BRIEF HISTORY IN THE GENUS *Urochloa*

1972 - 1984

PAST

1985 - 1987

PRESENT

FUTURE

Introduction goes back more than 530 years ago

BRIEF HISTORY IN THE GENUS *Urochloa*

PAST

1972 - 1984

Less than “70 accessions” were available

1985 - 1987

A large collecting effort was made by CIAT in collaboration with international and national institutions of six East African countries

Urochloa and *Megathyrsus*

PRESENT

- ✓ **From CIAT headquarters: Interspecific *Urochloa – U. humidicola – Megathyrsus maximus* were sent for agronomic evaluation to Grupo Papalotla.**
- ✓ **A total amount of 400 hybrids were evaluated**
- ✓ **Mexico, Brazil, Thailand and Bolivia**

Three main forage crops for the tropical world

PRESENT

Interspecific - Urochloa (decumbens/brizantha/ruziziensis)

Characteristics: Rusticity, tolerant to low fertility and acid soils, waterlogging.

Target Traits: tolerance to biotic pests, abiotic stress, forage quality and seed production.

Urochloa humidicola

Characteristics: Rusticity, BNI, tolerant to low fertility and acid soils and waterlogging.

Target Traits: Nutritional quality, establishment, abiotic stress, and seed production.

Megathyrsus maximus (syn. *Panicum maximum*)

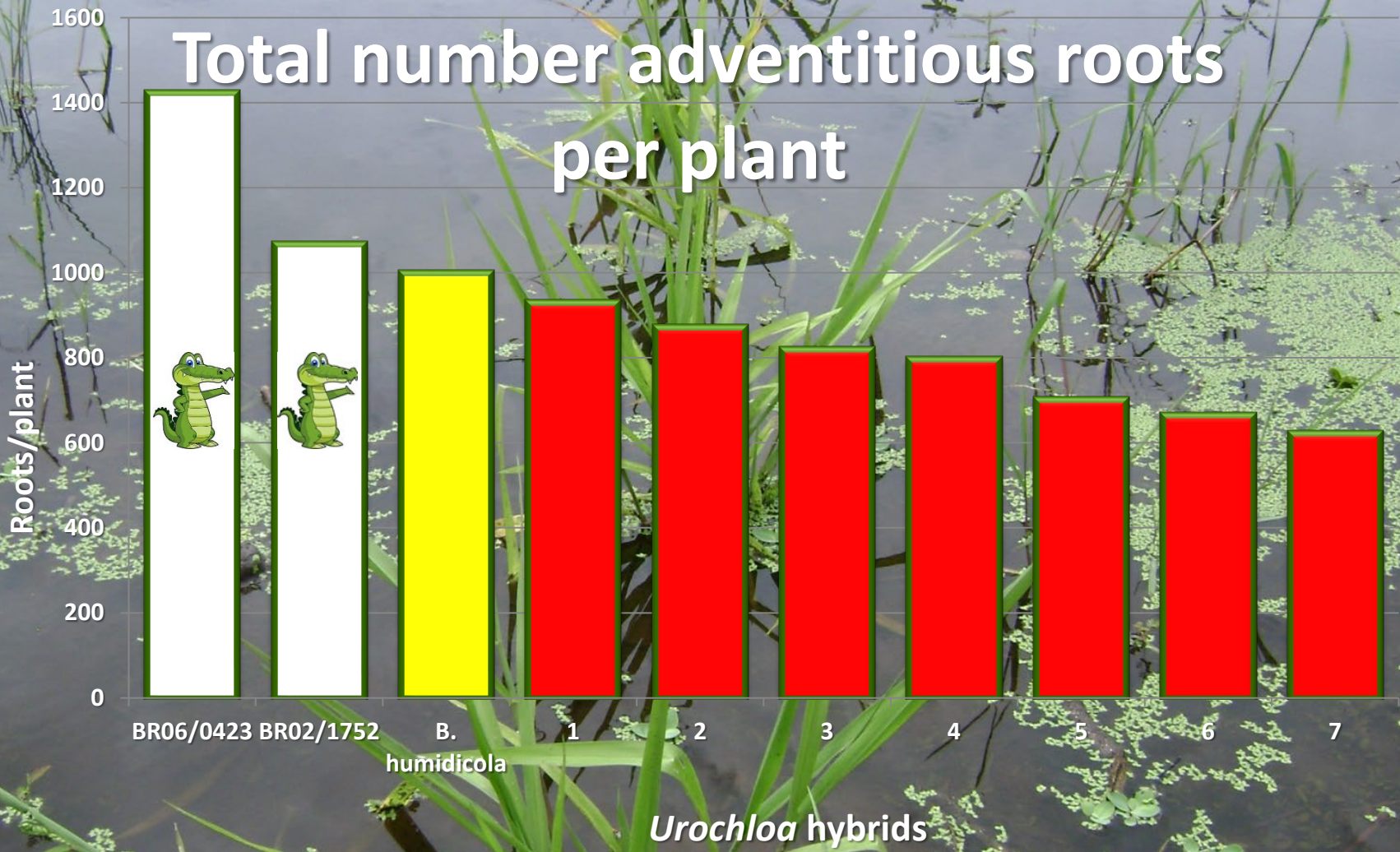
Characteristics: high forage quality and biomass production.

