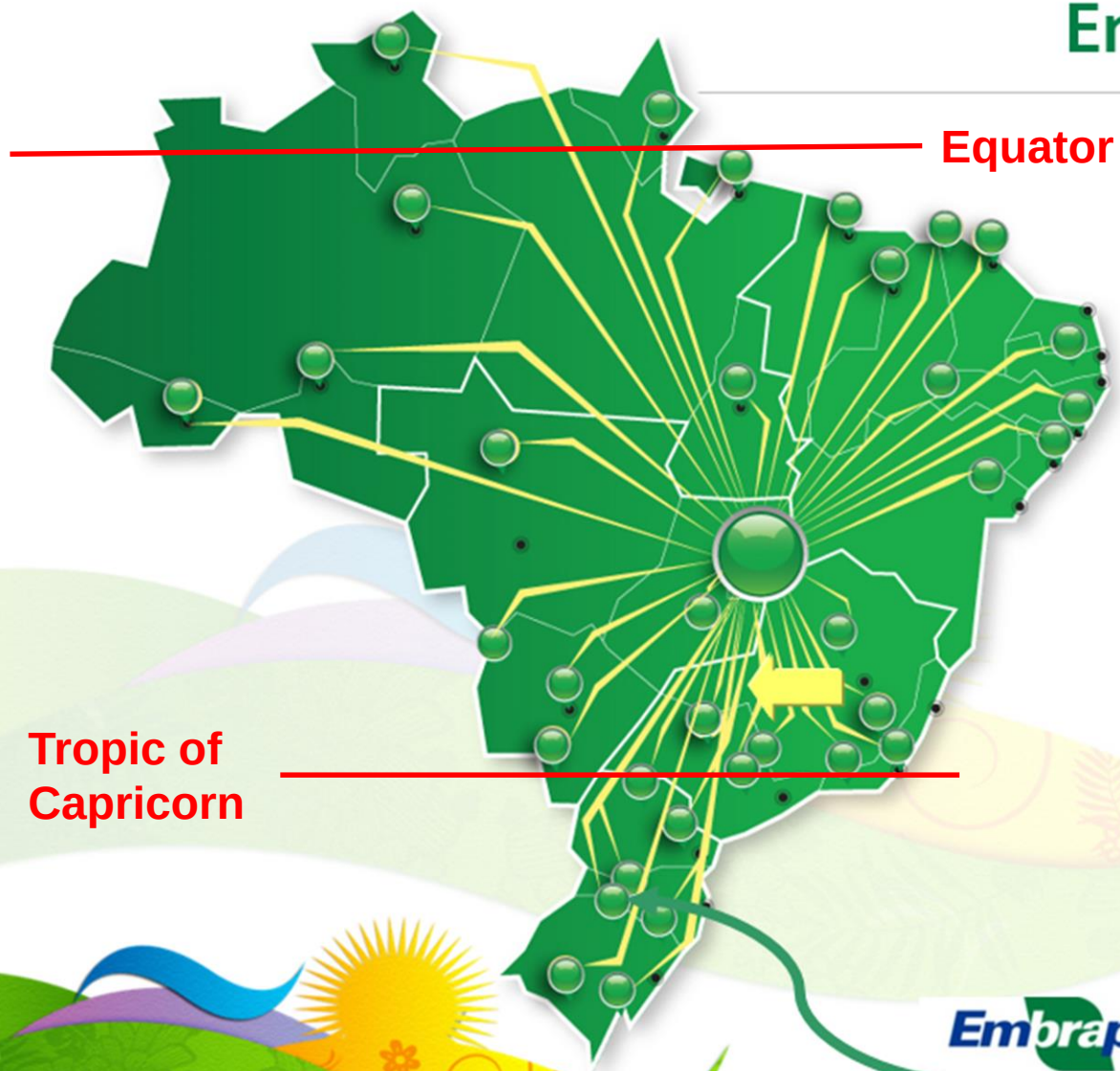
A Brazilian overview about oat cultivars for ground cover and grazing

Alfredo do Nascimento Junior

Plant Breeder - Embrapa Wheat, Passo Fundo, Brazil

Embrapa Wheat enables innovative solutions for sustainability and competitiveness of chains and productive agricultural wheat systems, other winter cereals (oats, rye, barley and triticale) and canola in Brazil.

Embrapa's 47 Centers



Headquarters

National Thematic Centers

National Product Centers

Agroforestry and Ecoregional Centers

Services

Embrapa Wheat

28º S

Embrapa Wheat is reference in Crop-Livestock Integration technology, the new technologies have guaranteed the income generation with return on grains, meat or milk.

Integrated Crop-Livestock System

Intensification/Optimization of Winter (season) cultivation Intensive systems of sustainable production

Cereals : Grain, Forage, Silage

No Tillage

(direct sowing with minimal soil disturbance)

