MINISTÉRIO DA EDUCAÇÃO
UNIVERSIDADE FEDERAL DE PELOTAS
FACULDADE DE AGRONOMIA ELISEU MACIEL
DEPARTAMENTO DE ZOOTECNIA
PROGRAMA DE PÓS-GRADUAÇÃO EM ZOOTECNIA

Beef and Dairy Cattle Nutrition in South Brazil: Reality and Research Perspectives

Dr. Cássio C. Brauner
Assistent Professor
Department of Animal Science

cassiocb@gmail.com

NUPEEC - Center for Research, Teaching and Extension in Animal Science

DO YOU KNOW

BRAZIL?

BRAZIL

- **86.7% of USA territory;**
- **Population → ~ 192 million (2010); USA (308 million);**
- **8th world's largest economy (the largest in Latin America);**
- **Brazilian exportation: coffee, soybean, beef, sugar cane, ethanol and frozen chickens;**


Economic Activity
AGRICULTURE
(Selected commercial items)
Coffee
Cocoa
Sugarcane
Cotton
Lumbering and reforestation
Rice
Babassu oilseeds
Brazil nuts
Tobacco
Rubber
Corn
Cattle
Soybeans
MINES AND DEPOSITS
Fe Iron
Mn Manganese
W Tungsten
B Beryl
Q Quartz crystals
D Diamonds and other precious stones
Bx Bauxite
C Coal
P Petroleum
CT Columbium-tantalum
INDUSTRY
Food processing
Textiles and clothing
Iron, steel, and ferroalloys
Industrial machinery and equipment
Transportation equipment
Rubber products
Chemical-pharmaceutical
Forestry products
Cement
Petroleum refining
Shipyard
Major powerplant
Telecommunications and electronic equipment
Petrochemical fertilizer
Rio Negro
Amazon
Manaus
Macapá
Belém
São Luís
Fortaleza
Teresina
João Pessoa
Recife
Maceió
Salvador
Rio Madeira
Rio Tapajós
Rio Tocantins
Rio São Francisco
Rio Paraguai
Cuiaba
Brasília
Ipatingo
Volta Redonda
Belo Horizonte
Campinas
Rio Paraná
Campos
Rio de Janeiro
Santos
São Paulo
Curitiba
Florianópolis
Sorocaba
Pôrto Alegre
Rio Grande

FAO (2008)

Rio Grande do Sul State

Gaucho

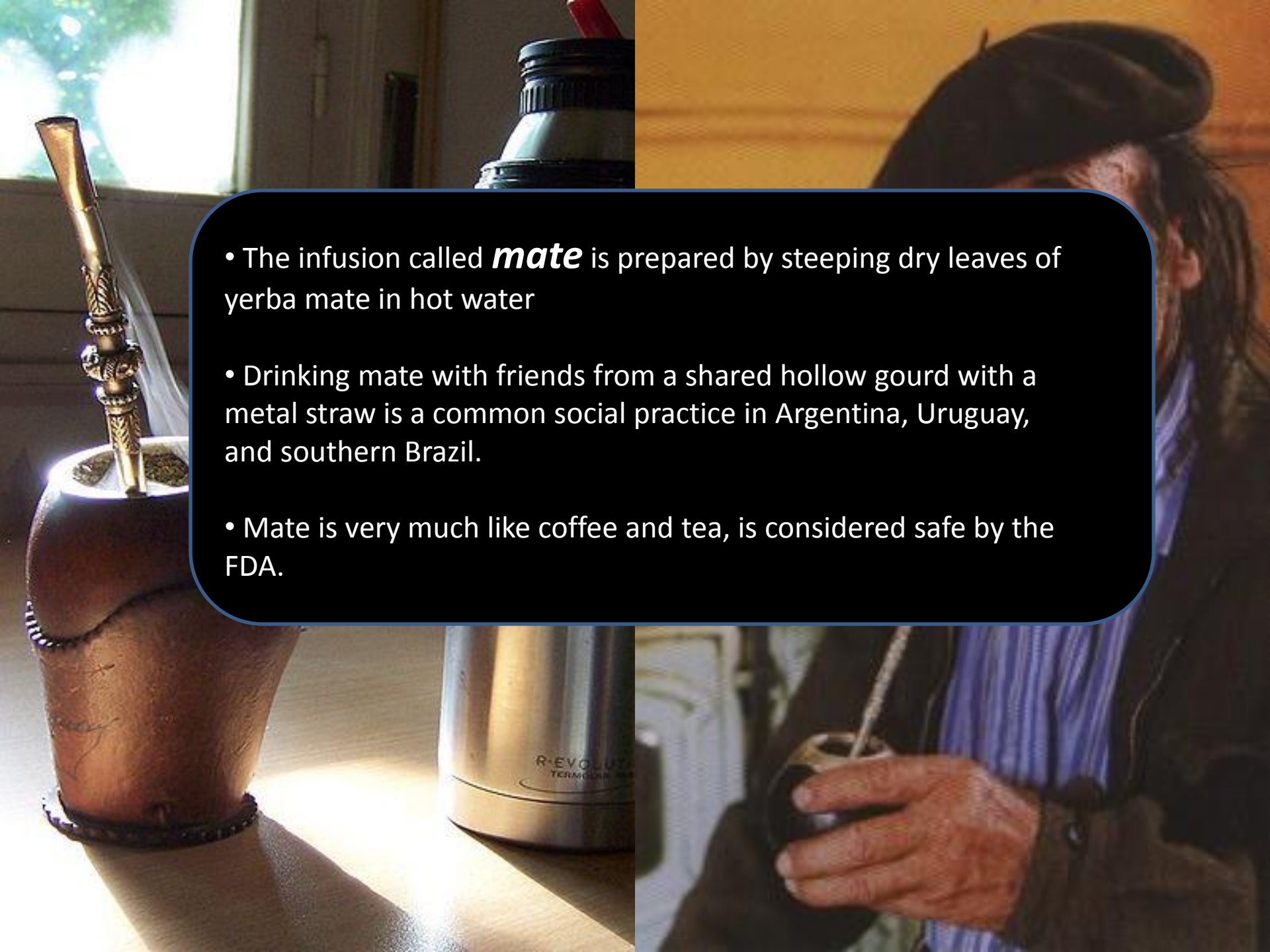
Porto Alegre (State capital)

Brazil = 27 states

Pelotas - UFPel

Crioulo horse

http://www.crioulohorse.com/

- The infusion called ***mate*** is prepared by steeping dry leaves of yerba mate in hot water

- Drinking mate with friends from a shared hollow gourd with a metal straw is a common social practice in Argentina, Uruguay, and southern Brazil.

