Alfalfa breeding in Argentina

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INTA
Secretaría de Agroindustria
Ministerio de Producción y Trabajo
Presidencia de la Nación

Cultivar registration by decades

1981/1990	1991/2000	2001/2010	2011-2018	Total
62	**168**	**135**	**61**	**426**

INTA´s varieties
15% market share

Origin

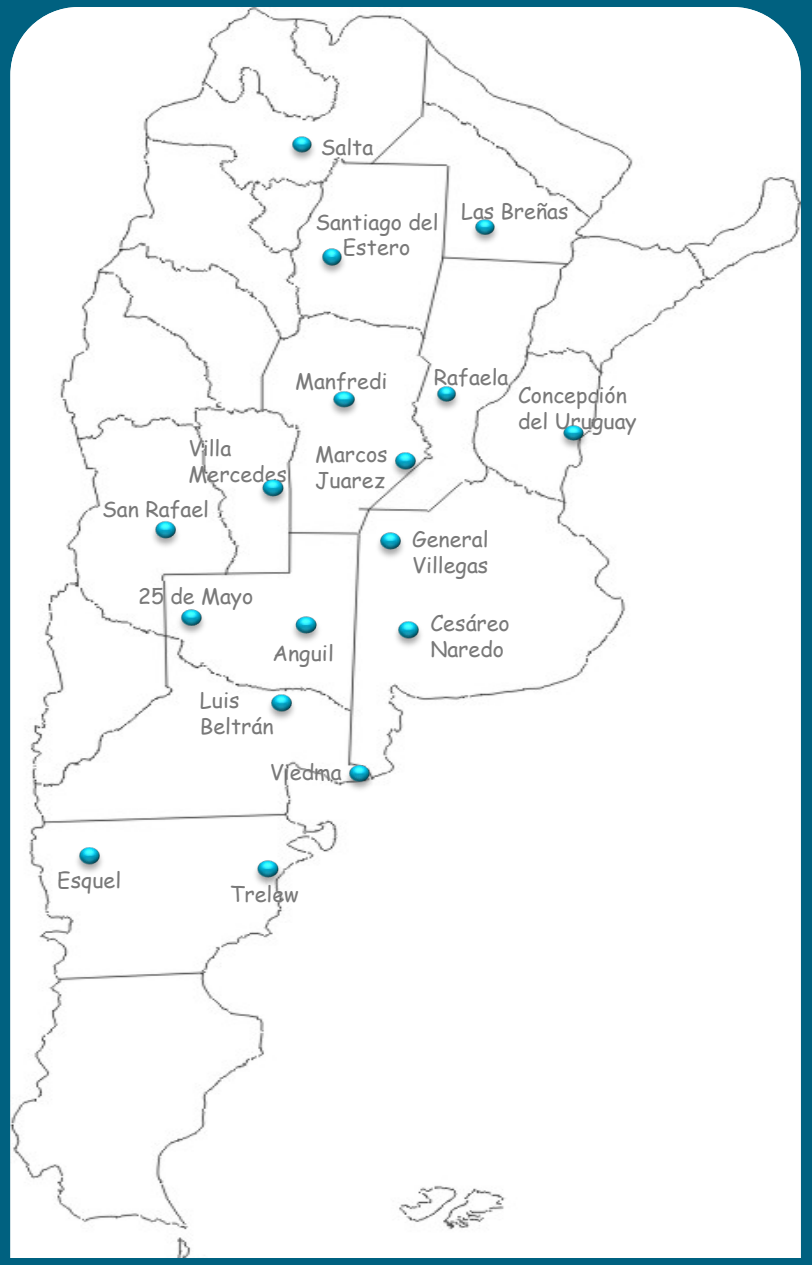
- **Argentina: 134**
- **USA: 244**
- **Australia: 27**
- **France 12**
- **Others: 9**

About **120** cv in the market:

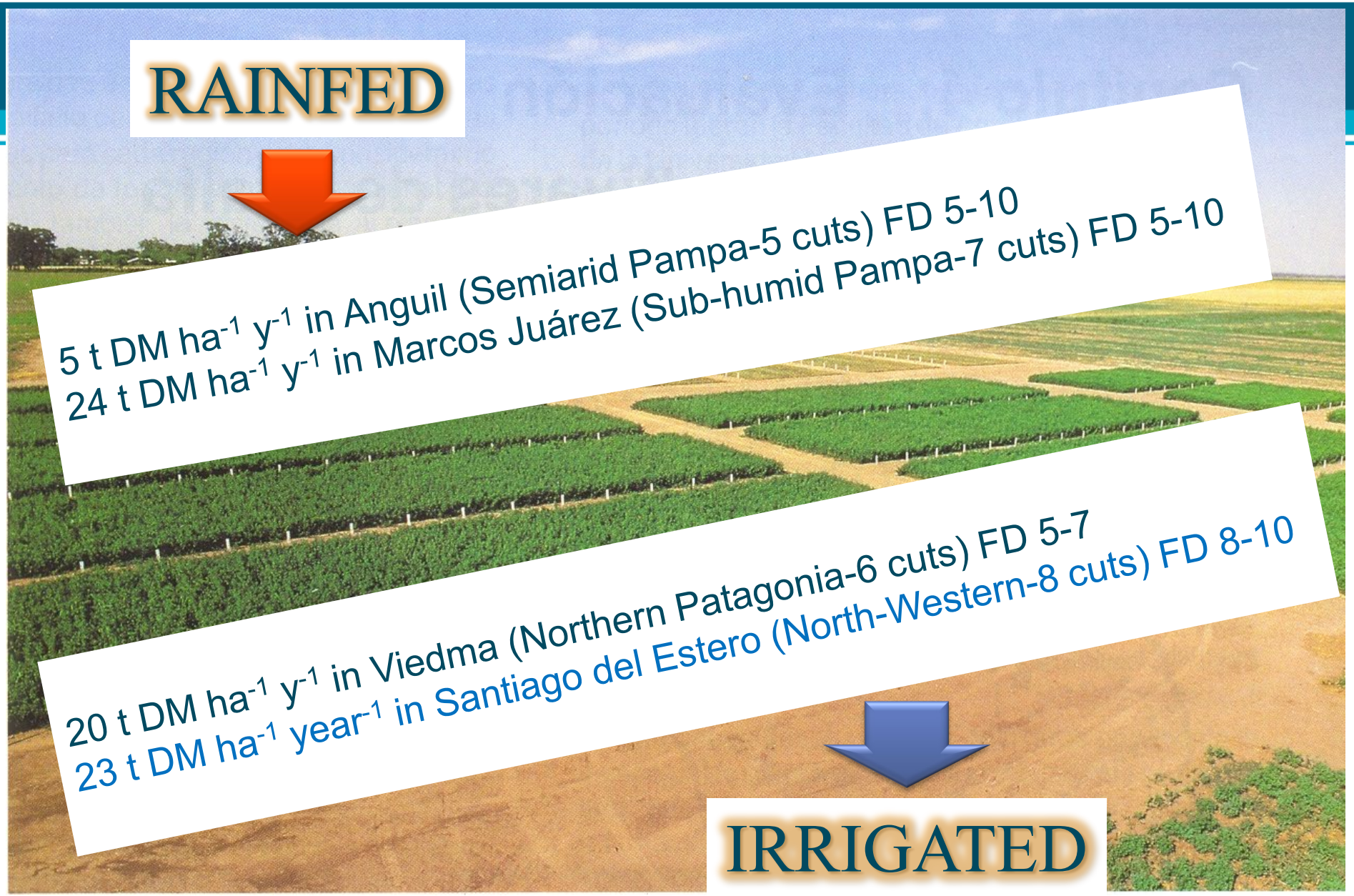
65% FD 8-10 and 35% FD 6-7

National Alfalfa Cultivar Evaluation Network

Since 1991



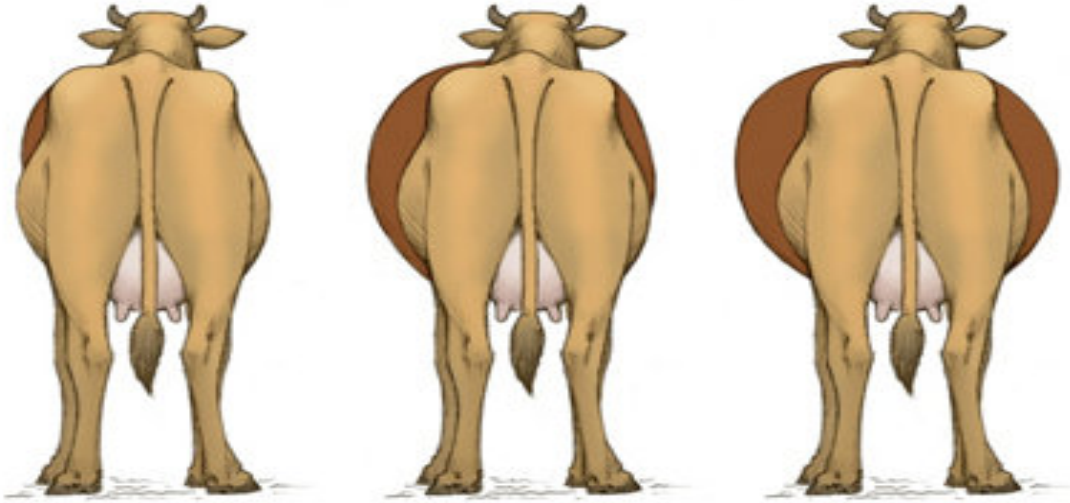
https://inta.gob.ar/documentos/directorio-de-avances-en-alfalfa