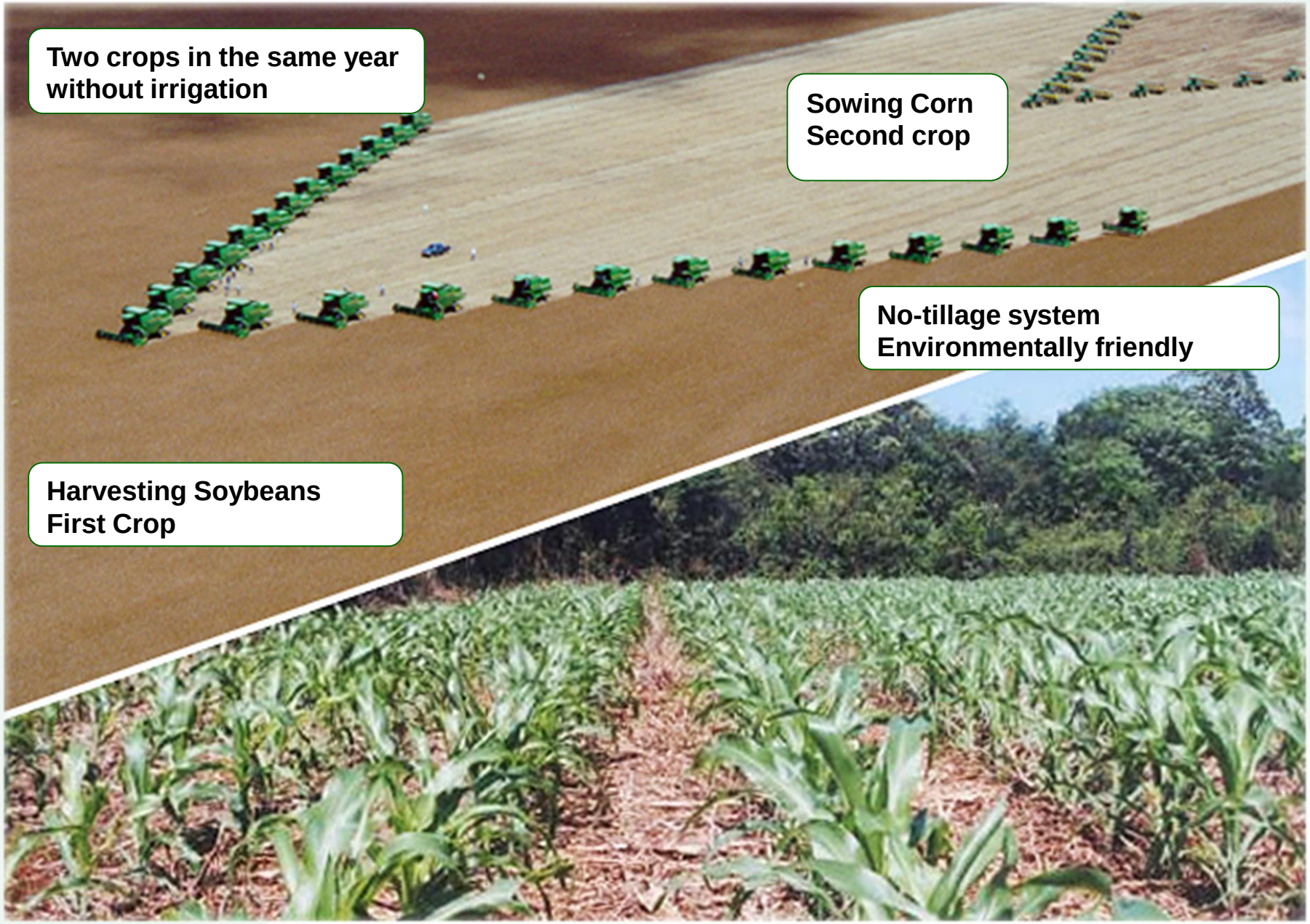
Instead of:
Conventional system

Embrapa Wheat

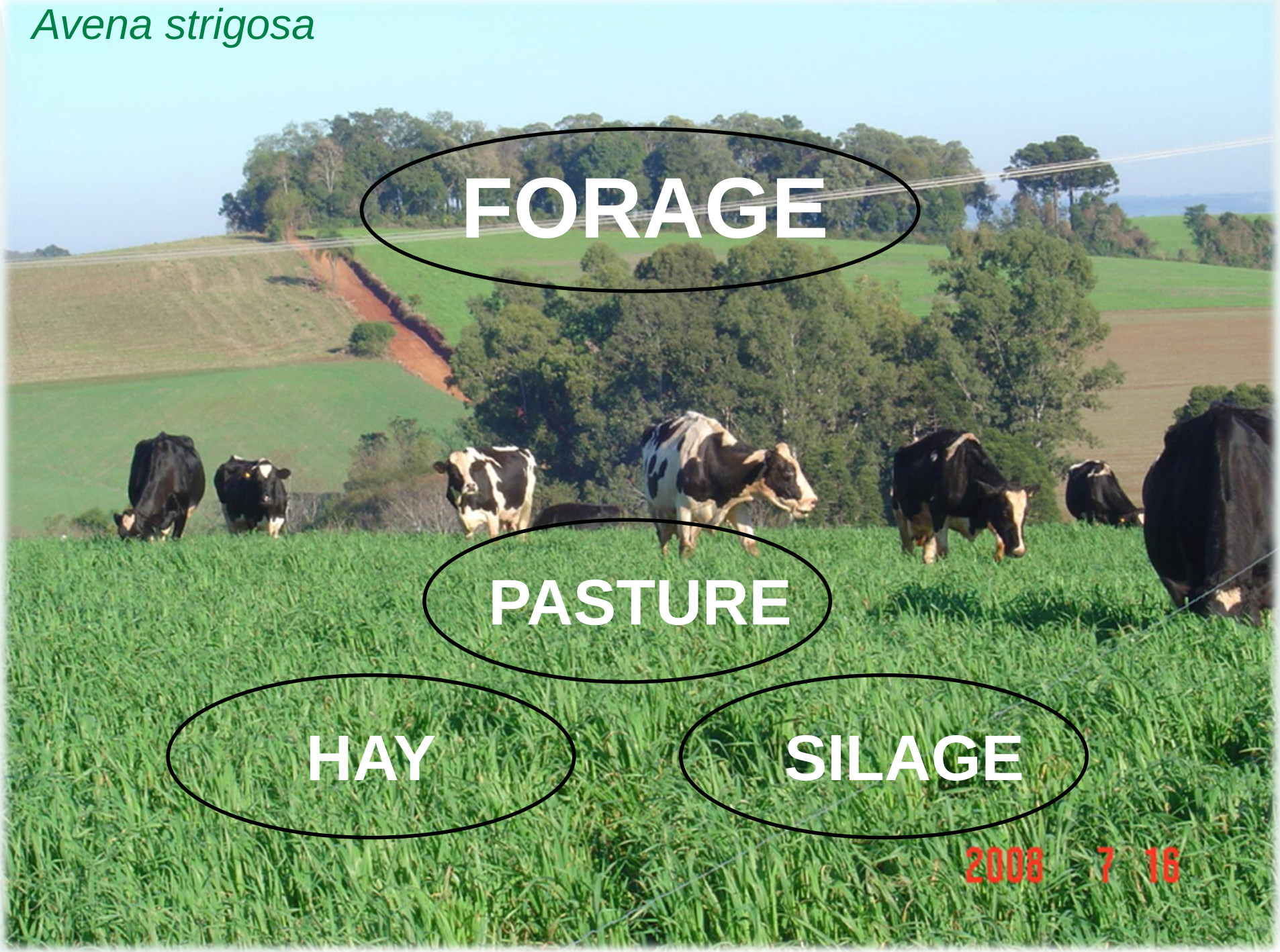
No -Tillage System

» The system avoids soil losses of up to 1 billion ton/yr

