

crea Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria

CREA Council for Agricultural Research and Economics
 Research Centre for Forestry and Wood


CONGRESSO NAZIONALE DI SELVICOLTURA
 IL BOSCO. BENE INDISPENSABILE PER UN PRESENTE VIVIBILE E UN FUTURO POSSIBILE
 TORINO 5-9 NOVEMBRE 2018

Performances of 22 poplar genotypes selected in Europe in four different environments of Italy

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19/11/2018 1


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The idea of establishing a network to test poplar clones from EU member states for the use in short rotation coppice was born at the FAO-IPC conference 2012 (Deradun, India)
 This project was developed in Teisendorf, Germany (28-30 October 2013) with the coordination of ASP (Bavarian Office for Forest Seeding and Planting)



- 13 European partner countries (Austria, Belgium, Bulgaria, Czech Rep., Croatia, Germany, Hungary, Italy, Romania, Serbia, Slovenia, Spain, Sweden) - 22 experimental fields
- More than 30 poplar clones tested (22 clones in 4 Italian fields) from 2014 (4 years)
- Common trial plot design and common data protocol (survival, DBH, Total height, biomass production, basal density, rust score)

19/11/2018 2


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Research aims

- Extending knowledge of newly selected poplar clones within the EU
- Analyze productivity on different site and climate conditions
- Finding the useful poplar clones in each EU countries / regions
- Give regional poplar clone recommendations for biomass production in EU market

19/11/2018 3


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Establishment: Spring 2014

Sites

- Casale Monferrato (sandy loam soil) - CAS
- Cavallermaggiore (loamy soil) - CAV
- Savigliano - Suniglia (loamy soil) – SAV
- Roma - RM

Plot design

- 40 plants/plot (16 core plants are evaluated)
- 3 replications
- Spacing: 2,5 x 1m (100 m²/ plot)
- Rotation period: 4 years