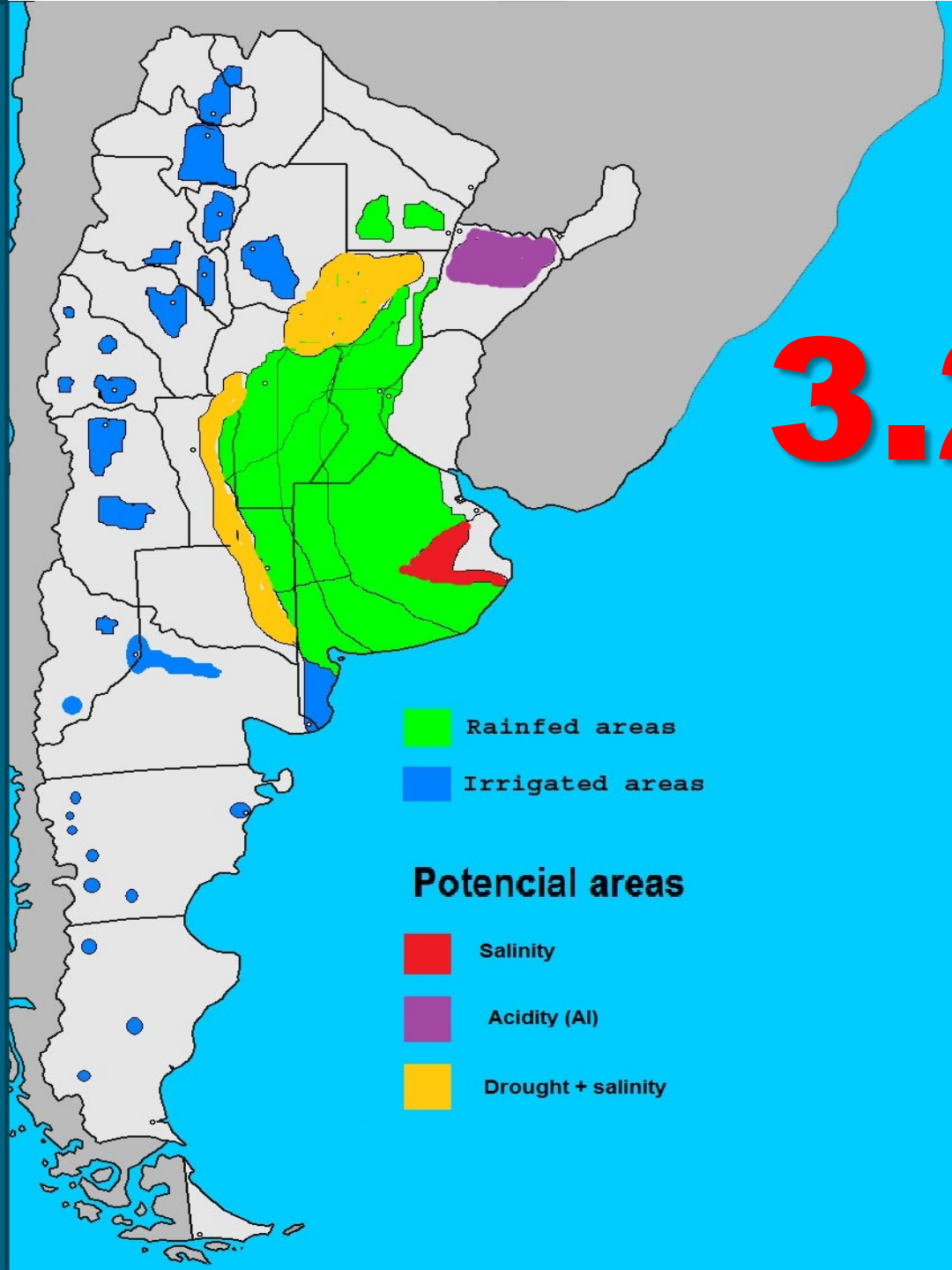

RAINFED
5 t DM ha-1 y-1 in Anguil (Semiarid Pampa-5 cuts) FD 5-10
24 t DM ha-1 y-1 in Marcos Juárez (Sub-humid Pampa-7 cuts) FD 5-10
20 t DM ha-1 y-1 in Viedma (Northern Patagonia-6 cuts) FD 5-7
23 t DM ha-1 year-1 in Santiago del Estero (North-Western-8 cuts) FD 8-10
IRRIGATED