- Mate is very much like coffee and tea, is considered safe by the FDA.

Livestock

Beef

~ 12 million

Beef Cattle Characteristics in RS State:

Beef Cattle Characteristics in RS State:

- 43% of farmers do full cycle;
- 21.9% cow-calf enterprise;
- 21.3% finishing cattle;
- 13.9% stockers (heifers and steers);

SEBRAE (2005)

Beef Cattle Characteristics in RS State:

Farm average area → 949 ha (2344 acres)

Genetics composition→ Eropean cattle predominance, but more than 30 crossbreed types

Nutrition → 73.8% of farmers feed only native pastures

Early Weaning → 16% of farmers

Moraes et al. (2007)

Beef Cattle Characteristics in RS State:

Natural Breeding → 98.8% in multiparous cows and 90% in hefeirs

Pregnance detection→ 50% of farmers

Breeding Season → End of Spring and during summer (14% all year)

Moraes et al. (2007)

Beef Cattle Characteristics in RS State:

Calf crop → 57.1% (100% to 11.1%)

Average age at first breeding → 28 months (11 to 48 months)

Average age at slaughter → 30 months (14 to 44 months)

Average age cull cows → 8.9 years (6 to 15 years)

Moraes et al. (2007)


Native pastures


Stocking rate: 315 kg/ha or 281 lb/acre

Rye Grass (Azevem)

(*Lolium multiflorum Lam)*

→ Most common winter grass used in RS;

→ Easy adaptability in all most every area of the state;

→ Intermediate price;

→ First choice of all most farmers for winter;

Rye Grass + White clover

(*Lolium multiflorum Lam + Trifolium repens)*

Bird’s foot trefoil “Cornichao”

(Lotus cornuculatus)

Black Oat

(*Avena strigosa* Schreb)

Stock pile “grass reserve”

(Diferimento or invernada)

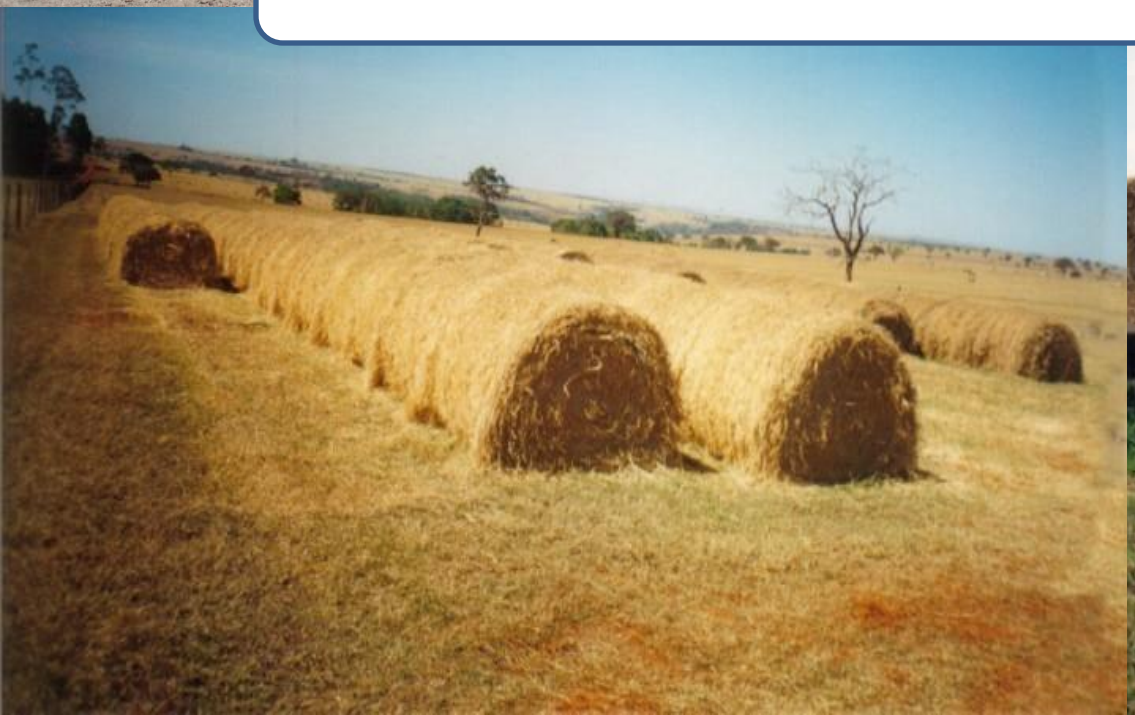
- Only quantity; no quality
- The area is closed during the end of summer then open for animals during the winter