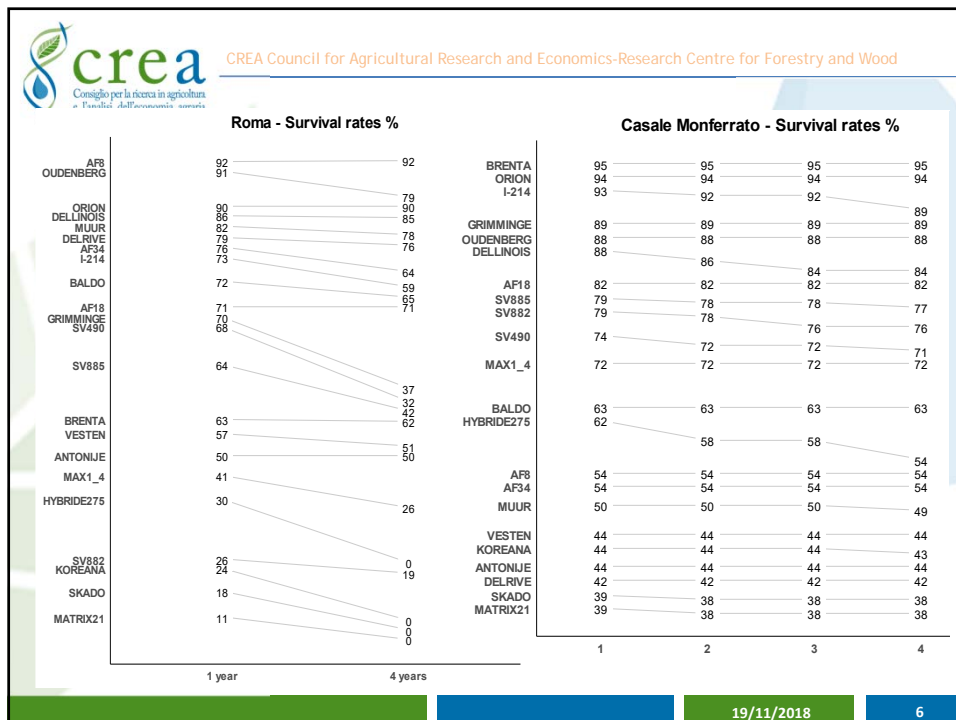
19/11/2018 4

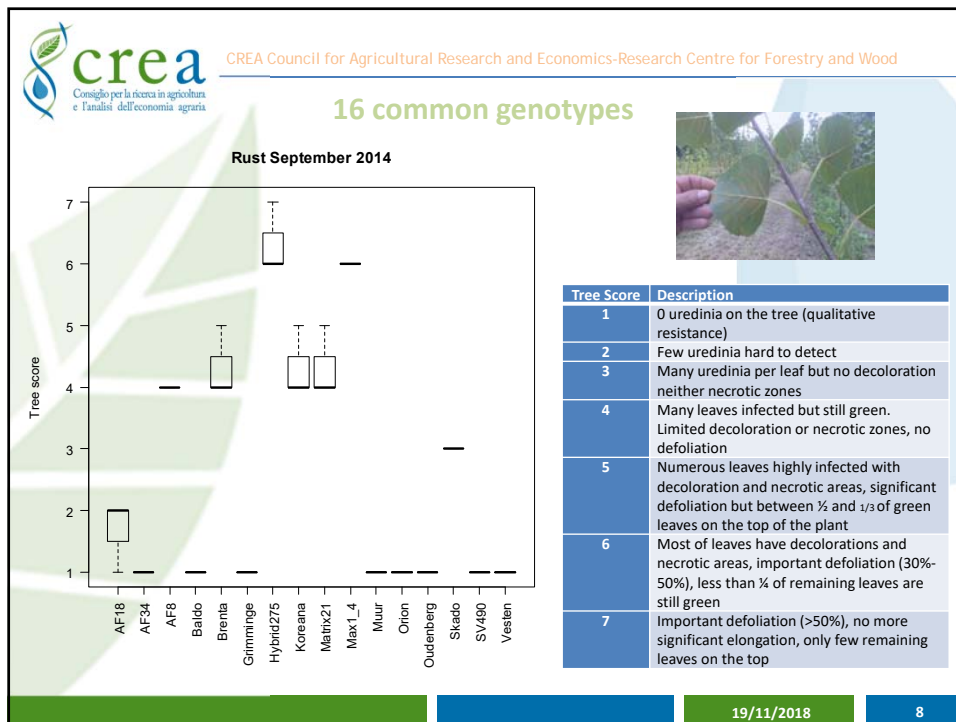
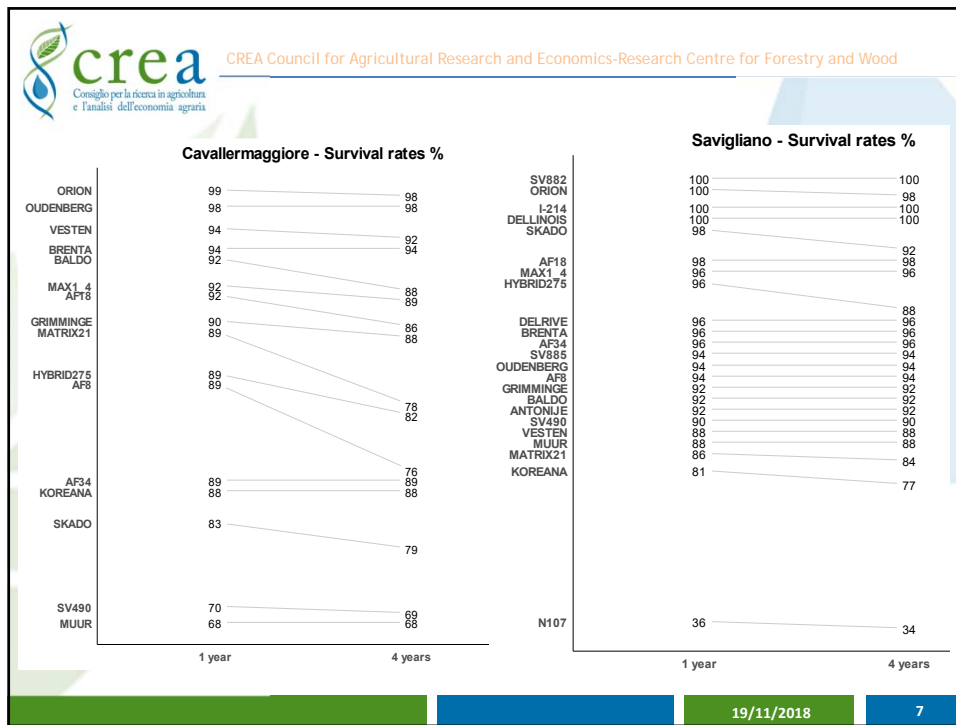
Clones tested