- FEEDLOT-TYPE SYSTEMS
- USE of RESERVES
- GRAZING

ha

BLOAT





3.2 millon ha

60% pure

40% mixed

BREEDING GOALS

- **Good soils: high forage yield and persistence and high quality**
- **Marginal envinronments: tolerance to salinity and drought**

Overall: adaptation and high resistance to insects (aphids) and diseases

+ Other: bloat / herbicides

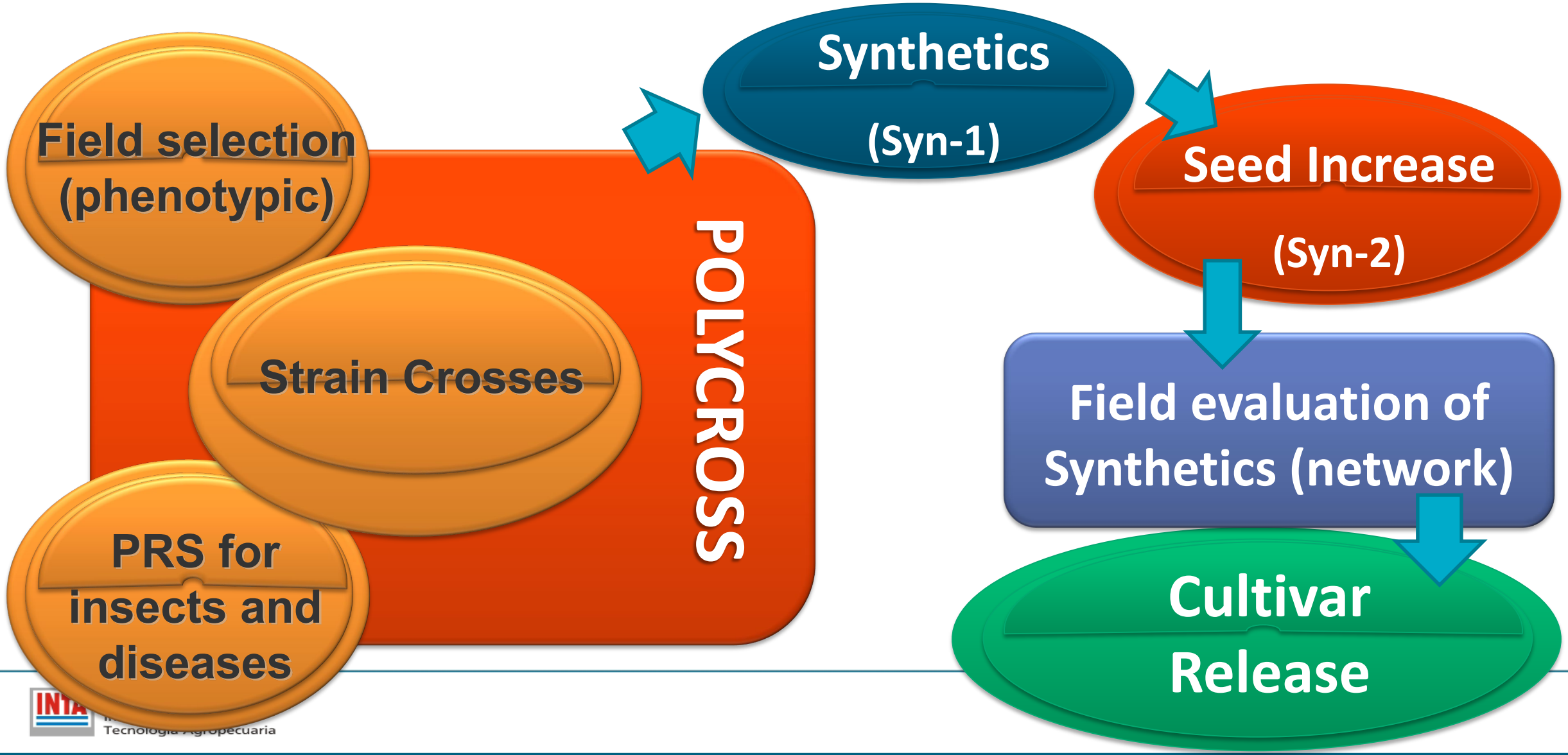
FD 6-10

INTA's BREEDING PROGRAM

Joint Venture

INTA-PALO VERDE S.R.L.