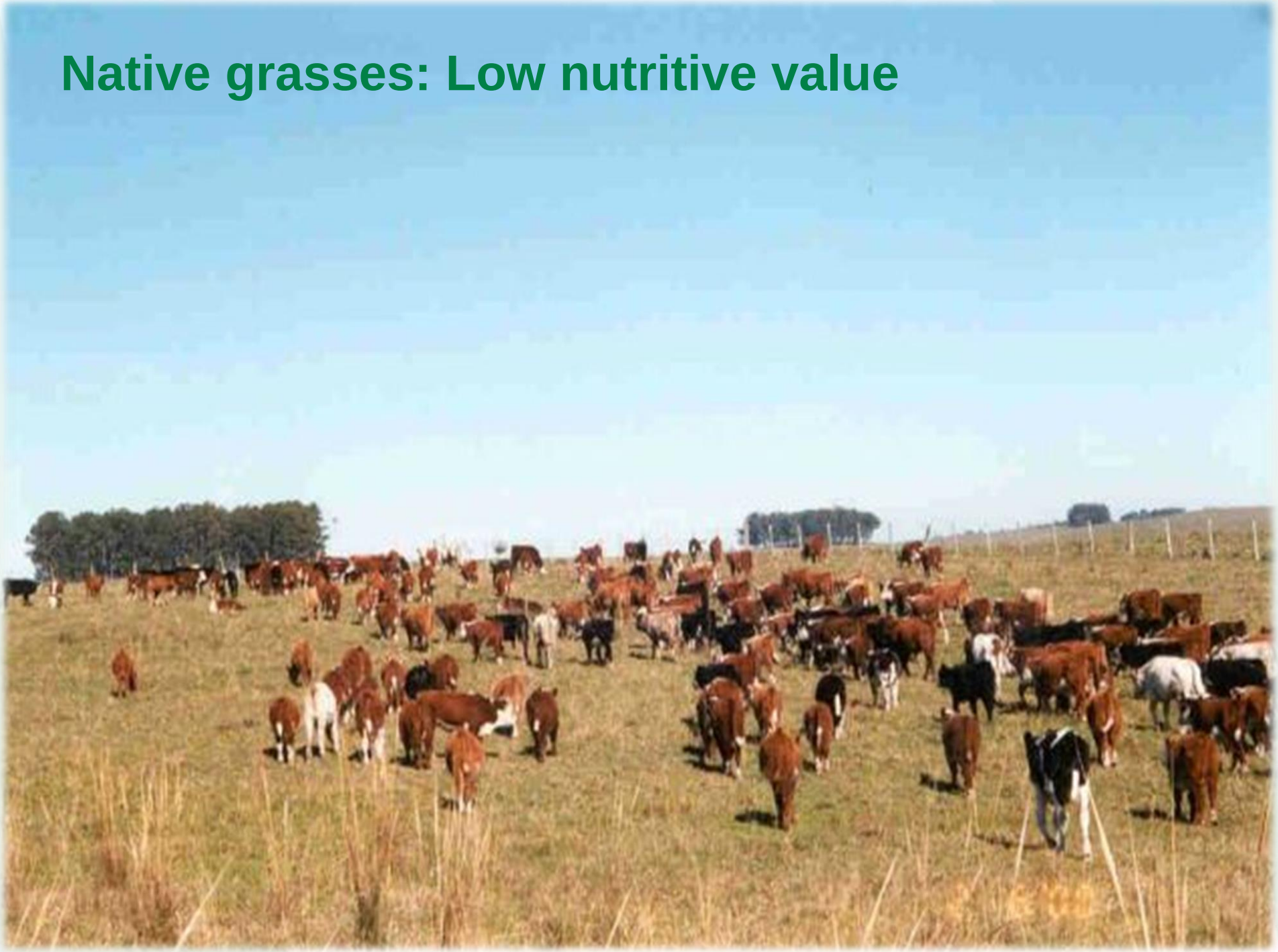
No-tillage System



Avena strigosa



Native grasses: Low nutritive value



Native grasses: Low nutritive value

What we want to?

