EVALUACION DE MATERIALES NORMALES DE MAIZ

EEA INTA H. ASCASUBI
2008/09

JULIO CESAR RIVAS & RAUL MATARAZZO
RUTA 3 SUR KM 794. 8142 HILARIO ASCASUBI. BUENOS AIRES
T.E./FAX: 02928-491011
T.E.: 02928-491141
E-MAIL: jrivas@correo.inta.gov.ar

INFORMACION DE MANEJO DEL ENSAYO

- Fecha de siembra: 22 de octubre.
- Emergencia: 30 de octubre.
- Cultivo antecesor: girasol
- Nº de plantas/ha: 85.000.
- Herbicida: Twin pack, 1,3 l/ha, en preemergencia.
- Análisis de Suelo:

Materia orgánica: 1,93 %
Fósforo (Bray & Kurtz Nº 1): 25,12 ppm
Conductividad: 5,43 dS/m.

- Fertilización:
  A la siembra: 80 kg/ha FDA de inc. c/rastra.
  Al aporque: 300 kg/ha de urea. (V6-V7).

- Aporque: 27 de noviembre.

- Riegos:

presiembra	28/11	11/12	7/1	16/1	-

- Diseño experimental:
  Bloques completos con 4 repeticiones. Unidad experimental: 2 hileras separadas a 0.70 m x 7,15 m de longitud. (10 m2)

- Fecha de cosecha: 7 al 28 de abril

- Criaderos participantes: Advanta; ACA, Seminium; Monsanto; Nidera, SPS;, Dow; KWS. Materiales evaluados: 20.

- Al final se adjuntan los análisis Test de Tukey de comparación de medias para todas las variables. Letras distintas en cada columna indican diferencias significativas con un error menor del 5 %.

Materiales evaluados y Criaderos:

1. Dow 2E 464 cl	dow
2. Dow 2M 495 MG	dow
3. EM 6079 HX	dow
4. ACA 429 MG	ACA
5. ACA 472 MG	ACA
6. ACA ERP 972 MG	ACA
7. AM 8316 MG	advanta
8. AM 8318 TD max	advanta
9. AM 8323 cl	advanta
10. AM 8330 MG	advanta
11. LT 618 MG	seminium
12. LT 622 MG	seminium
13. AX 744 MG	nidera
14. AX 820 cl MG	nidera
15. AX 852 MG	nidera
16. SPS 5M TD Max.	SPS
17. Exp. MR 85	KWS
18. KM 2411	KWS
19. KM 3601 cl M6	KWS
20. Desafio	KWS

RESULTADOS DEL ECR DE MATERIALES COMERCIALES DE MAIZ.
EEA INTA HILARIO ASCASUBI. 2008/09

Materiales	Rend. de grano ($kg.ha^{-1}$) ajust. 14 % hum.	Nº de plantas cosechadas. ha^{-1}	Nº de espigas/ planta	Peso de 1000 granos (g)	Nº de granos $.m^{-2}$
1. AX 852 MG	16545	76.5	1.0	338	4886
2. AX 744 MG	15878	78.3	1.1	307	5173
3. AM 8323 cl	15454	78.8	1.1	273	5653
4. AX 820 cl MG	15328	78.0	1.1	348	4399
5. ACA ERP 972 MG	15275	78.5	1.1	339	4504
6. Dow 2E 464 cl	15238	79.3	1.1	351	4338
7. AM 8318 TD max	14823	76.8	1.0	355	4183
8. SPS 5M TD Max.	14768	79.3	1.1	283	5205
9. ACA 472 MG	14734	79.5	1.2	327	4517
10. KM 3601 cl M6	14617	78.8	1.0	359	4079
11. LT 622 MG	14389	78.5	1.2	317	4526
12. AM 8316 MG	14222	80.3	1.2	305	4664
13. EM 6079 HX	13894	77.5	1.0	319	4350
14. LT 618 MG	13498	77.8	1.2	286	4702
15. ACA 429 MG	12544	76.3	1.0	293	4278
16. Desafio	12282	75.0	1.0	326	3768
17. KM 2411	12126	72.3	1.1	344	3521
18. Dow 2M 495 MG	12020	79.3	1.2	265	4537
19. AM 8330 MG	11906	79.8	0.9	305	3903
20. Exp. MR 85	8216	75.8	1.0	304	2708
Media	*13888*	*78*	*1.06*	*317*	*4395*
C.V. (%)	*7.7*	*3.6*	*5.7*	*4,1*	*7,9*
Error	**	*	**	**	**