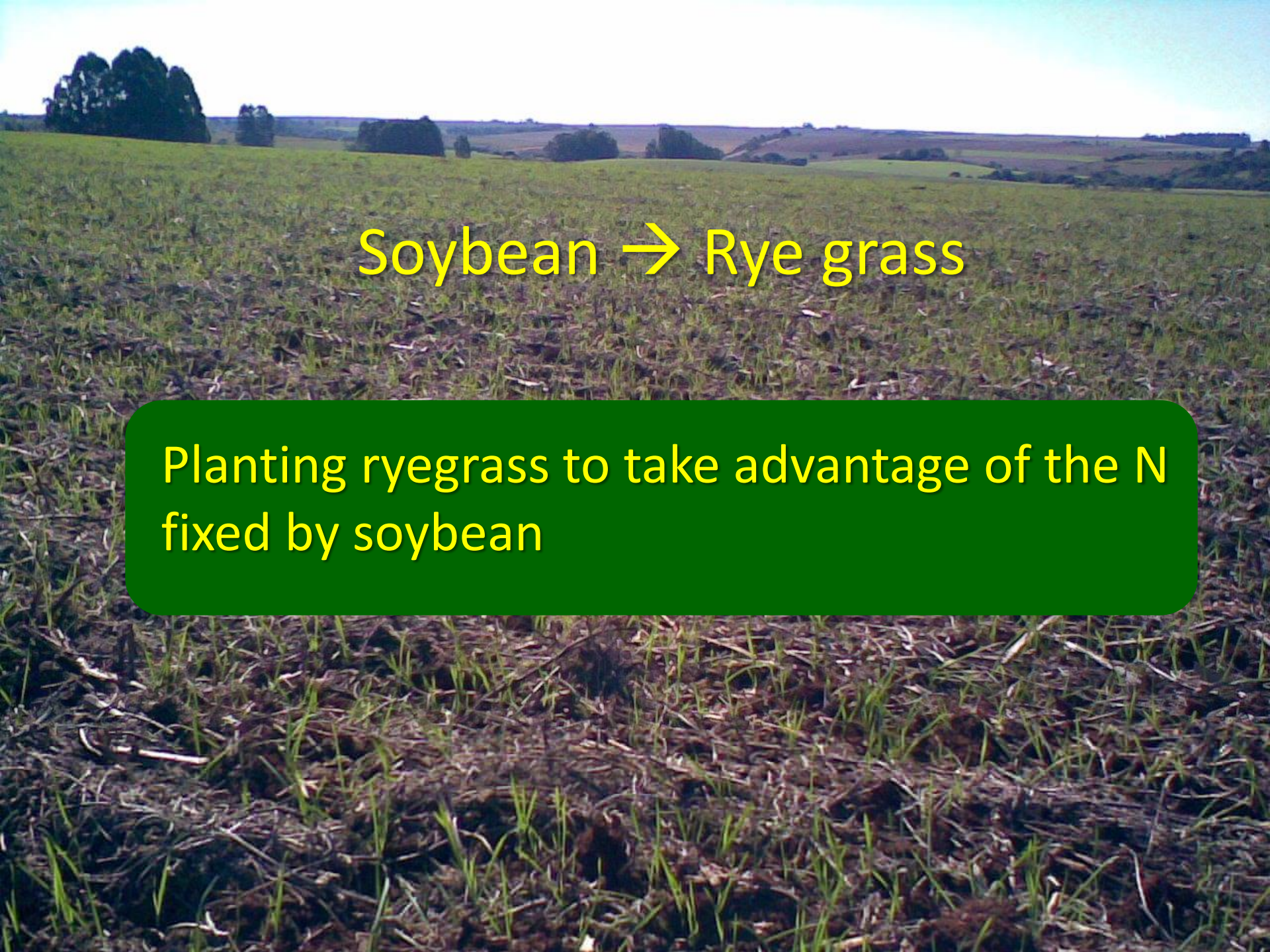
Crop Livestock Interaction (crop residue)

- Rice
- Soybean


Rice Straw

Rice Straw + Mineral Salt + Urea




Soybean → Rye grass
Planting ryegrass to take advantage of the N fixed by soybean

IN BRAZIL...

Climate is the driver

- **Understand the tropical rain system is mandatory**
- **All the central area of Brazilian territory has well defined dry and wet season**
- **In South Brazil the winter has the same effect**

The rain incidence and/or the cold will delimitate when pasture based production is possible or not!

Feed alternatives

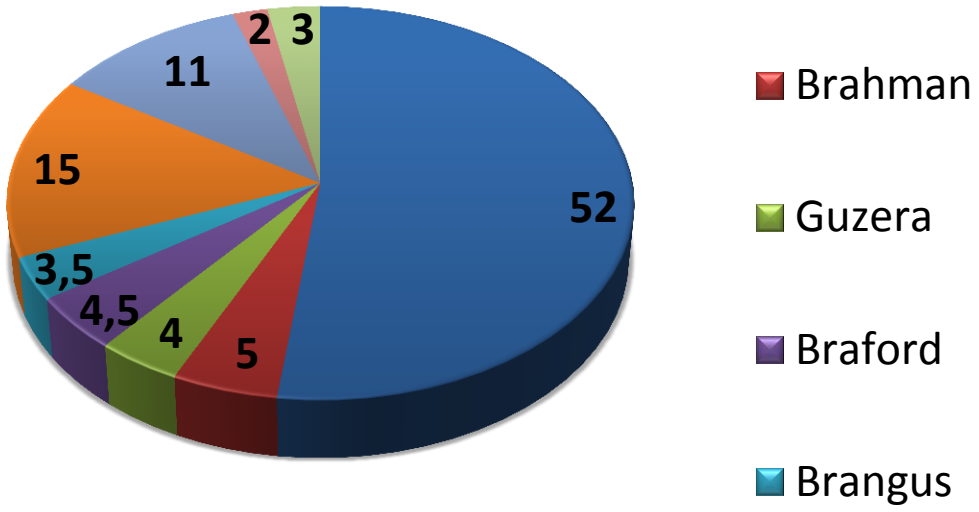
Beef production

- **Cattle spend most of their lives grazing tropical pastures, which often leads to slaughter older animals;**
- **The production cycle from birth to market averages 36 months;**
- **Brazilian cattle are fed in feedlots mostly during the dry season, when pasture availability is decreased;**
- **More than 80% of Brazilian cattle feeders include at least one type of co-product in the diet.**

Millen et al. (2011)