High cultivar adaptation and nutritive value

Better adaptation, higher yield and nutritional value

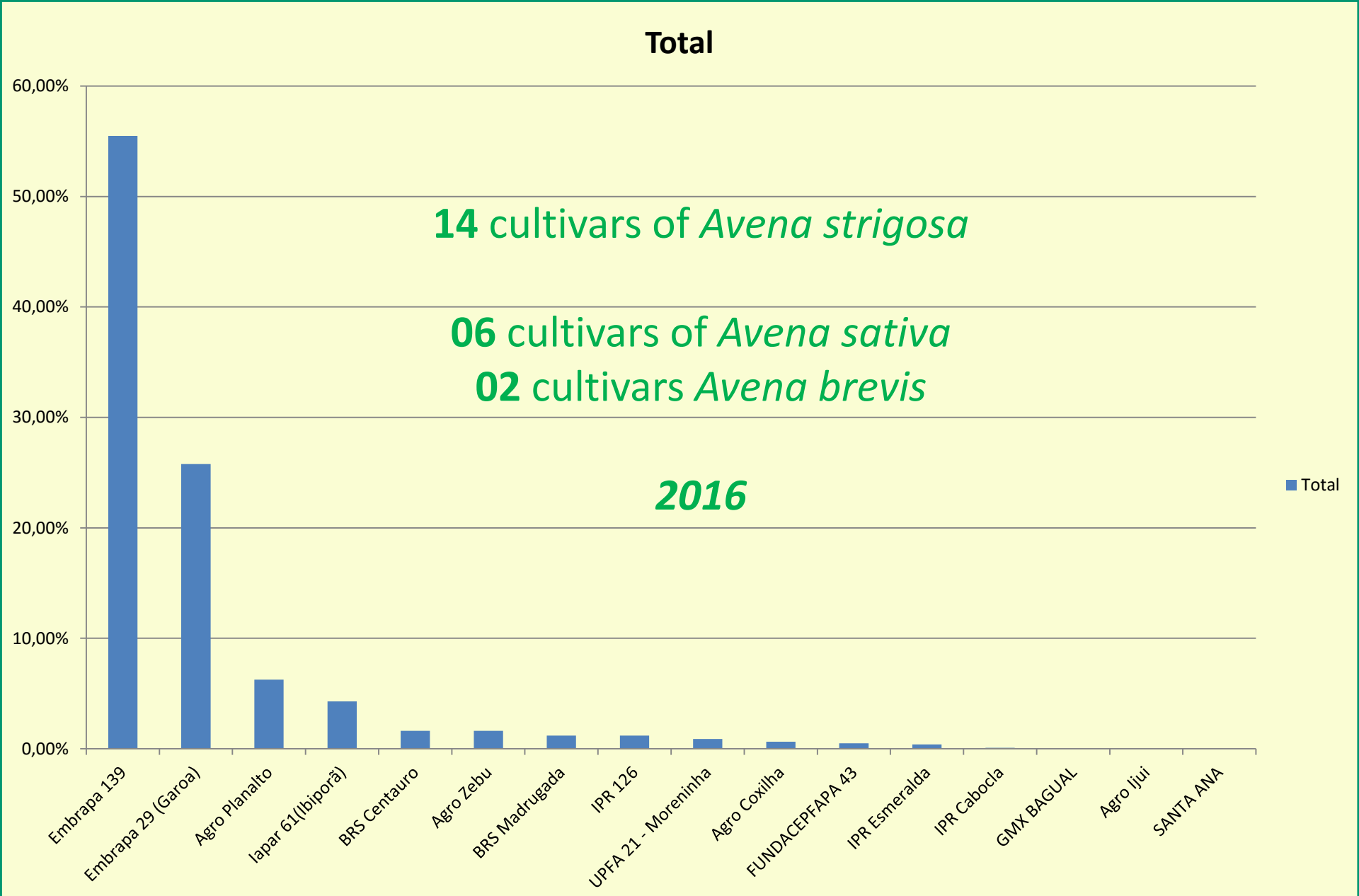
Higher dry matter

Oat straw production in a no-tillage system

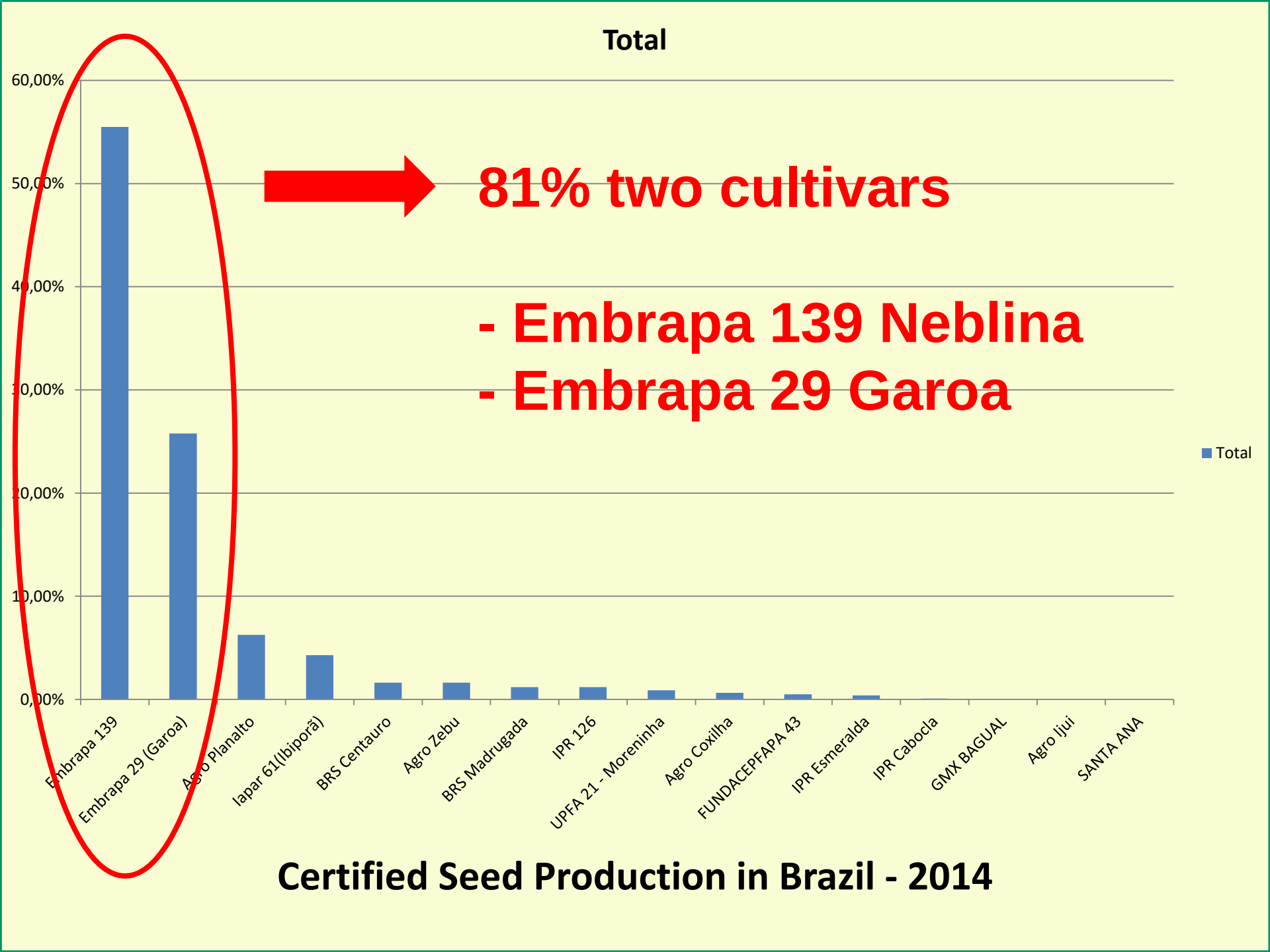
	uf	Dados										
	RS		SC		PR		MS		SP		Total E área (ha)	Total %
cultivar	E área (ha)	%	E área (ha)	%	E área (ha)	%	E área (ha)	%	E área (ha)	%		
Embrapa 139	37.392	76%	2.054	28%	950	6%		0%	262	37%	40.658	55%
Embrapa 29 (Garoa)	2.176	4%	2.987	41%	13.141	84%	140	74%	449	63%	18.893	26%
Agro Planalto	3.575	7%	601	8%	359	2%	50	26%		0%	4.585	6%
Iapar 61(Ibiporã)	1.957	4%	671	9%	520	3%		0%		0%	3.148	4%
BRS Centauro	789	2%	370	5%	33	0%		0%		0%	1.192	2%
Agro Zebu	673	1%	381	5%	138	1%		0%		0%	1.192	2%
BRS Madrugada	535	1%	95	1%	250	2%		0%		0%	880	1%
IPR 126	815	2%	62	1%		0%		0%		0%	877	1%
UPFA 21 - Moreninha	643	1%		0%		0%		0%		0%	643	1%
Agro Coxilha	472	1%		0%		0%		0%		0%	472	1%
FUNDACEPFAPA 43	365	1%		0%		0%		0%		0%	365	0%
IPR Esmeralda	10	0%	119	2%	156	1%		0%		0%	285	0%
IPR Cabocla		0%		0%	57	0%		0%		0%	57	0%
GMX BAGUAL	25	0%		0%		0%		0%		0%	25	0%
Agro Ijui	3	0%		0%		0%		0%		0%	3	0%
SANTA ANA	2	0%		0%		0%		0%		0%	2	0%
Total Geral	49.431	100%	7.340	100%	15.603	100%	190	100%	711	100%	73.276	100%