** El peso de 1000 granos consignado se registró con un porcentaje de humedad de un 8%, aproximadamente.*

Fenología, Humedad de Grano, Altura de Planta, Inserción de espiga e Incidencia de Mal de Río Cuarto

Materiales	Fecha de Inicio liberación polen	Fecha aparición de estigmas	Altura de planta (cm)	Altura inserc. Espiga (cm)	Incidencia MRIV (%)
1. AX 852 MG	3/1	5/1	226	104	0.0
2. AX 744 MG	5/1	8/1	235	116	0.0
3. AM 8323 cl	7/1	10/1	221	109	0.5
4. AX 820 cl MG	3/1	4/1	219	103	0.0
5. ACA ERP 972 MG	5/1	8/1	239	110	1.2
6. Dow 2E 464 cl	4/1	6/1	240	110	0.6
7. AM 8318 TD max	4/1	5/1	233	120	0.0
8. SPS 5M TD Max.	3/1	5/1	246	115	0.5
9. ACA 472 MG	8/1	10/1	239	115	0.0
10. KM 3601 cl M6	8/1	10/1	241	124	2.5
11. LT 622 MG	8/1	10/1	239	119	0.0
12. AM 8316 MG	5/1	10/1	234	110	0.0
13. EM 6079 HX	7/1	9/1	235	110	1.2
14. LT 618 MG	5/1	8/1	233	116	0.0
15. ACA 429 MG	2/1	6/1	238	119	5.0
16. Desafio	4/1	5/1	229	105	4.0
17. KM 2411	1/1	1/1	234	109	0.0
18. Dow 2M 495 MG	6/1	9/1	230	109	1.2
19. AM 8330 MG	6/1	8/1	241	124	2.5
20. Exp. MR 85	23/12	23/12	208	89	4.2
Media	-	-	*233*	*111*	*1.1*
C.V. (%)	-	-	*2.2*	*5.1*	*186.3*
Error	-	-	**	**	*n.s.*

Observaciones: En v7, un temporal de viento provocó un quebrado de plantas muy alto en el material 15.

Evolución del contenido de humedad de grano (%)

Materiales	23/3	7/4	28/4
1. AX 852 MG	19.9	14.2	11.9
2. AX 744 MG	18.4	15.3	12.5
3. AM 8323 cl	28.5	24.8	18.1
4. AX 820 cl MG	22.0	16.5	13.0
5. ACA ERP 972 MG	22.1	16.1	12.5
6. Dow 2E 464 cl	21.5	16.7	12.5
7. AM 8318 TD max	19.5	15.7	13.4
8. SPS 5M TD Max.	20.1	16.3	13.1
9. ACA 472 MG	21.5	14.8	11.9
10. KM 3601 cl M6	21.2	15.5	11.3
11. LT 622 MG	22.5	14.3	12.7
12. AM 8316 MG	18.5	13.9	12.4
13. EM 6079 HX	23.0	17.7	14.5
14. LT 618 MG	21.7	16.8	12.3
15. ACA 429 MG	22.4	15.8	12.2
16. Desafio	16.6	13.2	12.0
17. KM 2411	13.2	9.8	11.3
18. Dow 2M 495 MG	19.5	14.5	12.1
19. AM 8330 MG	24.8	19.9	15.6
20. Exp. MR 85	13.7	11.3	11.8

ECR MATERIALES COMERCIALES DE MAIZ-EEA INTA H. ASCASUBI 2008/09

Analysis of Variance Procedure

Tukey's Studentized Range (HSD) Test for variable:
Altura de inserción de espiga (cm)

Alpha= 0.05 df= 57 MSE= 32.02303
Critical Value of Studentized Range= 5.253
Minimum Significant Difference= 14.864

Means with the same letter are not significantly different.