Breeding Scheme



FIELD Selection

FD
8 to 10

FD
6 to 7

PEST RESISTANCE SELECTION

NAAIC PROTOCOLS

Laboratory, greenhouse and/or field practices

INFECTION

PLANT EXTRACTION

EVALUATION

WASHING


ANTHRACNOSE

RAISE

INFESTATION

APHIDS

EVALUATION

DAMAGE DEVELOPMENT

Latest releases

Cultivar	FD	PRR	AN	FW	PA	BAA	SAA
Pulmarí PV INTA	6	R	MR	HR	HR	R	R
Traful PV INTA	9	R	MR	HR	HR	HR	HR
Limay PV INTA	9	R	R	HR	HR	R	R

Resistance Categories:

HR = highly resistant (>51%);
R = resistant (31-50%);
MR = moderately resistant (15-30%);
LR = low resistant (6-14%)

Special research lines

1. Salinity tolerance
2. FD 10 High Multifoliolate
3. Bloat tolerance
4. Glufosinate tolerance

Salinity Tolerance

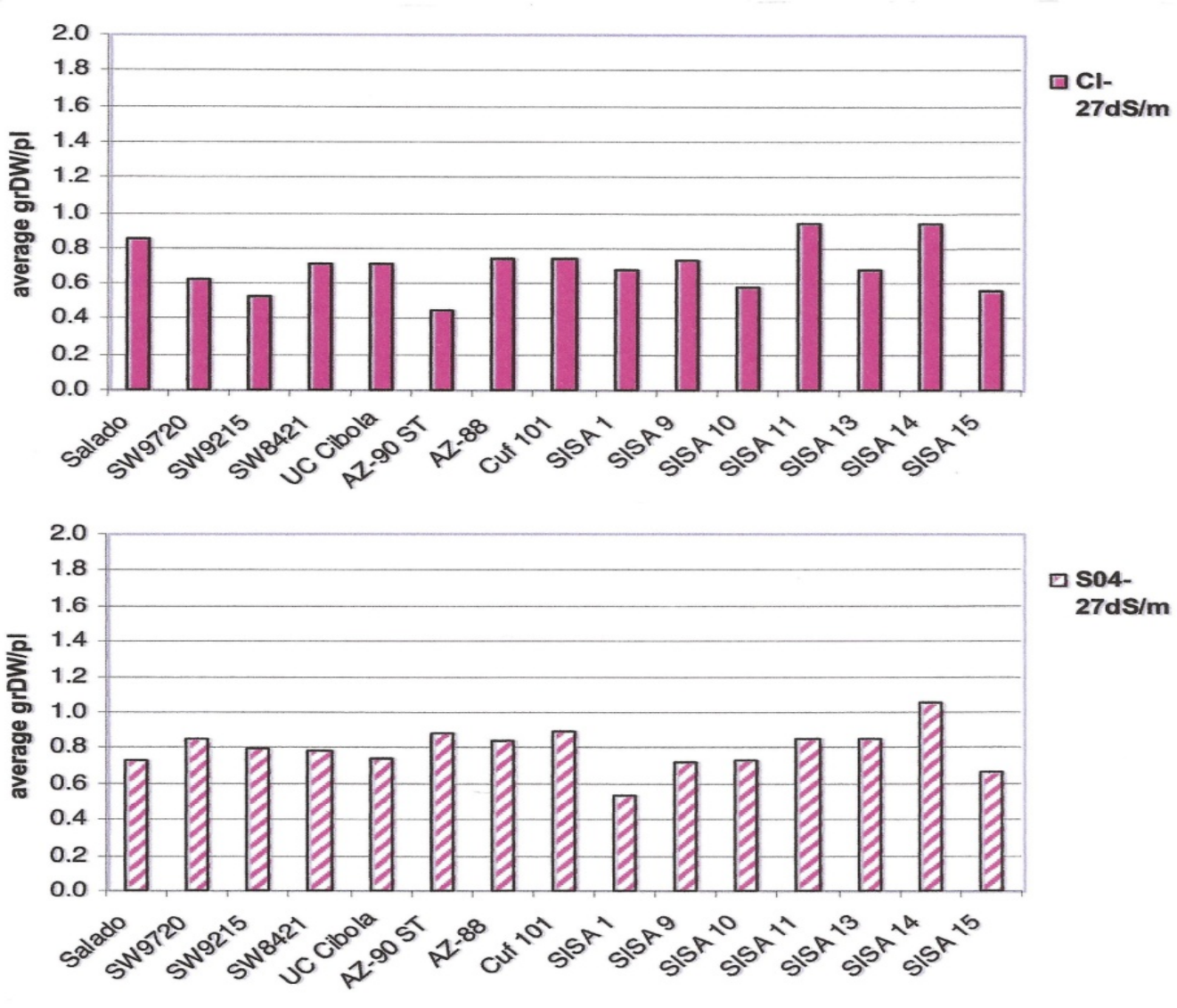
1

Selection under field conditions

(8-22 dS m^{-1})

Total shoot biomass (gr pl^{-1}) related to the check (no salt)

Overall mean for salt treatments (8 - 24.5 dS m^{-1}) and both water types

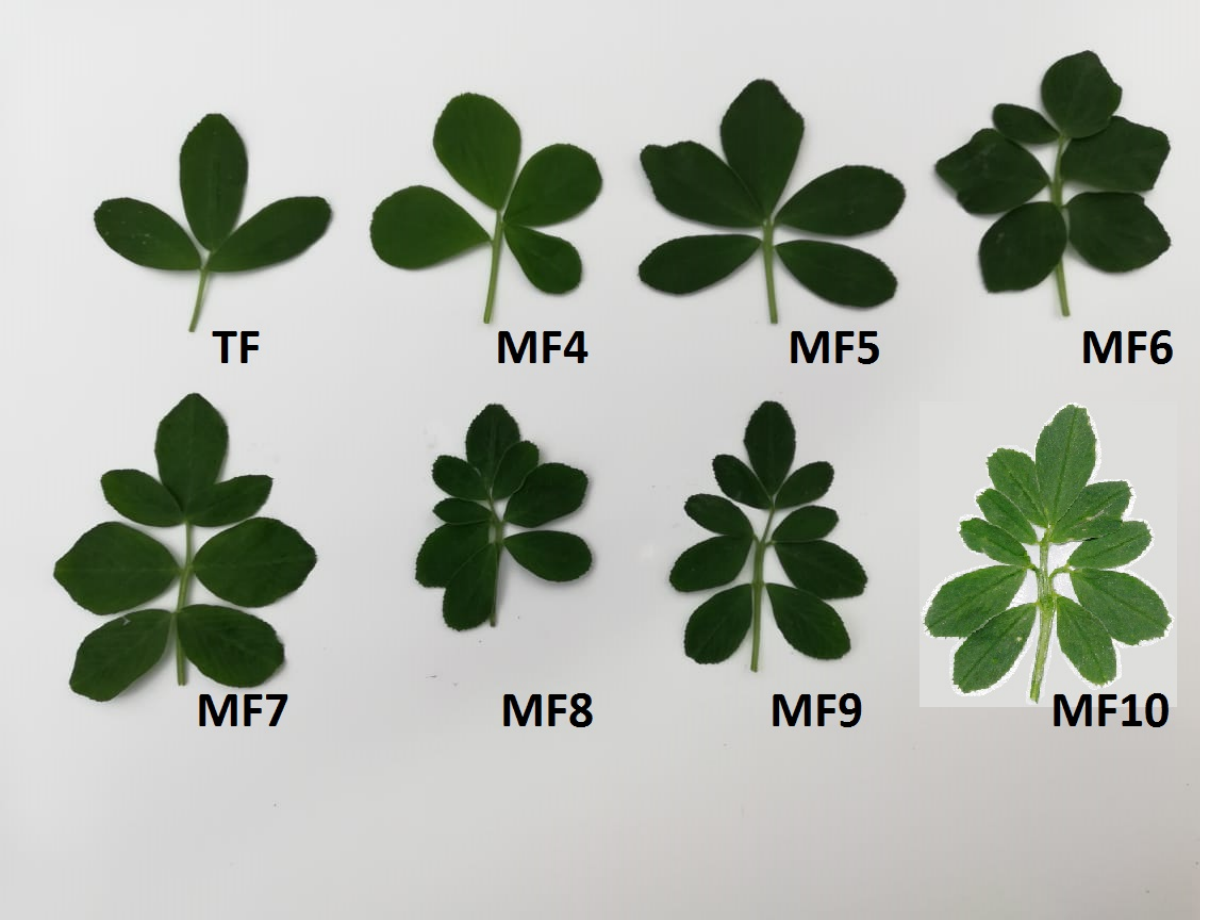


Biomass (gr/pl)	
SISA 14	**a**
SISA 11	**b**
SW8421	b
UC Cibola	b
SW9720	b
SW9215	b
AZ-90 ST	b
AZ-88	b
Salado	b
SISA 9	**b**
Cuf 101	b
SISA 15	**b**
SISA 13	**c**
SISA 1	**c**
SISA 10	**c**