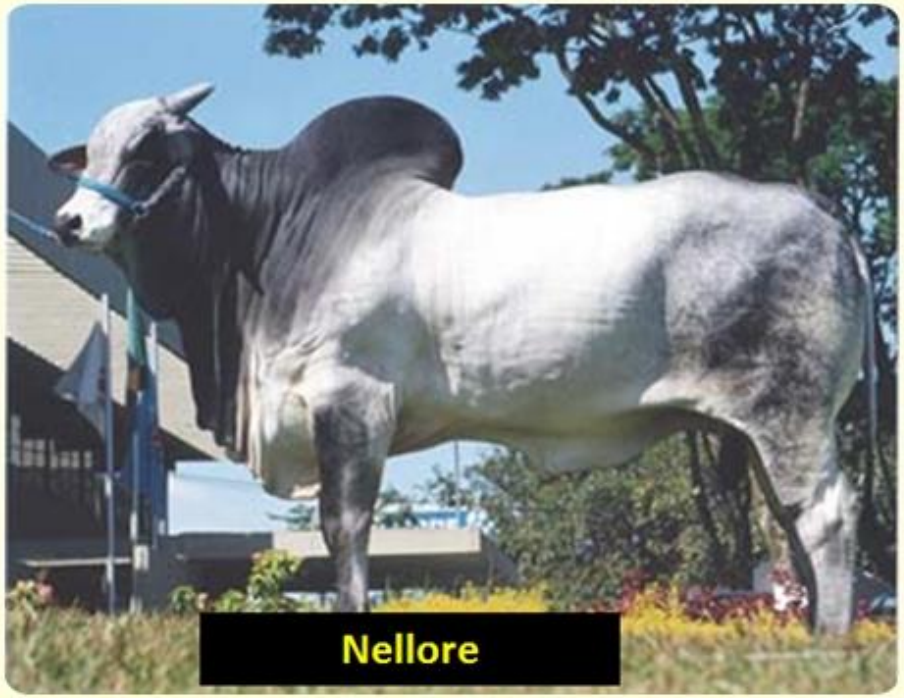
Beef production

- ~ 200 million heads;
- ~ 85% *Bos indicus* (zebu) plus crosses



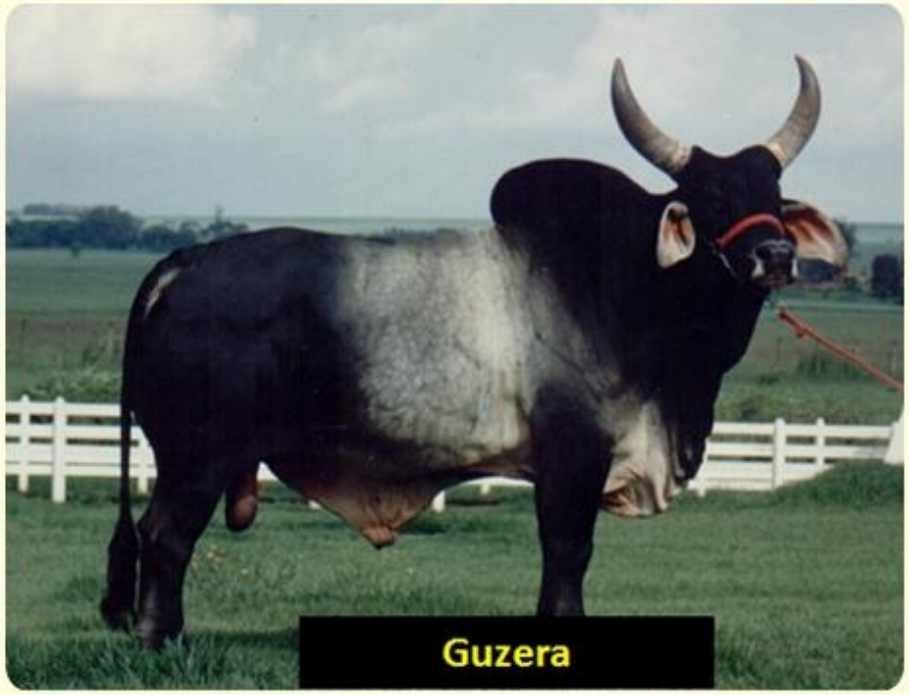
Beef Production in Western Brazil

- Mato Grosso State
- Mato Grosso do Sul State
- Goias State
- Minas Gerais State


Nellore


Gyr


Brahman


Guzera

Beef Production in Southern Brazil

- Rio Grande do Sul State
- Santa Catarina State
- Paraná State


ANGUS
ANGUS

Beef production

- **Feedlots operations are utilized just to finish beef cattle to achieve a minimum of 4 mm of fat cover**

Categories	Days to finish
Bulls	83.6
Steers	74.0
Heifers	67.5
Cull cows	57.4

Millen et al (2009) → Study conducted with 31 feedlot cattle nutritionists different feeding periods