Tukey Grouping				Mean	N	TR
		A		123.750	4	AM8330mg
		A				
		A		123.750	4	KM3601cl
		A				
B		A		120.000	4	AM8318TD
B		A				
B		A	C	118.750	4	ACA429mg
B		A	C			
B		A	C	118.750	4	LT_622mg
B		A	C			
B	D	A	C	116.250	4	LT_618mg
B	D	A	C			
B	D	A	C	116.250	4	AX_744mg
B	D	A	C			
B	D	A	C	115.000	4	ACA472mg
B	D	A	C			
B	D	A	C	115.000	4	SPS5MTDm
B	D	A	C			
B	D	A	C	110.000	4	DOW464cl
B	D	A	C			
B	D	A	C	110.000	4	ACA972mg
B	D	A	C			
B	D	A	C	110.000	4	EM6079HX
B	D	A	C			
B	D	A	C	110.000	4	AM8316mg
B	D		C			
B	D		C	108.750	4	KM_2411
B	D		C			
B	D		C	108.750	4	AM8323cl
B	D		C			
B	D		C	108.750	4	DOW495mg
	D		C			
	D		C	105.000	4	Desafio
	D					
	D			103.750	4	AX_852mg
	D					
	D	E		102.500	4	AX_820cl
		E				
		E		88.750	4	EXP_MR85

ECR MATERIALES COMERCIALES DE MAIZ-EEA INTA H. ASCASUBI 2008/09

Analysis of Variance Procedure

Tukey's Studentized Range (HSD) Test for variable:
Número de plantas a cosecha/m2

Alpha= 0.05 df= 57 MSE= 8.003728
Critical Value of Studentized Range= 5.253
Minimum Significant Difference= 7.4312

Means with the same letter are not significantly different.

Tukey Grouping	Mean	N	TR
A	80.250	4	AM8316mg
A			
A	79.750	4	AM8330mg
A			
B A	79.500	4	ACA472mg
B A			
B A	79.250	4	DOW464cl
B A			
B A	79.250	4	DOW495mg
B A			
B A	79.250	4	SPS5MTDm
B A			
B A	78.750	4	AM8323cl
B A			
B A	78.750	4	KM3601cl
B A			
B A	78.500	4	ACA972mg
B A			
B A	78.500	4	LT_622mg
B A			
B A	78.250	4	AX_744mg
B A			
B A	78.000	4	AX_820cl
B A			
B A	77.750	4	LT_618mg
B A			
B A	77.500	4	EM6079HX
B A			
B A	76.750	4	AM8318TD
B A			
B A	76.500	4	AX_852mg
B A			
B A	76.250	4	ACA429mg
B A			
B A	75.750	4	EXP_MR85
B A			
B A	75.000	4	Desafio
B			
B	72.250	4	KM_2411

ECR MATERIALES COMERCIALES DE MAIZ-EEA INTA H. ASCASUBI 2008/09

Analysis of Variance Procedure

Tukey's Studentized Range (HSD) Test for variable:
Incidencia de Mal de Río Cuarto (%)

Alpha= 0.05 df= 57 MSE= 3.2125
Critical Value of Studentized Range= 5.253
Minimum Significant Difference= 4.708

Means with the same letter are not significantly different.

Tukey Grouping			Mean	N	TR
	A		5.500	4	ACA429mg
	A				
B	A		4.750	4	Desafio
B	A				
B	A	C	2.500	4	AM8330mg
B	A	C			
B	A	C	2.250	4	EXP_MR85
B	A	C			
B	A	C	1.500	4	KM3601cl
B	A	C			
B	A	C	1.500	4	AM8318TD
B	A	C			
B	A	C	1.000	4	AX_852mg
B	A	C			
B	A	C	1.000	4	KM_2411
B		C			
B		C	0.750	4	DOW464cl
B		C			
B		C	0.500	4	AM8323cl
B		C			
B		C	0.500	4	AM8316mg
B		C			
B		C	0.500	4	ACA472mg
B		C			
B		C	0.500	4	DOW495mg
B		C			
B		C	0.500	4	EM6079HX
B		C			
B		C	0.500	4	ACA972mg
B		C			
B		C	0.500	4	SPS5MTDm
		C			
		C	0.000	4	AX_820cl
		C			
		C	0.000	4	LT_618mg
		C			
		C	0.000	4	LT_622mg
		C			
		C	0.000	4	AX_744mg

ECR MATERIALES COMERCIALES DE MAIZ-EEA INTA H. ASCASUBI 2008/09

Analysis of Variance Procedure

Tukey's Studentized Range (HSD) Test for variable:
Peso de 1000 granos (g)

Alpha= 0.05 df= 57 MSE= 171.7107
Critical Value of Studentized Range= 5.253
Minimum Significant Difference= 34.42

Means with the same letter are not significantly different.

