



MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT
DEPARTMENT OF LIVESTOCK PRODUCTION

BREEDING WORK AND GENETIC IMPROVEMENT IN BEEF CATTLE HUSBANDRY IN VIETNAM

Hanoi, 15th November 2023

CONTENT

I

BREEDING WORK

II

GENETIC IMPROVEMENT

III

IMPLEMENTATION SOLUTIONS



I. BREEDING WORK

1.1. Beef cattle breeds available in Vietnam

LOCAL BREEDS

VANG



Small stature, Mature weight :
bull 230-250 kg, cow 160-180
kg

U DAU RIU



Mature weight: bull 270–320 kg,
cow: 190–210 kg

H' MÔNG



Mature weight: bull 270–320 kg,
cow: 250 kg

LAI SIND



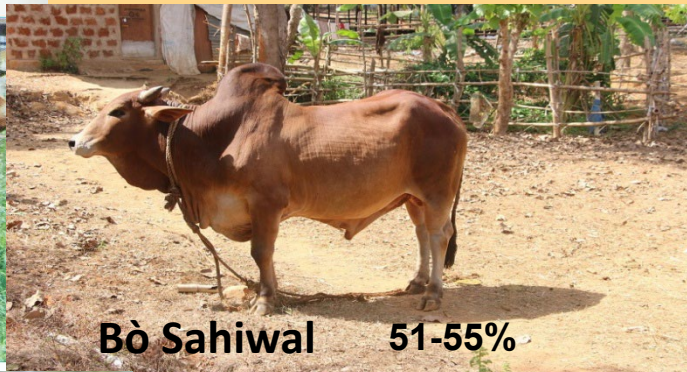
Mature weight :
bull 320-440 kg,
cow : 275 kg



I. BREEDING WORK

1.1. Beef cattle breeds available in Vietnam

IMPORTED BREEDS





I. BREEDING WORK

1.2. BREEDING WORK

- Breeding management according to the open nuclear model

Breed is the decisive key

- Ability to grow quickly, large volume,
- High carcass rate, refined meat rate, good meat quality

Monitor, record, evaluate, select and breeding





I. BREEDING WORK

1.2. BREEDING WORK

Choose breed:

- Appearance
- High weight gain ability
- High rate of carcass, high rate of refined meat,
- The quality of the meat is soft and delicious



Choose calves raised for meat

Select breeding cows for reproductive





I. BREEDING WORK

1.2. BREEDING WORK

Reproduction beef cattle

Pure breeding

Growth ability, carcass rate, pure meat rate and meat quality

Propagated by crossbreeding

Crossbreeding

- Crossbreeding between two or more beef cattle breeds
- Use bull semen that specializes in high-yield meat and cross-breed it with local cows

Creat new breed





II. GENETIC IMPROVEMENT

2.1. Beef cattle breed improvement programs are directed and implemented by the Government

- Livestock breeding program (end of 20th century, early 21st century to present).
- "Lai Sind cattle breed" crossbreeding program (end of 60s, 70s of the 20th century)
- Beef cattle breeding program (end of 70s, 80s and 90s of the 20th century).
- Program to improve Vietnam's VANG cattle herd (1970s of the 20th century).
- Program to improve Vietnamese cattle herds towards improving productivity and meat quality (first year of the 21st century to present)





2.1. Beef cattle breed improvement programs are directed and implemented by the Government

Imported cattle breeds: Charolais, Simental, Limousine, Hereford, Drought Master, Senepol, Blanc Blue Belge (BBB), Waguy...



Livestock Breeding Center, MONCADA Center - where sires are kept and frozen semen produced.



II. GENETIC IMPROVEMENT

2.2. Some programs to develop beef cattle breeds



Selecting, breeding
and upgrading local
Vang cattle breed

Appearance

Choose
bulls

Body
mass



II. GENETIC IMPROVEMENT

2.2. Some programs to develop beef cattle breeds

Production targets of Vang cattle and Lai Sind cattle

Contents	Unit	Vang cattle		Lai Sind cattle	
		Đực	Cái	Đực	Cái
Weight at brith	kg	14	12	16	14
Weight at 6 months	kg	85	65	95	90
Weight at 12 months	kg	100	80	160	150
Weight at 24 months	kg	175	150	280	230
Matrue weight	kg	250	180	320	250
Carcass rate	%	44	43	48	46
Pure meat rate	%	33	32	37	36

"Lai Sind cattle breed"
crossbreeding program
(from 1960-1970 scientific assessment
of cattle herds)

In 1920, Red Sindhi cattle
were imported to Vietnam
through the French.