Beef production

Agribusiness

42 % = Beef production

23 billion dollars

CEPEA / Esalq, 2012

Chalanges in beef cattle production

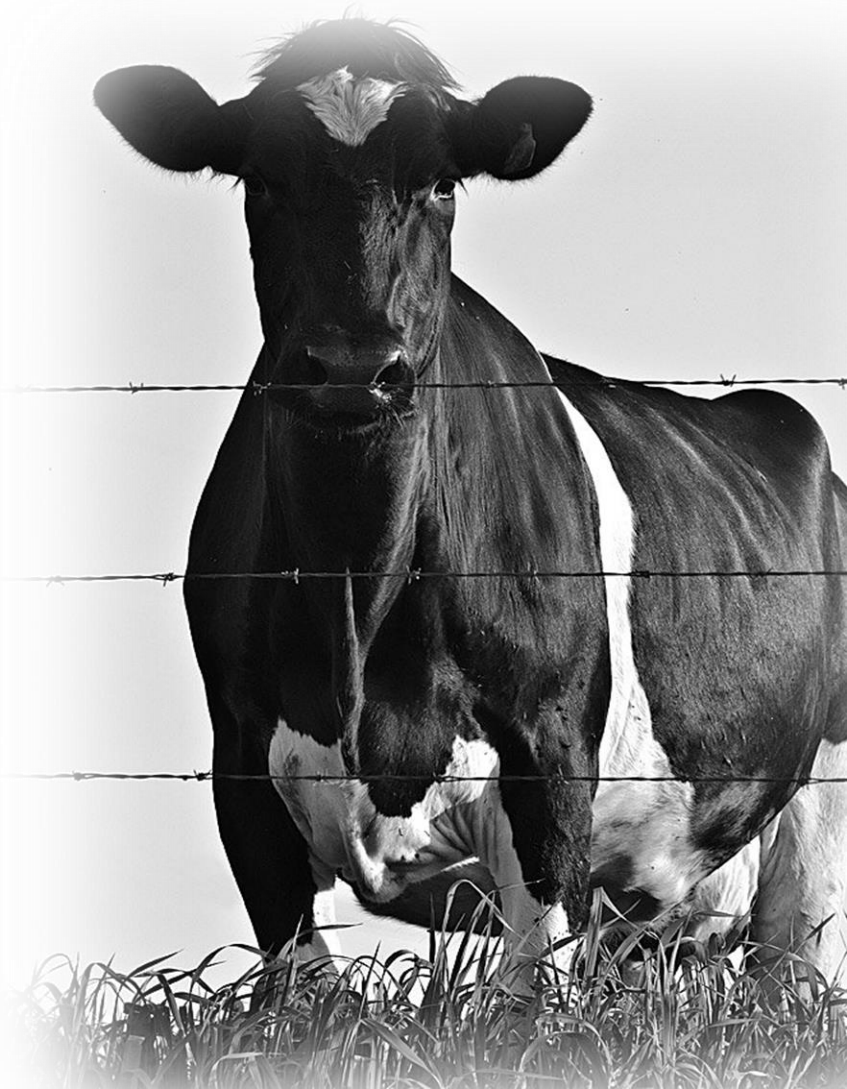
- Increase in soybean crops
- Standardization in beef cattle breeds
- Nutritional management
- Health issues