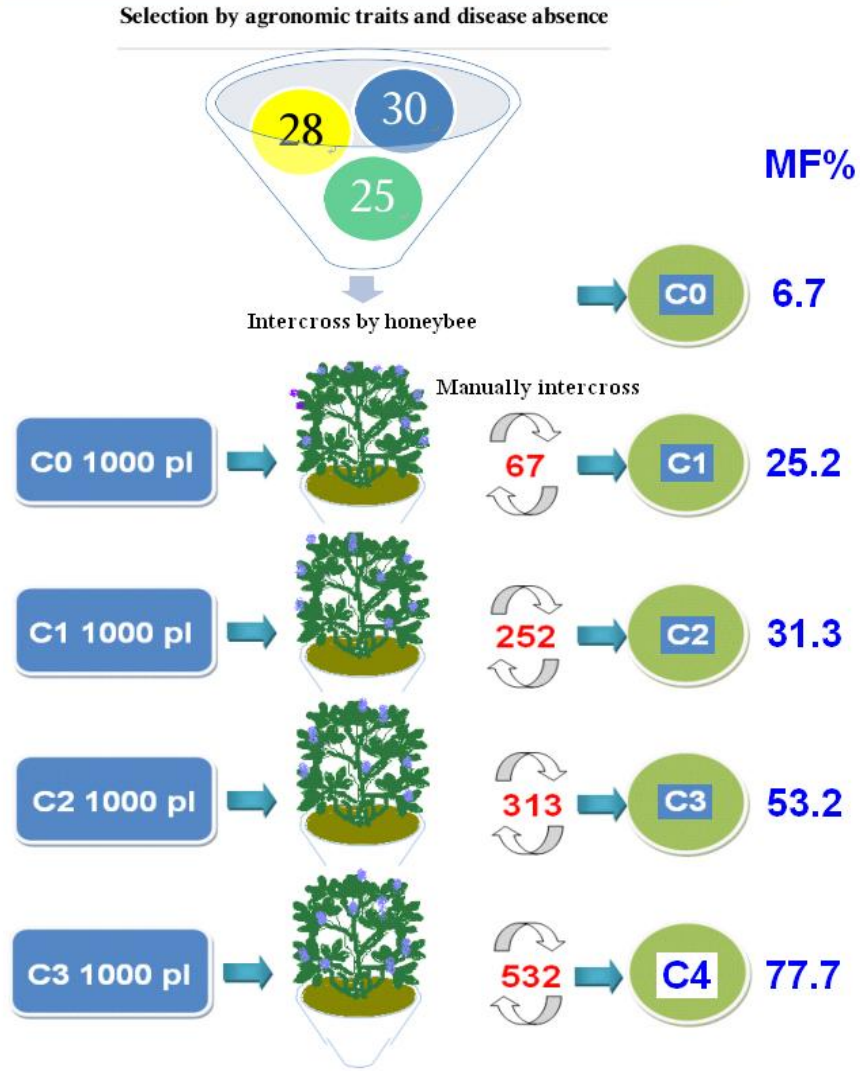
KUMEN PV INTA

High MF expression

2



RUANO	MIREYA	CW1010
116 pl.	110 pl.	123 pl.