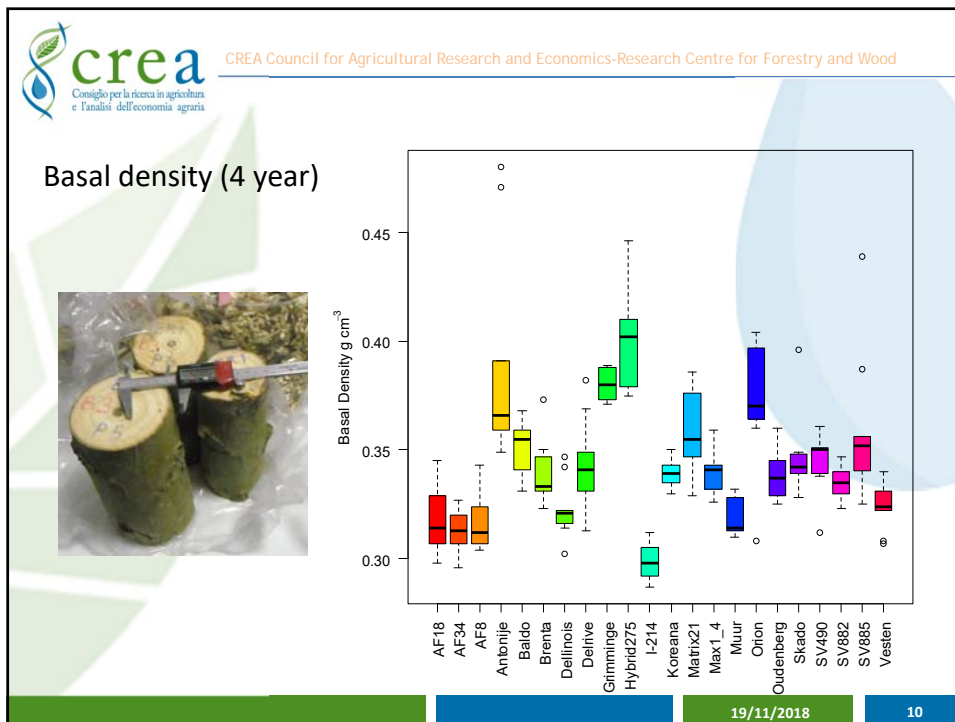
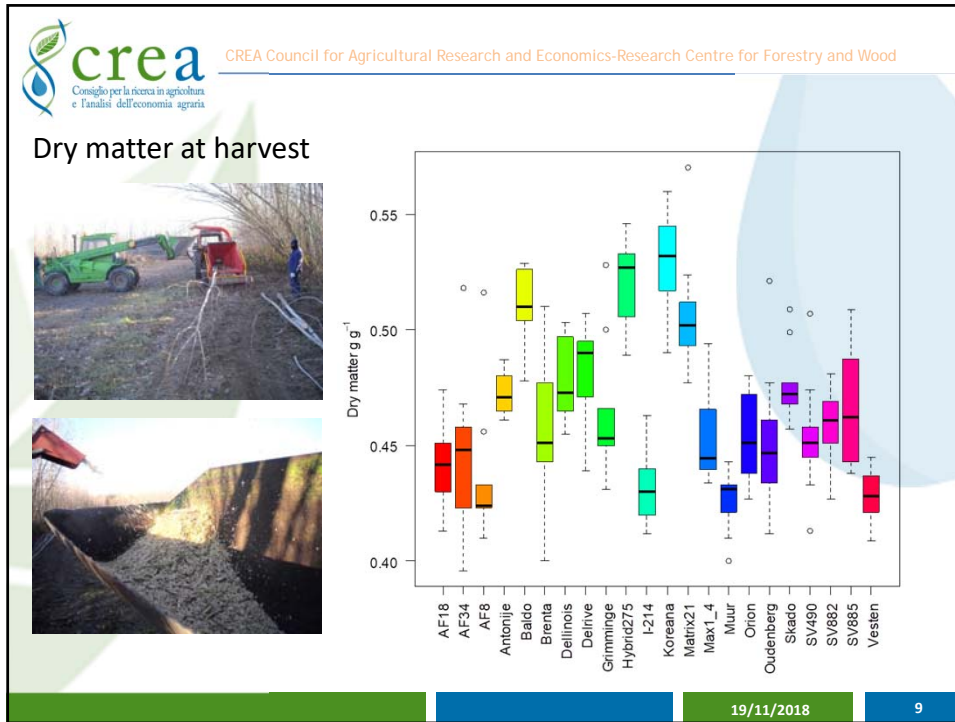
Populus species:
d= deltoides
kor= koreana
m= maximowiczii
n= nigra
t= trichocarpa