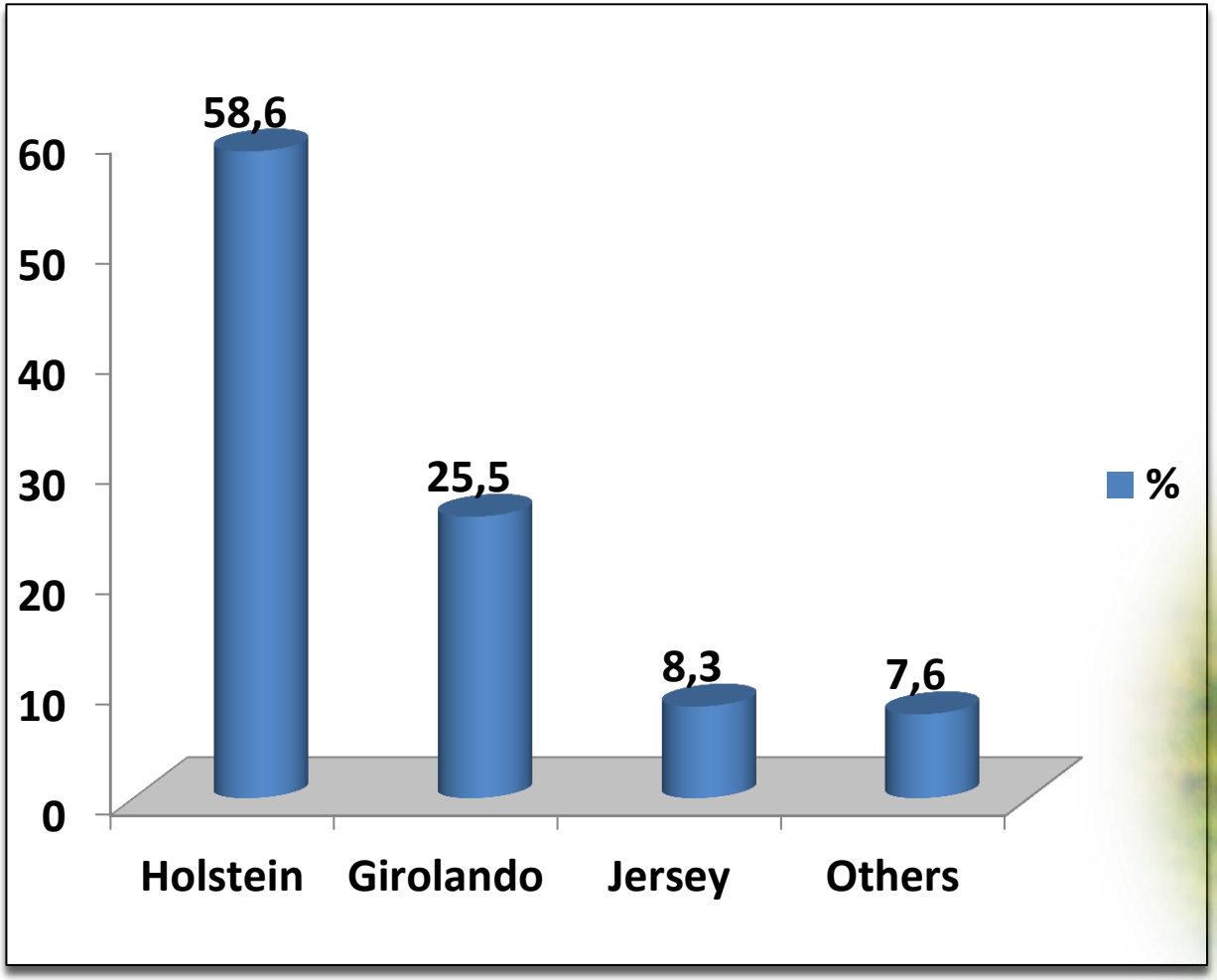
Brazilian Dairy Cattle Production

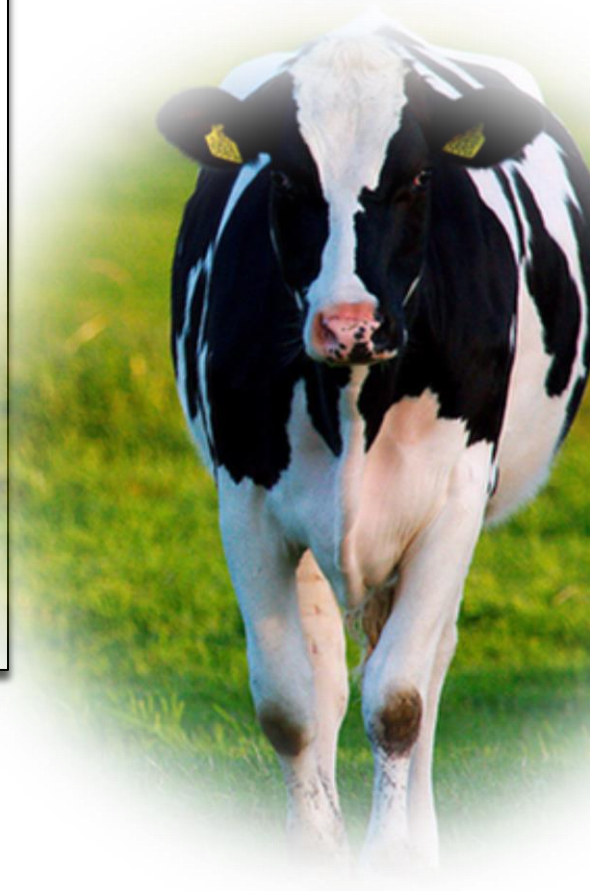
Investments priorities for the producers:

1. **Nutrition (Feed, grasses, alternative feeds, supplements);**
2. **Buy animals/repleacement animals;**
3. **Sanity/Health care;**
4. **Gentics (Sires);**
5. **Milking equipaments;**
6. **Fences;**
7. **Tractors and other machines;**
8. **Silage equipaments;**
9. **Facilities;**



Breeds (%)