Tukey Grouping					Mean	N	TR
			A		358.750	4	KM3601cl
			A				
			A		354.750	4	AM8318TD
			A				
	B		A		351.000	4	DOW464cl
	B		A				
	B		A	C	348.000	4	AX_820cl
	B		A	C			
	B		A	C	344.000	4	KM_2411
	B		A	C			
	B	D	A	C	338.750	4	ACA972mg
	B	D	A	C			
	B	D	A	C	338.250	4	AX_852mg
	B	D	A	C			
E	B	D	A	C	327.000	4	ACA472mg
E	B	D	A	C			
E	B	D	A	C	325.500	4	Desafio
E	B	D		C			
E	B	D	F	C	319.250	4	EM6079HX
E		D	F	C			
E	G	D	F	C	316.500	4	LT_622mg
E	G	D	F				
E	G	D	F	H	307.000	4	AX_744mg
E	G	D	F	H			
E	G	D	F	H	304.750	4	AM8316mg
E	G	D	F	H			
E	G	D	F	H	304.750	4	AM8330mg
E	G		F	H			
E	G		F	H	303.750	4	EXP_MR85
E	G		F	H			
E	G	I	F	H	293.000	4	ACA429mg
	G	I	F	H			
	G	I	F	H	286.250	4	LT_618mg
	G	I		H			
	G	I		H	283.000	4	SPS5MTDm
		I		H			
		I		H	273.000	4	AM8323cl
		I					
		I			265.000	4	DOW495mg

ECR MATERIALES COMERCIALES DE MAIZ-EEA INTA H. ASCASUBI 2008/

Analysis of Variance Procedure

Tukey's Studentized Range (HSD) Test for variable:
Número de granos/m2

Alpha= 0.05 df= 57 MSE= 120443.1
Critical Value of Studentized Range= 5.253
Minimum Significant Difference= 911.6

Means with the same letter are not significantly different.

Tukey Grouping						Mean	N	TR
			A			5653.1	4	AM8323cl
			A					
	B		A			5205.3	4	SPS5MTDm
	B		A					
	B		A	C		5173.0	4	AX_744mg
	B		A	C				
	B	D	A	C		4886.3	4	AX_852mg
	B	D		C				
	B	D	E	C		4702.2	4	LT_618mg
	B	D	E	C				
F	B	D	E	C		4664.0	4	AM8316mg
F	B	D	E	C				
F	B	D	E	C		4537.3	4	DOW495mg
F	B	D	E	C				
F	B	D	E	C		4525.8	4	LT_622mg
F	B	D	E	C				
F	B	D	E	C		4517.0	4	ACA472mg
F	B	D	E	C				
F	B	D	E	C		4504.2	4	ACA972mg
F	B	D	E	C				
F	B	D	E	C	G	4398.8	4	AX_820cl
F	B	D	E	C	G			
F	B	D	E	C	G	4350.0	4	EM6079HX
F	B	D	E	C	G			
F	B	D	E	C	G	4338.2	4	DOW464cl
F		D	E	C	G			
F		D	E	C	G	4278.3	4	ACA429mg
F		D	E		G			
F		D	E		G	4182.6	4	AM8318TD
F		D	E		G			
F		D	E		G	4078.7	4	KM3601cl
F			E		G			
F			E		G	3902.7	4	AM8330mg
F					G			
F					G	3768.1	4	Desafio
					G			
			H		G	3520.9	4	KM_2411
			H					
			H			2708.1	4	EXP_MR85

ECR MATERIALES COMERCIALES DE MAIZ-EEA INTA H. ASCASUBI 2008/09

Analysis of Variance Procedure

Tukey's Studentized Range (HSD) Test for variable:
Rendimiento de grano ajustado a 14 % de humedad (kg/ha)

Alpha= 0.05 df= 57 MSE= 1151358
Critical Value of Studentized Range= 5.253
Minimum Significant Difference= 2818.5

Means with the same letter are not significantly different.