Target Traits: Abiotic stress tolerance.

¿ ?

Research in water logging tolerance

Total number adventitious roots per plant




aerenchyma

BRIEF HISTORY IN AMERICA

PRESENT

CERRADO - BRAZIL

Animal per ha^{-1}	26
ADG g d^{-1}	777

BRIEF HISTORY IN AMERICA

PRESENT

LLANOS - COLOMBIA

Stocking rate	ADG	Grazing system	
Cows	Mulato II	Grazing	Resting
ha^{-1}	$kg\ d^{-1}$	Days	
5	0.921	1 - 2	35 - 40

PRESENT

Cultivar	Milk production kg caw^{-1} d^{-1}
Mulato II	15.3
Marandu	14.3
Piatã	4.7
Xaraes	3.6
Piatã	8.1

PRESENT

Urochloa hybrid cv. Camello, have demonstrated high carbon accumulation in deeper soil depth

Mean carbon stock (t ha^{-1}) along soil depth levels and genotype
A) Mean carbon stock overall visualization

Priority target areas

PRESENT

Production areas in Latin America

190 Mha

Total pasture area only in Brazil

120 Mha

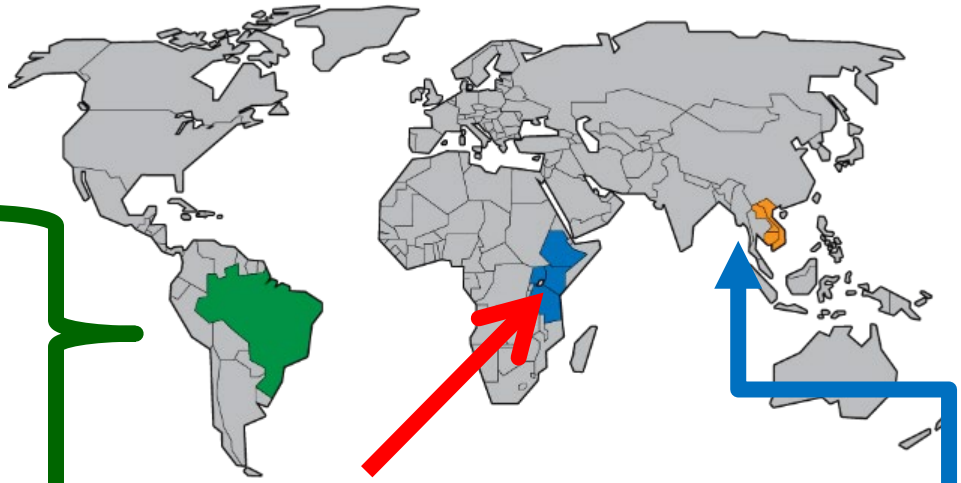
Planted pastures

8 Mha

Are renewed each year

U$D 600M

Seed market value in Brazil



Africa: *2M ha of Brachiaria required. Based on actual amount of animals in 48 Sub-Saharan African countries.
*800,000 – 1,800,000 smallholder dairy farms (1 to 3 cows), producing 80% of the milk.

*Cut and carry system.

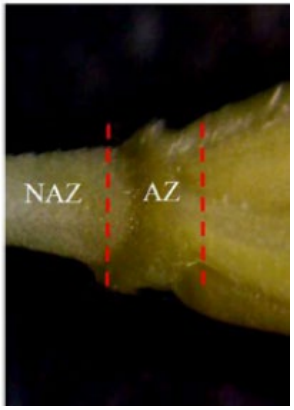
Market area preferences

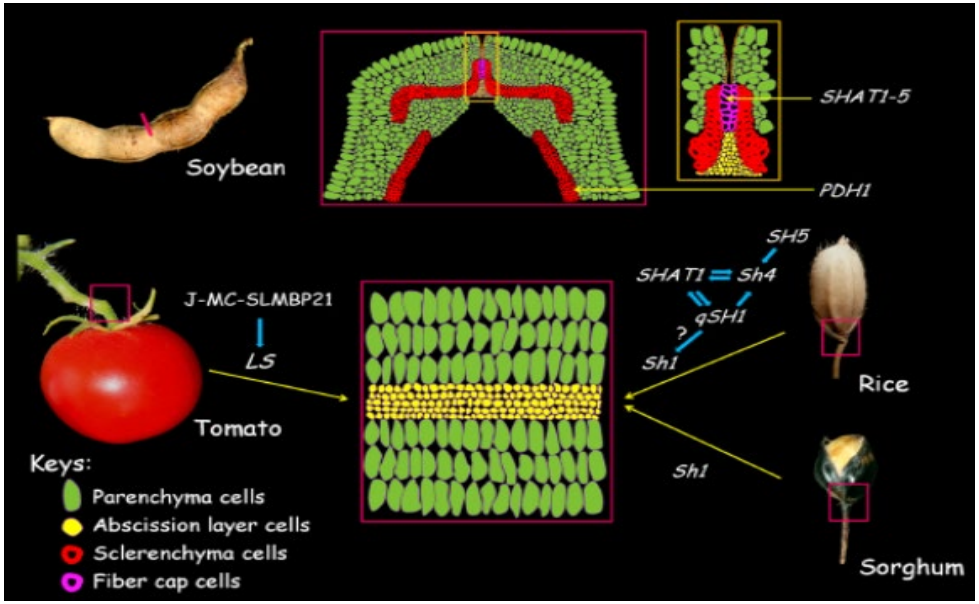
Latin America: The goal: maintain the nutritional quality of the *U. ruzisiensis* and adaptation of *U. decumbens* while improving biotic resistances to Spittlebug and *Rhizoctonia solani.*