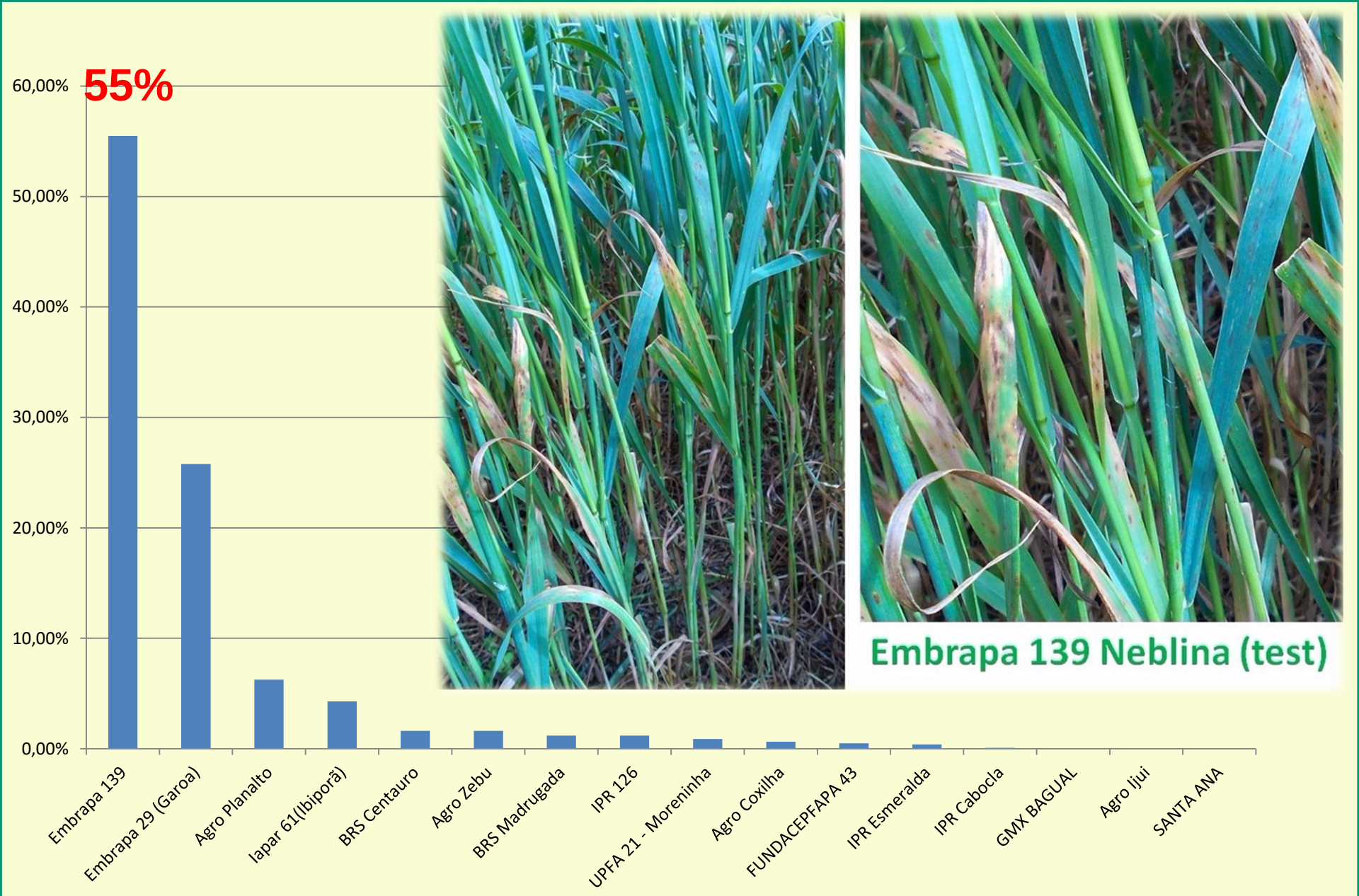
Certified Seed Production in Brazil – 2014

14 cultivars of *Avena strigosa*



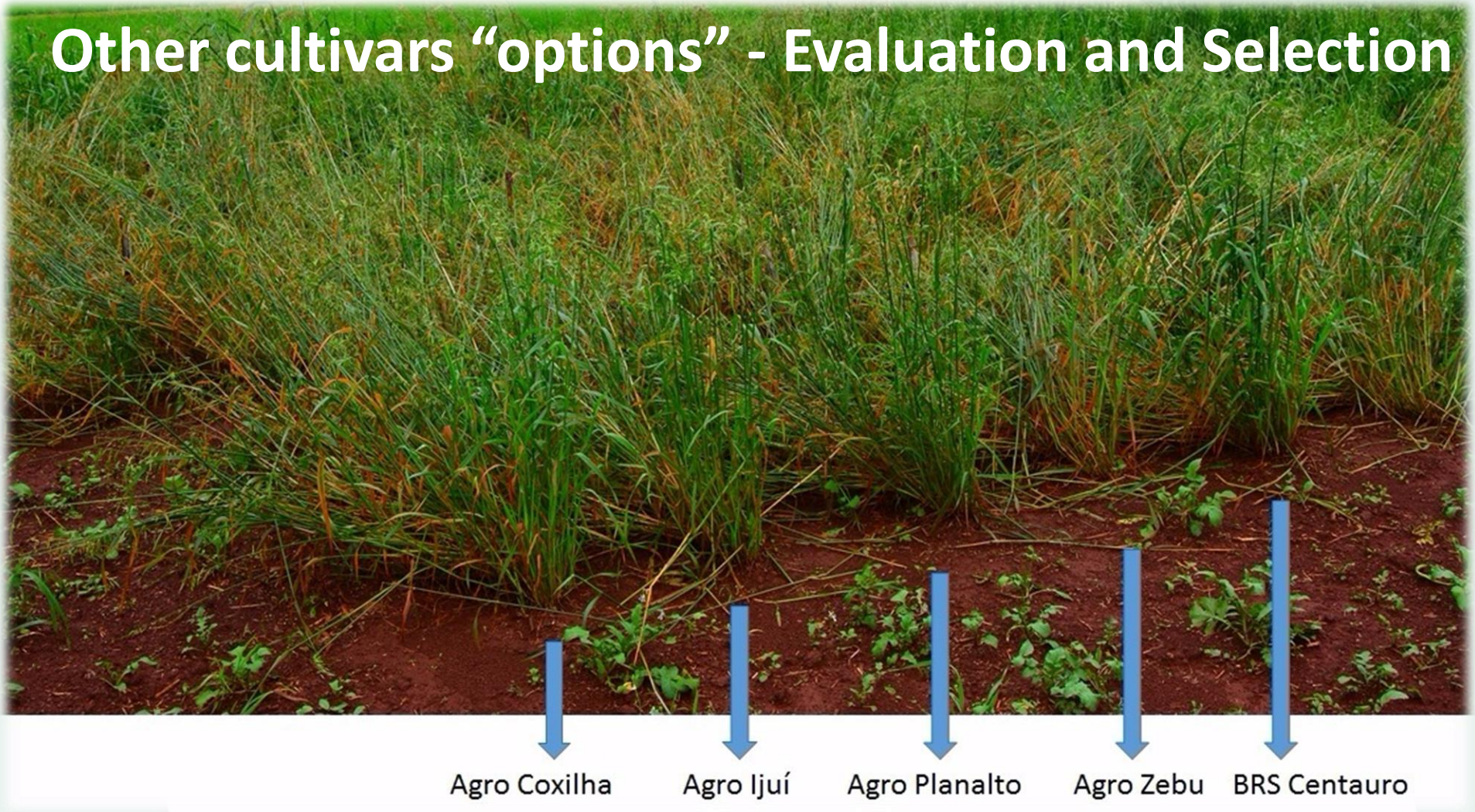
Certified Seed Production in Brazil - 2014


Total
60,00%
50,00%
40,00%
30,00%
20,00%
10,00%
0,00%
Embrapa 139
Embrapa 29 (Garoa)
Agro Planalto
Iapar 61(Ibiporã)
BRS Centauro
Agro Zebu
BRS Madrugada
IPR 126
UPFA 21 - Moreninha
Agro Coxilha
FUNDACEPFAPA 43
IPR Esmeralda
IPR Cabocla
GMX BAGUAL
Agro Ijui
SANTA ANA
Total
81% two cultivars
- Embrapa 139 Neblina
- Embrapa 29 Garoa
Certified Seed Production in Brazil - 2014



