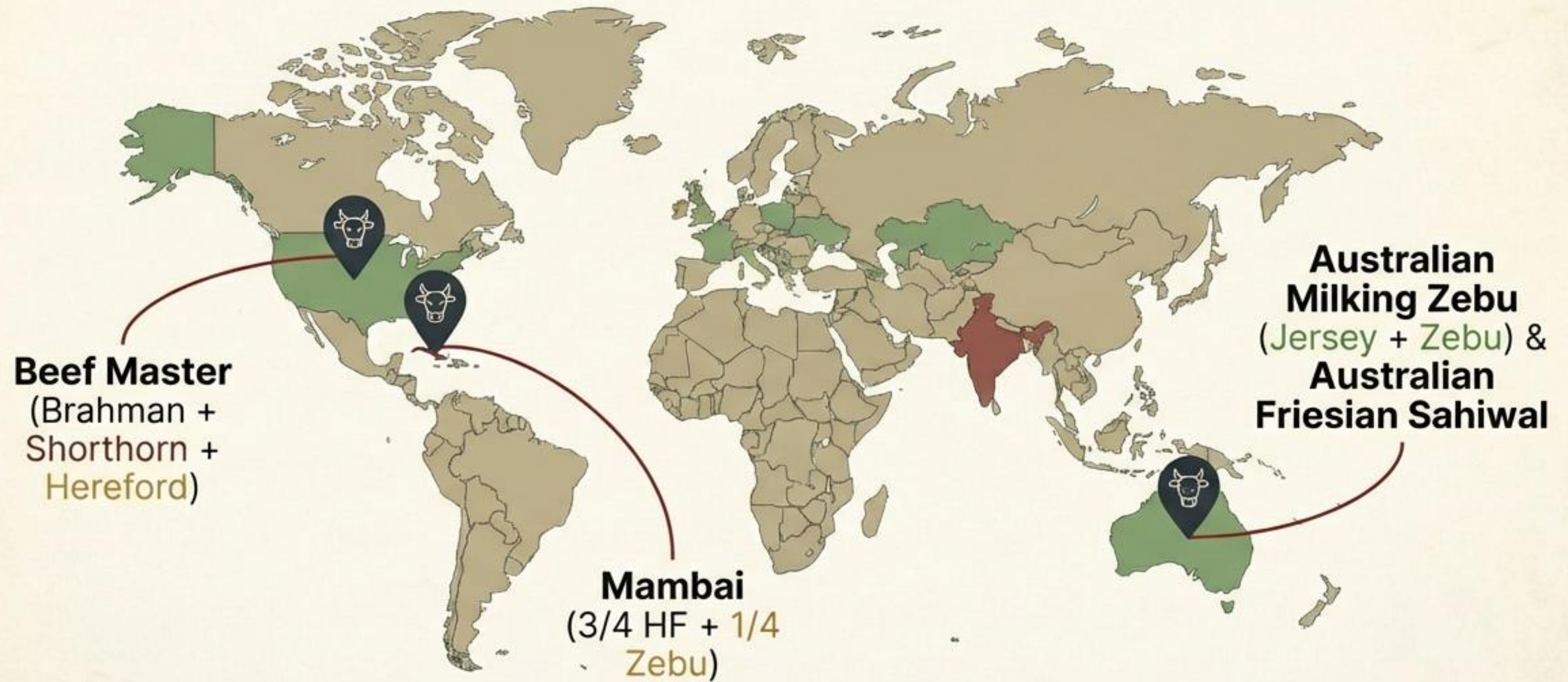


Brown Swiss
Inter Regular

Non-Descript
Inter Regular

Sunandini
(Kerala)

Global Success Stories



Complex International Hybrids

Multi-breed genetic compositions

The Mixes

- **Jamaica Hope (Jamaica):**
80% Jersey + 15% Sahiwal + 5% HF



- **Australian Milking Zebu (CSRI):**
20–40% Zebu + Balance Jersey



- **Australian Friesian Sahiwal (Queensland):** Sahiwal + HF



- **Mambai (Cuba):**
3/4 HF + 1/4 Zebu



- **Beef Master (USA):**
Brahman + Shorthorn + Hereford



Historical Note:

The 'Taylor' breed (Patna) was the first crossbred cattle developed in India (Shorthorn Bull x Native Cow).



Shorthorn Bull x Native Cow

Thank You

Exotic Milch Breeds of Cattle

Presentation Design by
Content based on Lecture by Dr. Deepesh Garg