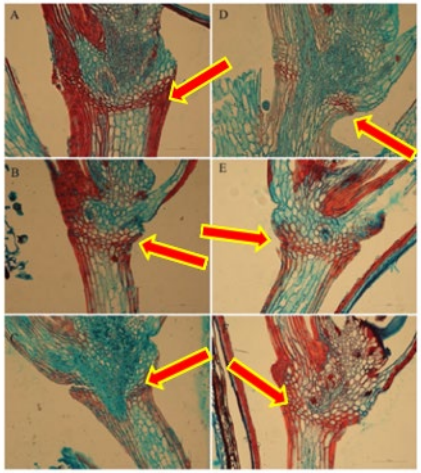
Asia: Cut and carry system.

New hybrids of *Urochloa* and *Megathyrsus*

Urochloa, reproduces sexually, even so, it needs the pollen grain to form, to facilitate the polar nucleus of the embryo sac and produce the endosperm of the seeds.







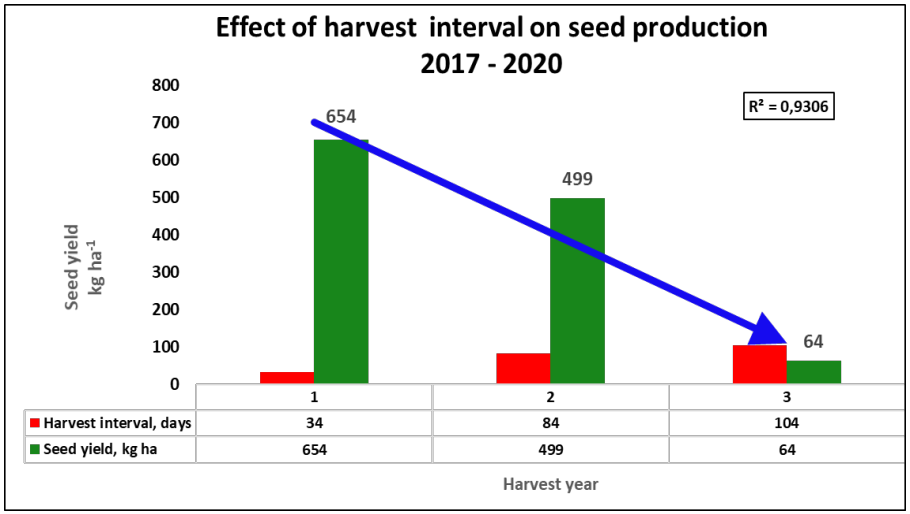
Leonurus sibiricus

Lolium perenne

Abscission zones in *U. humidicola*, cv. Mulato II y cv. Marandu

Effect of harvest interval on seed losses

Hybrid	Oaxaca 4 masl	Chiapas 750 masl
	Pure seed, grams por plant	
GP - 01	5.8	12.3
GP - 02	11.6	19.0
GP - 03	8.2	17.8
GP - 04	4.0	13.3
GP - 05	5.9	13.6
Average	7.1	15.2



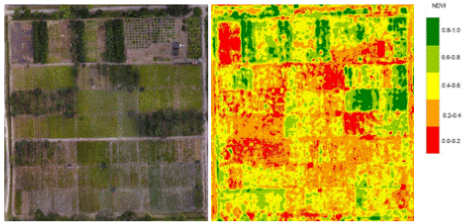
Effect of the length of harvesting on seed losses

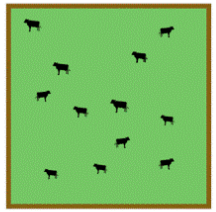
Harvest days	Seed loss kg ha^{-1} day^{-1}	
	Year 1	Year 2
0	-	-
10	38 a	47 a
20	20 b	24 b
30	13 c	16 c
40	12 d	13 c
50	9 e	10 c

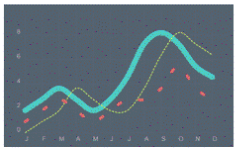
Soil loss in the Cerrado, due to sweep harvest system, are very high 10 - 12 t ha^{-1} year^{-1}

Sustainable livestock production ‘Technological innovations’

- Remote sensing (drones, satellites) to record changes in forage quantity and quality over time
- Sensors to record movement, behaviour, feed intake from animals
- These two combined will improve pasture management, animal diet and welfare







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