Certified Seed Production in Brazil - 2014

Other cultivars “options” - Evaluation and Selection



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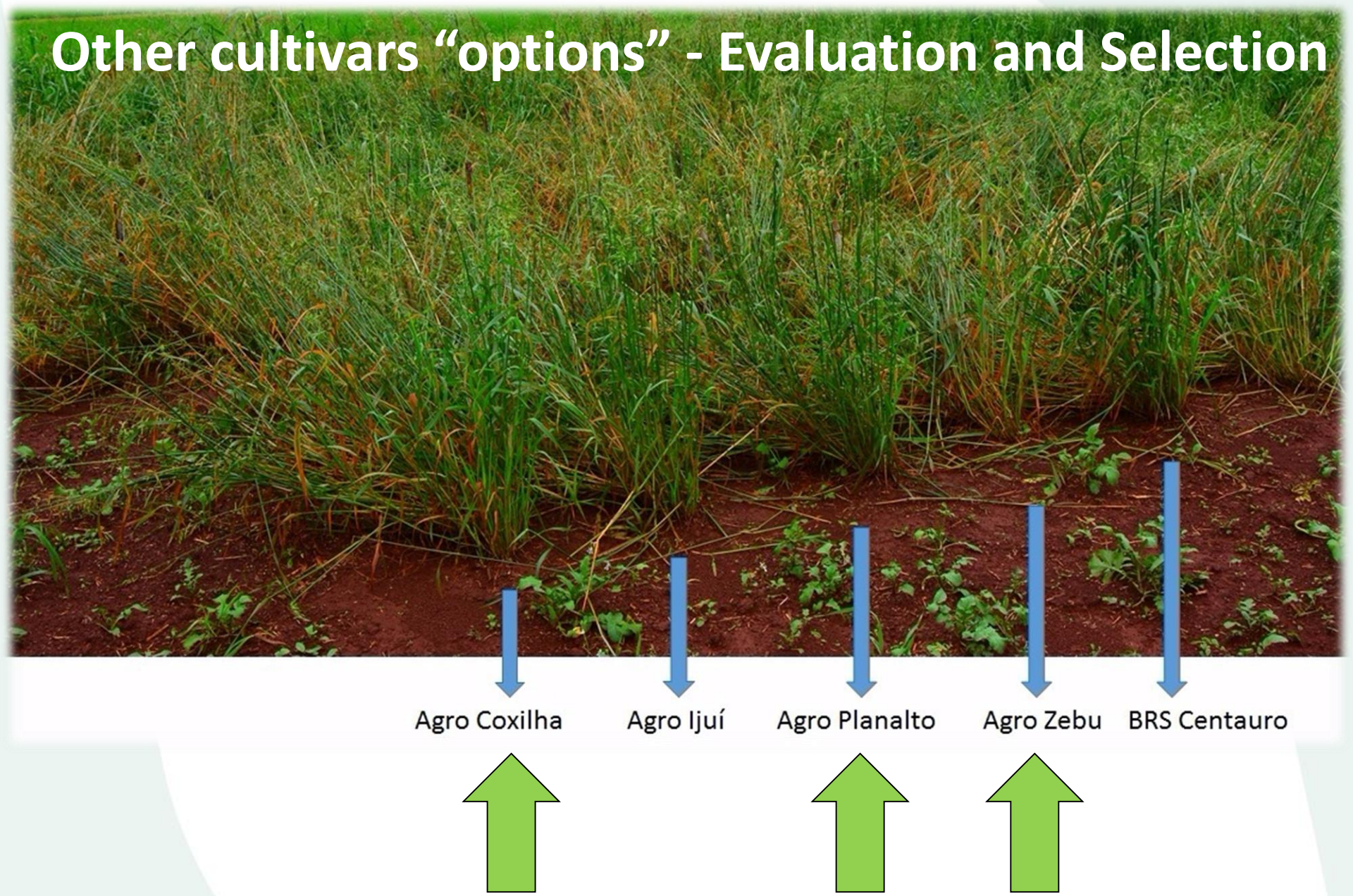

Oat Field Book 2016 – 10th International Oat Conference

Cultivars - Evaluation and Selection

Agro Planalto Agro Zebu BRS Centauro BRS Madrugada

New genotypes - Evaluation and Selection

Participatory breeding – Partners (farmes)

Participatory breeding – (Farmes Association)

Field evaluation

Avena strigosa and A. *sativa*

Campo Mourão city – PR (June, 2016).

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Challenges for oat breeding!!

- Freeze tolerance

- Diseases resistance

- Insect Resistance (BYDV)

- Plant uniformit

Freeze Injury

Avena strigosa – Campos Novos city – SC (August, 2010).


... Alfredo do Nascimento Jr ©
Field test for Freeze Injury *Avena strigosa* and A. *sativa*
Passo Fundo – RS (May, 2016).