Use progressive
crossbreeding with
Vietnamese yellow cattle

By 2003 Lai Sind cattle
accounted for about 30%
of the total herd

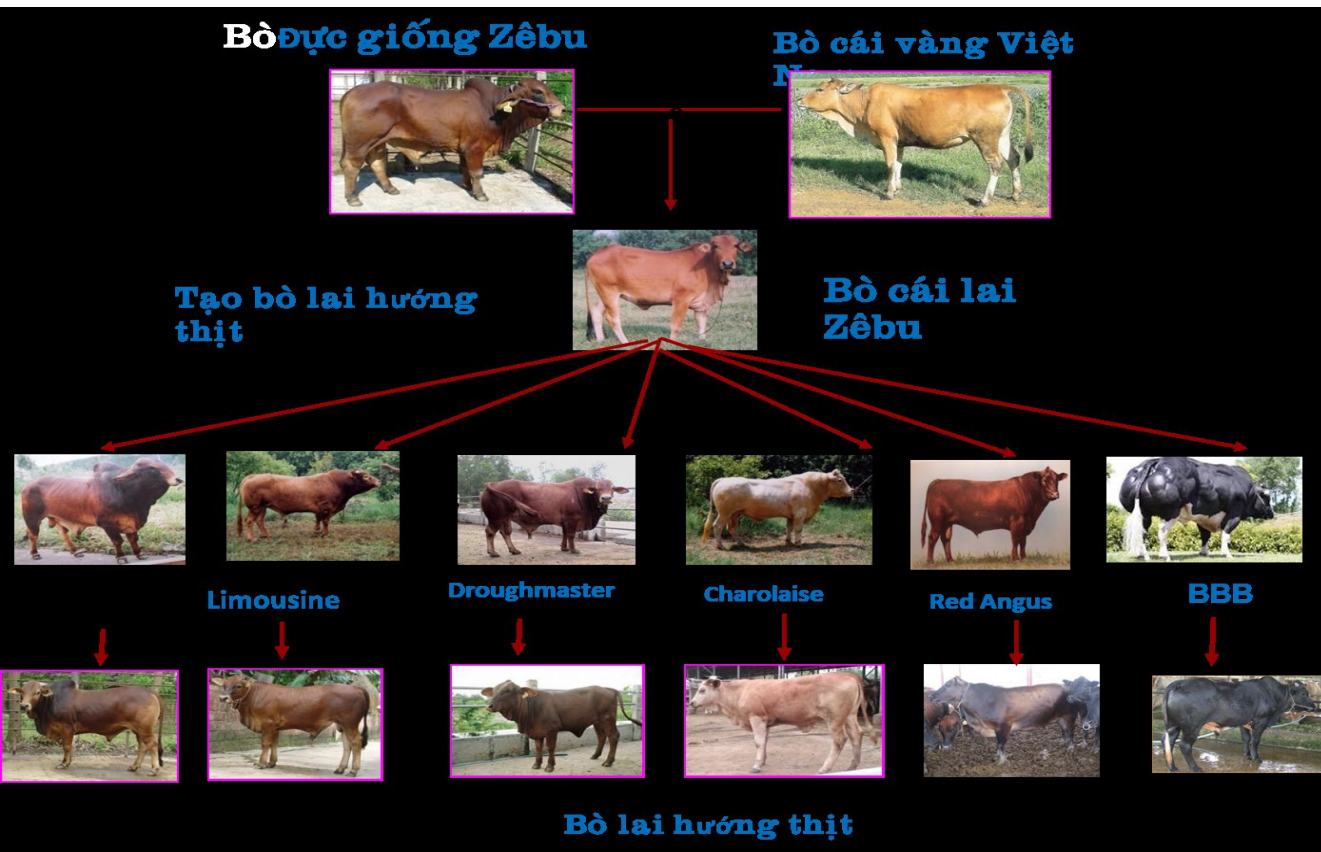
Lai Sind female herds
are valuable raw
materials for beef
cattle breeding

The Lai Sind breed cow became pregnant and gave
birth to a crossbred calf normally
All F1 hybrids are easy to raise and have few diseases



II. GENETIC IMPROVEMENT

2.2. Some programs to develop beef cattle breeds



Content	VANG	ZEBU CROSSBRED
WEIGHT AT BIRTH (kg)	12 - 15	18 - 25
WEIGHT AT 5 YEARS (kg)	150 - 230	280 - 380
CARCASS RATE (%)	40 - 42	48 - 50

"Zebu crossbred" program of Vang cows

Step 1: Use bulls or Zebu semen (Sind, Sahiwal, Brahman) to mate with VANG cows to create Zebu hybrids.