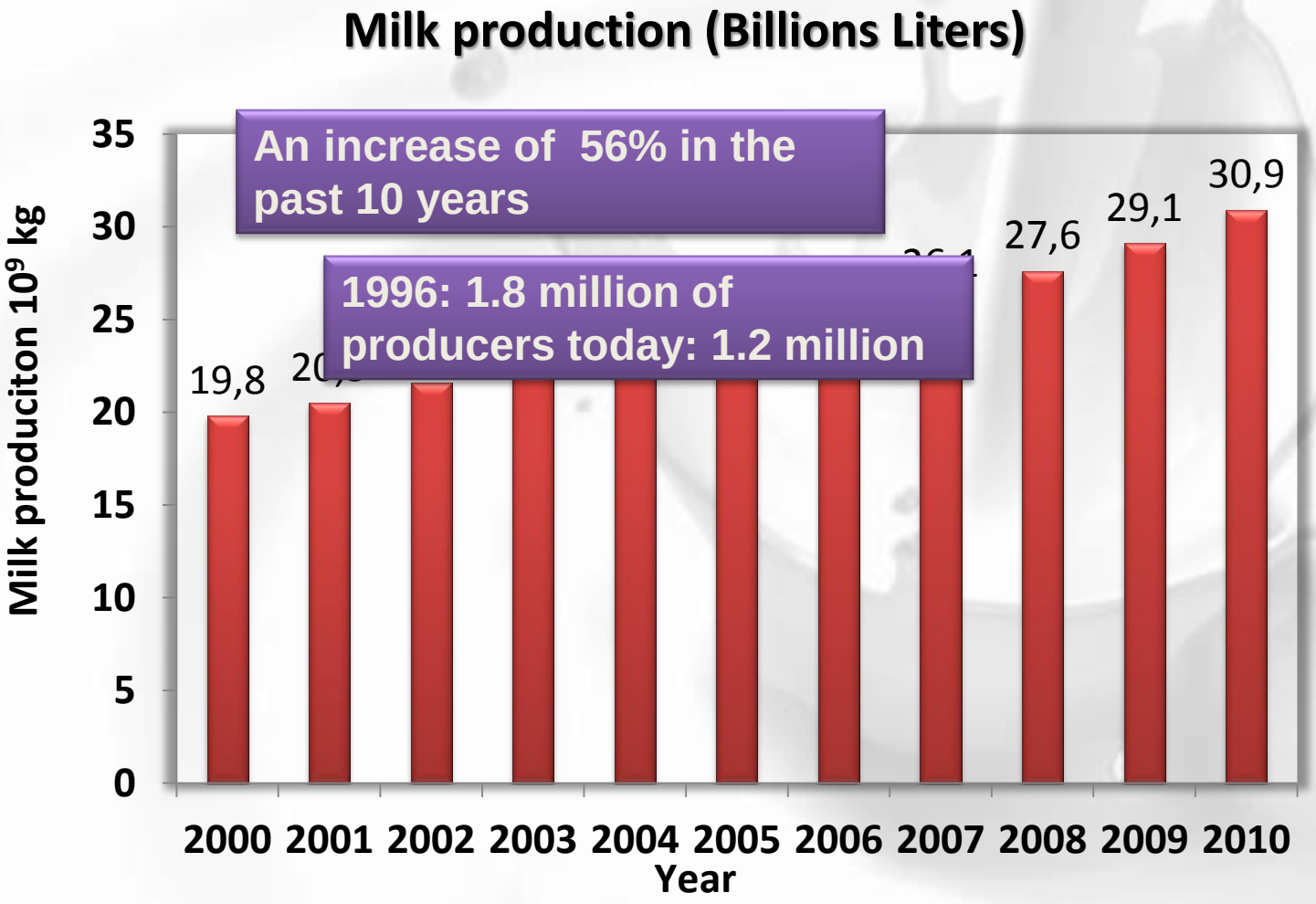

58,6
25,5
8,3
7,6
60
50
40
30
20
10
0
Holstein
Girolando
Jersey
Others
%




Divulgação / girolando.com.br

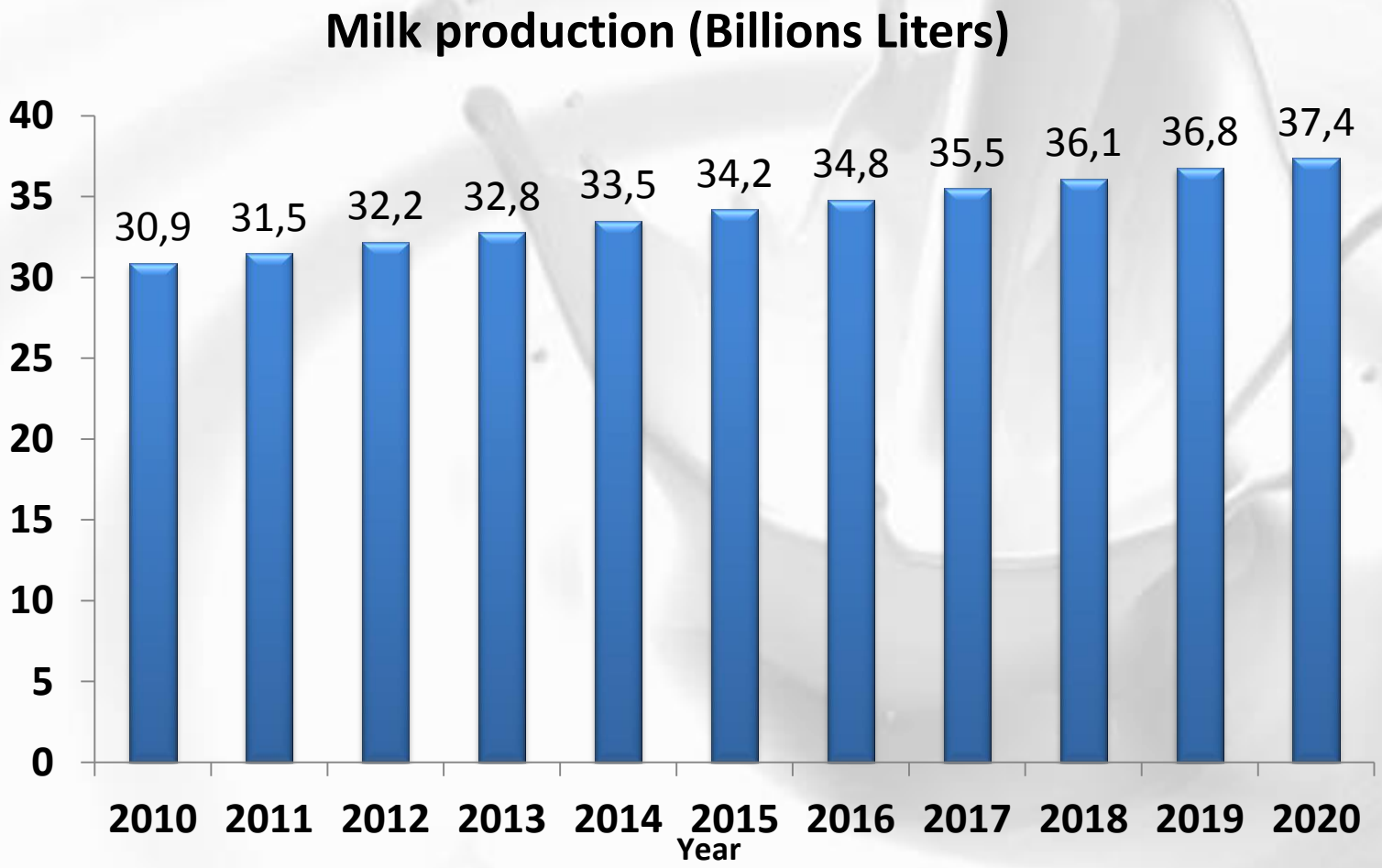

Alta Genetics

Brazilian Dairy Cattle Production



Brazilian Milk Production

Prediction for the next 10 years



Pasture based milk production

Southern Brazilian

RS

The **Pampa** are the fertile South American lowlands that include the East Argentine provinces, Uruguay and the southernmost end of Brazil, the Rio Grande do Sul, covering more than 750,000 km^2 (289,577 sq mi).