Field test for Freeze Injury

Avena strigosa and A. *sativa*

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Freeze Injury

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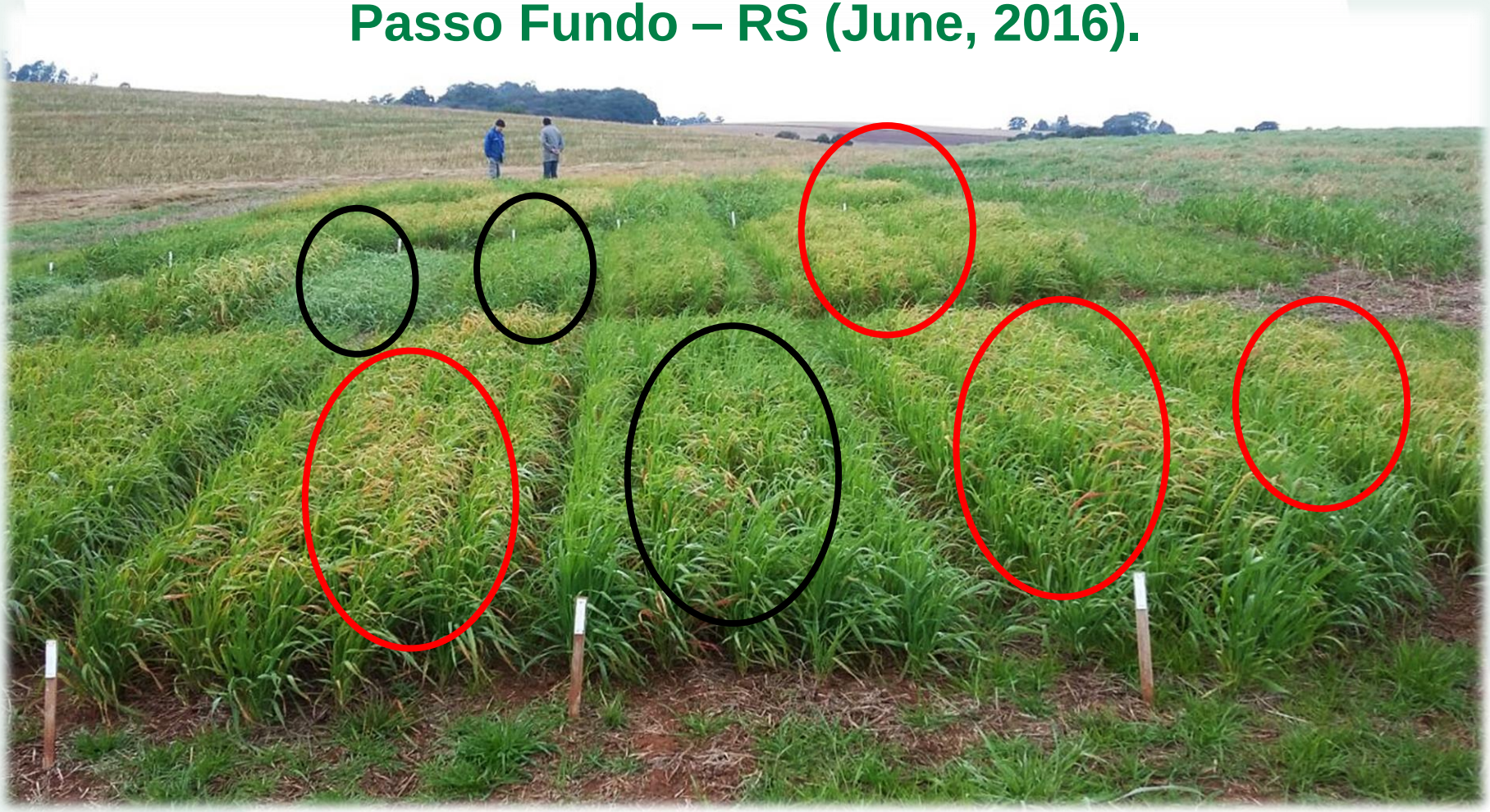
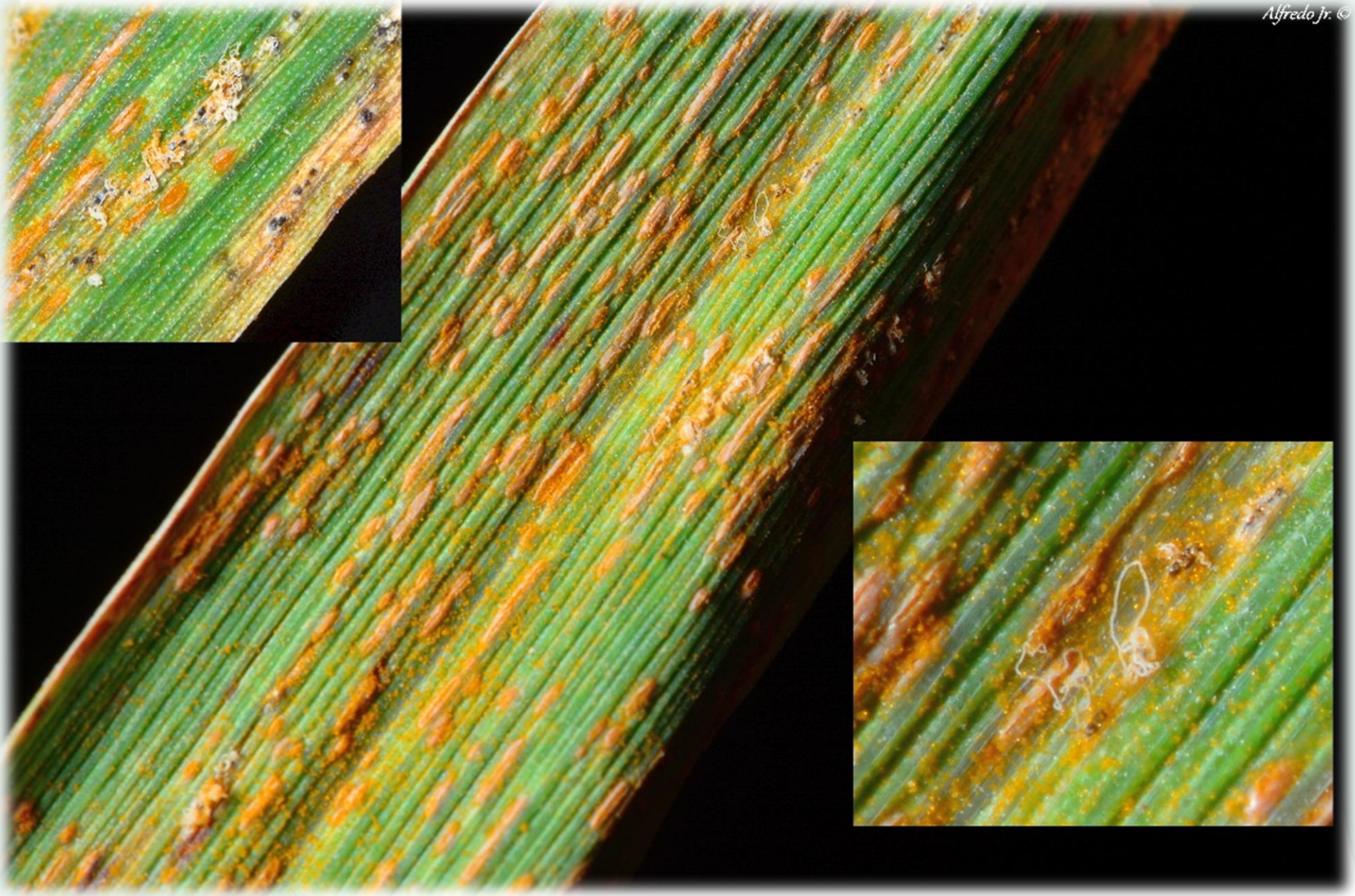