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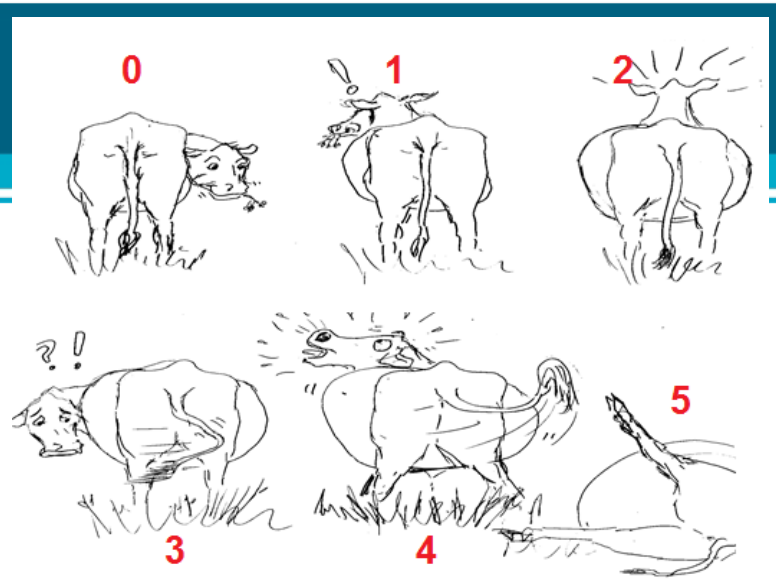
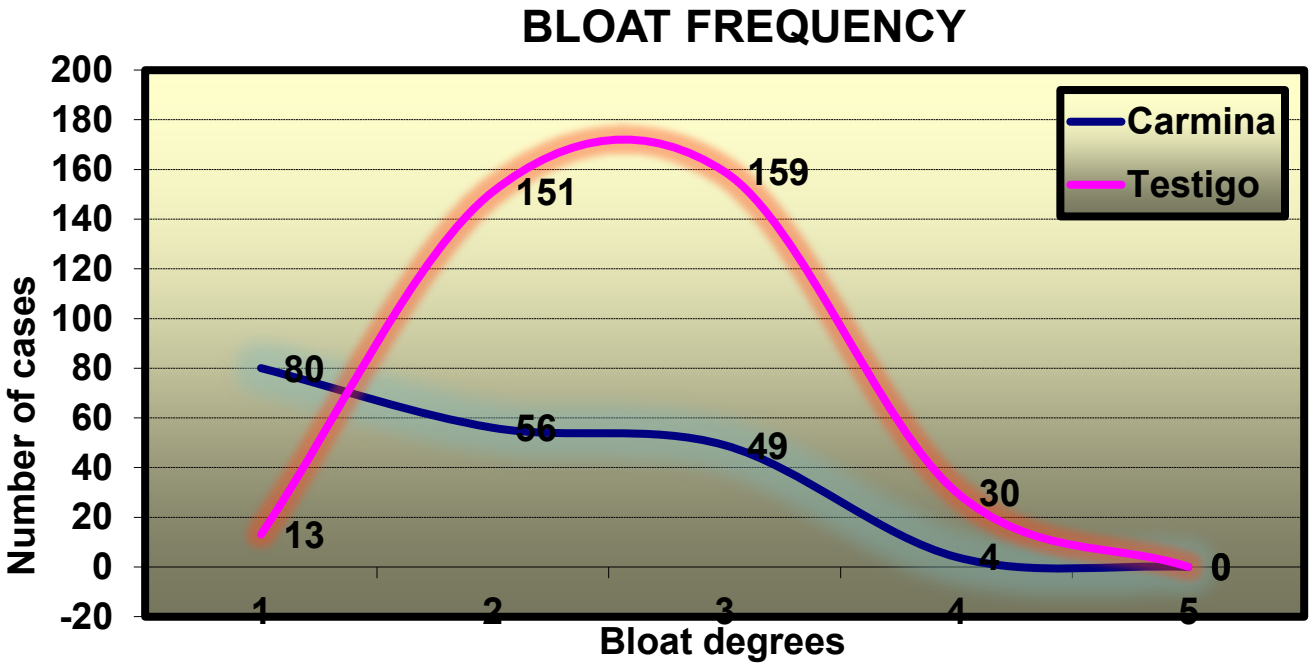
Presidencia de la Nación

	C0	C4
Forage Yield	12.47a	10.70a
Plant height	45.00a	41.05a
# of nodes	10.75a	9.37a
Leaf/stem ratio	1.35b	1.49a
Crude protein content	23.11b	25.00a
Neutral detergent fiber fraction	40.93a	38.25a
In vitro true dry matter digestibility	78.33a	80.93a


0
1
2
3
4
5

3


BLOAT FREQUENCY
Number of cases
200
180
160
140
120
100
80
60
40
20
0
-20
Carmina
Testigo
80
56
49
13
151
159
30
4
0
1
2
3
4
5
Bloat degrees

NIRS

Glufosinate tolerance (*gen* BAR)

F6 vs control (WT-ELITE)

Spray dose: 0, 2 and 4 l ha^{-1} of glufosinate

4

Thank You

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