South America

RS Agriculture

- Soybean
- Corn
- Rice
- Wheat
- Grape
- Tobacco leaf
- Potato
- Cassava

Livestock

- Beef
- Dairy
- Swine
- Poultry
- Sheep



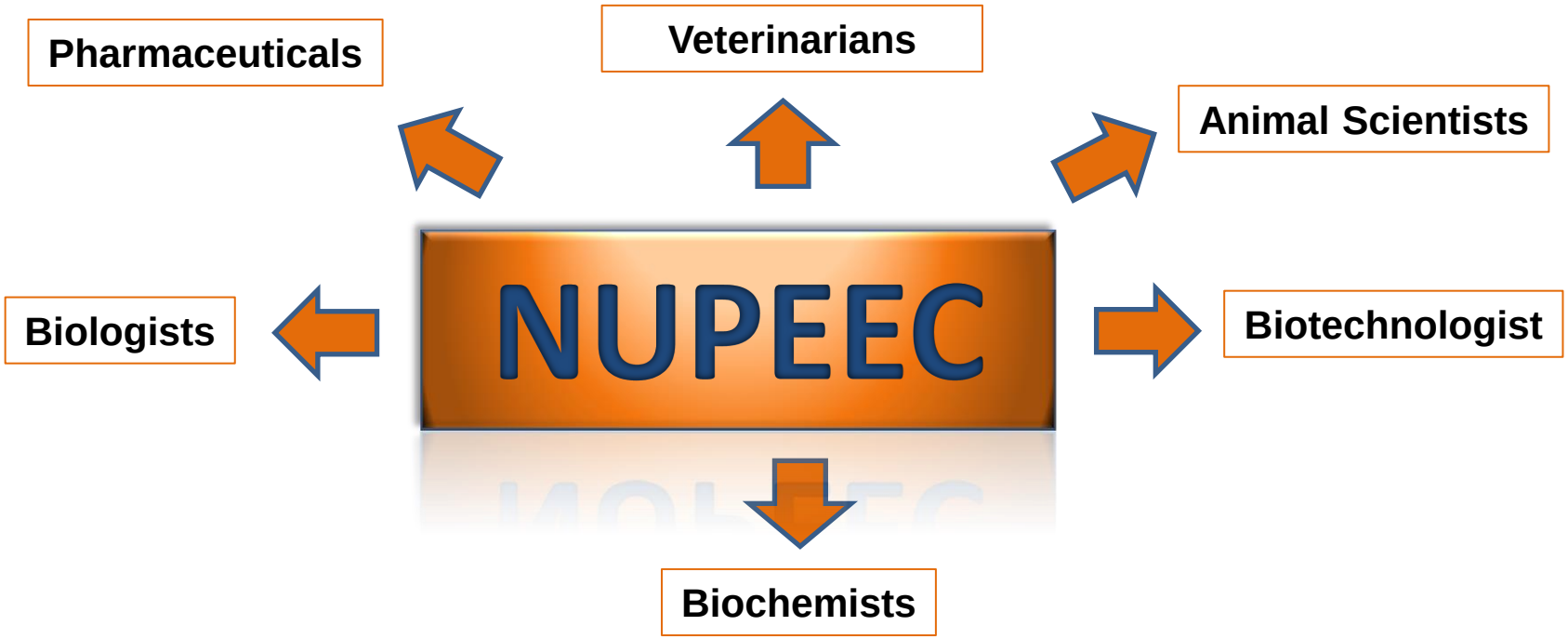


Goals

- Scenarios and situation of Brazilian beef and dairy production
- NUPEEC
- Research results
- Opportunities to research

Center for Research, Teaching and Extension in Animal Science

Our System


Pharmaceuticals
Veterinarians
Animal Scientists
Biologists
NUPEEC
Biotechnologist
Biochemists

Where we work at...

Research







Teaching

Extension

The team

www.ufpel.edu.br/nupeec

Nosso time...

The selection

The team

- **Researches**:
  - 4 Professors
    - 2 Vet Clinics
    - 1 Nutrition and Reproduction
    - 1 Biochemistry

- **Pós-docs** = 03
- **PhD** = 07
- **Master** = 14
- **Undergrads** = **28**

Total = 56 people

Events and conferences...

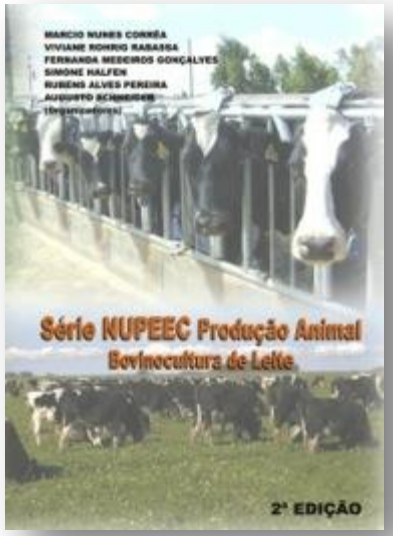
Cursos

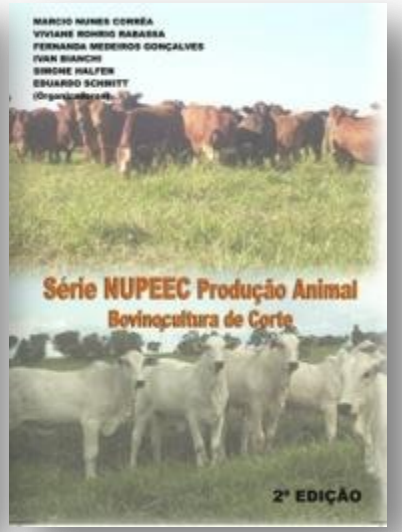
Módulos (Carga horária):

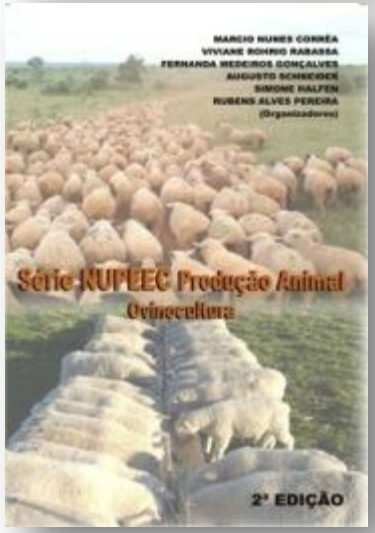
- Módulo 1: Assistência e Gestão (24h)
- Módulo 2: Sanidade (12 a 24h)
- Módulo 3: Nutrição (12 a 24h)
- Módulo 4: Manejo Reprodutivo (12 a 24h)
- Módulo 5: Diagnóstico e Experimentação (12-24h)
- Módulo 6: Ultrassonografia (24h)

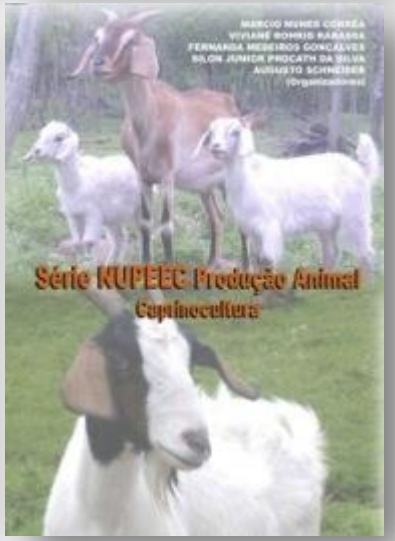
November: IV Technical Seminar

In our website...









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