Tukey Grouping				Mean	N	TR
		A		16545.3	4	AX_852mg
		A				
	B	A		15877.8	4	AX_744mg
	B	A				
	B	A		15454.3	4	AM8323cl
	B	A				
	B	A	C	15328.3	4	AX_820cl
	B	A	C			
	B	A	C	15275.0	4	ACA972mg
	B	A	C			
	B	A	C	15238.3	4	DOW464cl
	B	A	C			
	B D	A	C	14823.3	4	AM8318TD
	B D	A	C			
	B D	A	C	14768.0	4	SPS5MTDm
	B D	A	C			
	B D	A	C	14733.8	4	ACA472mg
	B D	A	C			
E	B D	A	C	14616.8	4	KM3601cl
E	B D	A	C			
E	B D	A	C	14389.0	4	LT_622mg
E	B D	A	C			
E	B D	A	C	14222.3	4	AM8316mg
E	B D	A	C			
E	B D	A	C	13894.0	4	EM6079HX
E	B D		C			
E	B D		C	13497.5	4	LT_618mg
E	D		C			
E	D		C	12543.8	4	ACA429mg
E	D					
E	D			12281.8	4	Desafio
E	D					
E	D			12125.8	4	KM_2411
E	D					
E	D			12020.3	4	DOW495mg
E						
E				11906.0	4	AM8330mg
		F		8216.0	4	EXP_MR85

ECR MATERIALES COMERCIALES DE MAIZ-EEA INTA H. ASCASUBI 2008/09

Analysis of Variance Procedure

Tukey's Studentized Range (HSD) Test for variable:
Número de espigas/planta

Alpha= 0.05 df= 57 MSE= 0.003692
Critical Value of Studentized Range= 5.253
Minimum Significant Difference= 0.1596

Means with the same letter are not significantly different.

Tukey Grouping				Mean	N	TR
		A		1.17481	4	DOW495mg
		A				
B		A		1.16650	4	ACA472mg
B		A				
B		A	C	1.15882	4	LT_622mg
B		A	C			
B		A	C	1.15340	4	AM8316mg
B		A	C			
B		A	C	1.14557	4	LT_618mg
B		A	C			
B	D	A	C	1.09609	4	AX_744mg
B	D	A	C			
B	D	A	C	1.08243	4	KM_2411
B	D	A	C			
B	D	A	C	1.07382	4	AM8323cl
B	D	A	C			
B	D	A	C	1.06758	4	ACA972mg
B	D	A	C			
B	D	A	C	1.06719	4	AX_820cl
B	D	A	C			
B	D	A	C	1.06414	4	SPS5MTDm
B	D	A	C			
B	D	A	C	1.04116	4	AX_852mg
B	D	A	C			
B	D	A	C	1.03506	4	AM8318TD
B	D	A	C			
B	D	A	C	1.03506	4	KM3601cl
B	D		C			
B	D		C	1.01029	4	DOW464cl
B	D		C			
B	D		C	1.00731	4	Desafio
	D		C			
	D		C	1.00429	4	ACA429mg
	D					
	D			0.98450	4	EM6079HX
	D					
	D			0.97669	4	EXP_MR85
	D					
	D			0.94628	4	AM8330mg

ECR MATERIALES COMERCIALES DE MAIZ-EEA INTA H. ASCASUBI 2008/09

Analysis of Variance Procedure

Tukey's Studentized Range (HSD) Test for variable:
Altura de planta (cm)

Alpha= 0.05 df= 57 MSE= 26.82018
Critical Value of Studentized Range= 5.253
Minimum Significant Difference= 13.603

Means with the same letter are not significantly different.

Tukey Grouping				Mean	N	TR
		A		246.250	4	SPS5MTDm
		A				
B		A		241.250	4	AM8330mg
B		A				
B		A		241.250	4	KM3601cl
B		A				
B		A		240.000	4	DOW464cl
B		A				
B		A	C	238.750	4	ACA972mg
B		A	C			
B		A	C	238.750	4	ACA472mg
B		A	C			
B		A	C	238.750	4	LT_622mg
B		A	C			
B		A	C	237.500	4	ACA429mg
B		A	C			
B		A	C	235.000	4	EM6079HX
B		A	C			
B		A	C	235.000	4	AX_744mg
B		A	C			
B	D	A	C	233.750	4	KM_2411
B	D	A	C			
B	D	A	C	233.750	4	AM8316mg
B	D		C			
B	D		C	232.500	4	AM8318TD
B	D		C			
B	D		C	232.500	4	LT_618mg
B	D		C			
B	D	E	C	230.000	4	DOW495mg
B	D	E	C			
B	D	E	C	228.750	4	Desafio
	D	E	C			
	D	E	C	226.250	4	AX_852mg
	D	E				
	D	E		221.250	4	AM8323cl
		E				
F		E		218.750	4	AX_820cl
F						
F				207.500	4	EXP_MR85