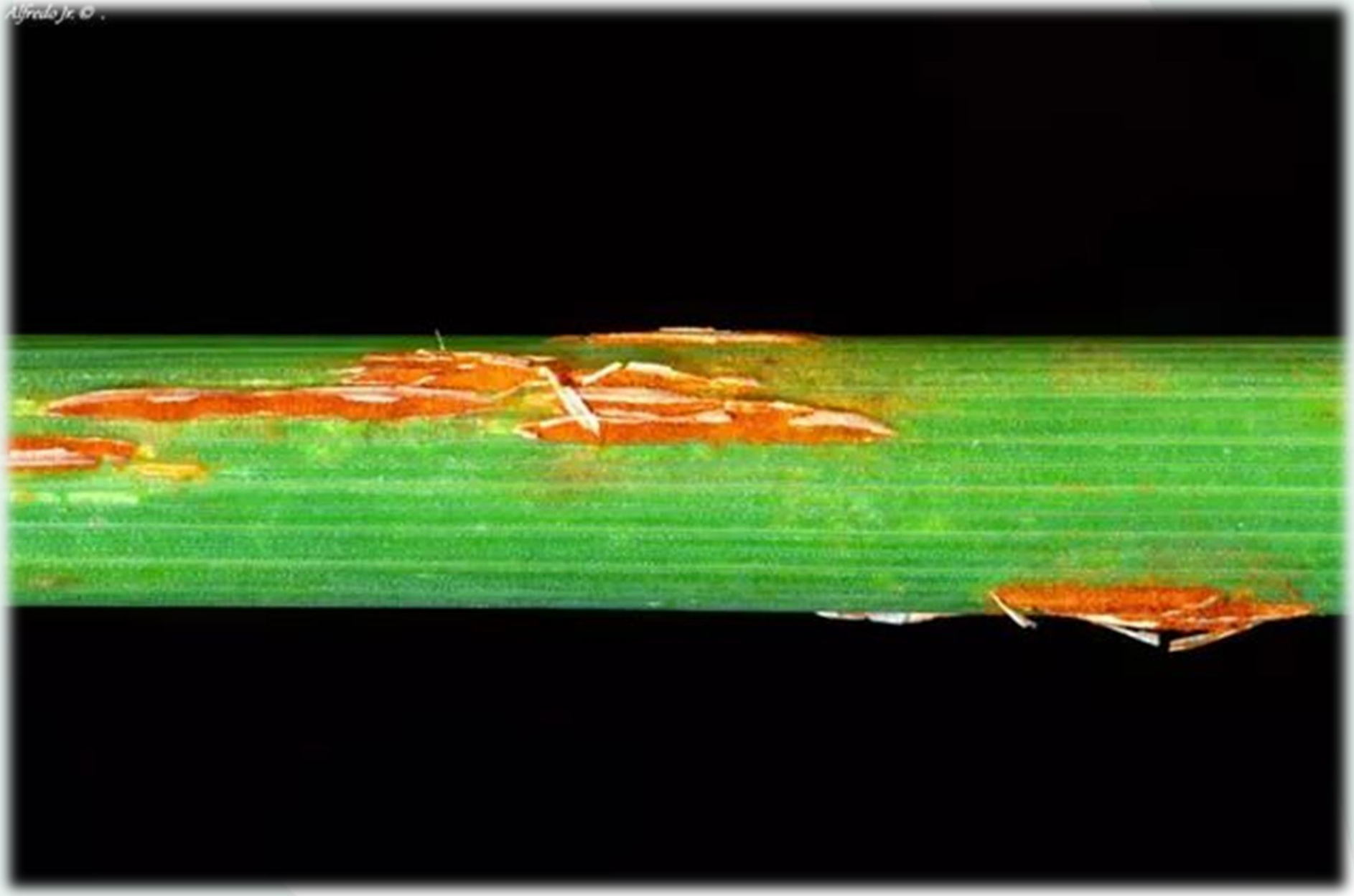
Diseases evaluation

Oat – powdery mildew

Oat – Leaf rust



Oat – Stem rust



Oat – Foliar diseases

Oat – Foliar diseases

BLAST- *Magnaporthe grisea* (*Pyricularia grisea*)

Wheat / triticale / rye – plant disease (mainly on spikes)

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Wheat – plant disease (mainly on spikes)

BLAST- *Magnaporthe grisea* (*Pyricularia grisea*)

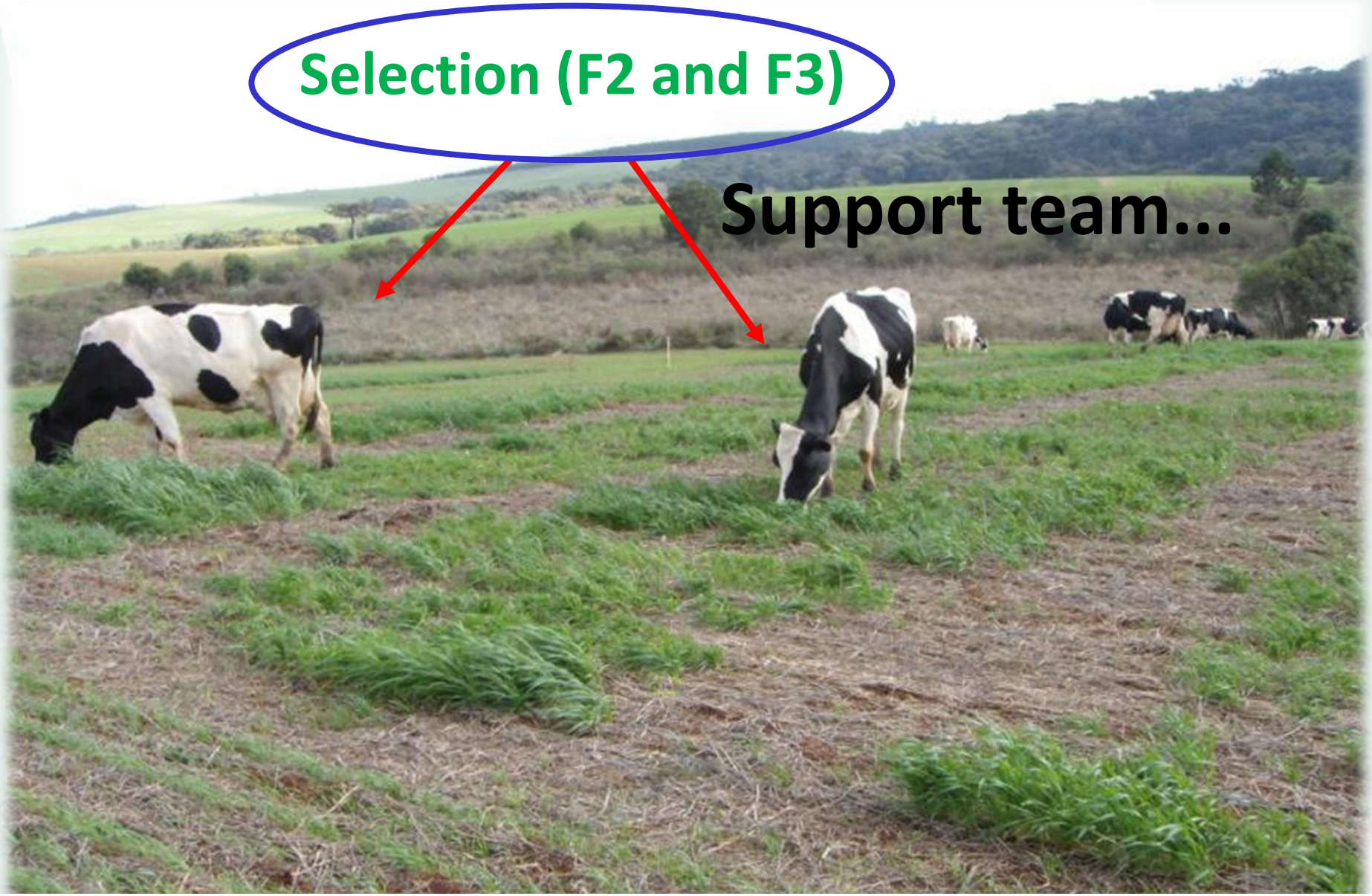
Oat – Foliar diseases

Blast - Magnaporthe grisea (Pyricularia grisea)

Oat breeding for forage – dual purpose

Selection (F2 and F3)

Oat breeding for forage – dual purpose



Late types, weak roots, no re-growth (they are eliminate)

Oat breeding for forage – dual purpose

Oat breeding for forage – dual purpose

New lines - Evaluation and Selection

Fotos: Alfredo do Nascimento Júnior

New lines – Seed Production

New cultivar - Seed production

Spread knowledge

Thank You

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