Step 2: Creating beef cattle crossbred

Using semen from beef cattle breeds to mating with Zebu crossbred females to create meat-specializing hybrids

Step 3:

Combination of hybrid formulas with 3/4 or 5/8 beef cattle blood



II. GENETIC IMPROVEMENT

"Zebu crossbred" program of Vang cows

Diagram of cross-breeding 3 and 3/4 blood beef cattle breeds

Sơ đồ lai 3 máu và 3/4 máu bò chuyên thịt

Bước 1:

Đực Brahman (B) x cái Vàng ta (V)



Con lai F1 có 2/4 B và 2/4 V

Bước 2

Đực Charolais (C) x cái F1 tốt nhất



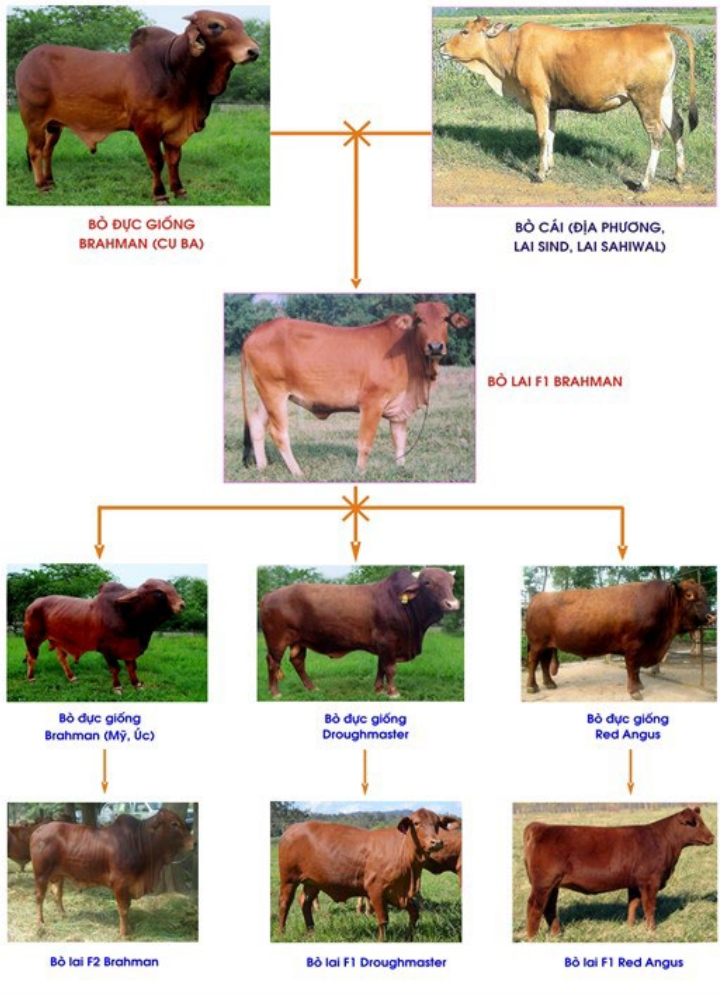
Con lai 3 máu có 2/4 C, 1/4 B và 1/4 V

Bước 3

Đực Charolais x cái lai 3 máu (2/4 C, 1/4B và 1/4V)



Con lai 3 máu có 6/8C, 1/8B và 1/8V



CONTENT	Unit	F1 Brahman	F2 Brahman	F1 Droughmaster	F1 Red Angus
W. at brith	kg	21	23	25	25
W. at 6 months	kg	85	100	125	130
W. at 12 months	kg	125	170	210	220
W. at 18 months	kg	210	240	270	290
W. at 24 months	kg	260	300	330	370
Carcass rate	%	49	51	53	56
Pure meat rate	%	38	40	42	44



III. IMPLEMENTATION SOLUTIONS

Promote the program to improve local cow herds through the use of Zebu F1, F2, F3 hybrid bulls... for direct breeding in undeveloped livestock areas, scattered livestock, and educated people not high yet

Using semen from high-yielding cattle breeds (Red Angus, Droughtmaster, Limousine, Charolaire, Blanc Bleu Belge, Wagyu, Senepol, Blonde d'Aquitaine...) to mate by artificial insemination with Zebu crossbred cows, local cows in developed farming areas

Conduct bulls performance testing using advanced and modern methods

Select and pure breeding Zebu cattle breeds and imported high-yield meat breeds suitable to the care, nurturing, education and ecological conditions of each region and locality.

Importing genetic resources: Importing high-yield bulls to produce frozen beef semen for domestic needs, importing some semen and beef cattle embryos to serve cross-breeding and pure breeding of beef cattle.





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Thank you !