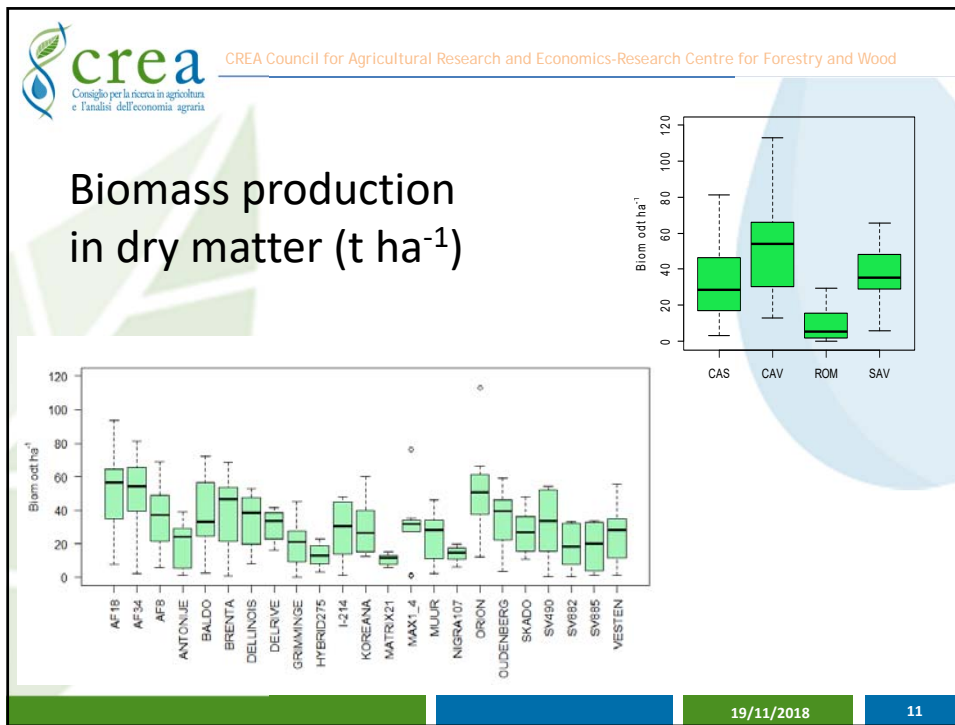
Clone	Species	Owners	Country
Grimminge	d×(t×d)	INBO	Belgium
Muur	(d×n)	INBO	Belgium
Oudenberg	(d×n)	INBO	Belgium
Skado	(t×m)	INBO	Belgium
Vesten	(d×n)	INBO	Belgium
Nigra107	(n)	Silva Tarouca	Czech Republic
Dellinois	(d×n)	INRA	France
Delrive	(d×n)	INRA	France
Hybride275	(n×m)	ASP	Germany
Koreana	(t×kor)	ASP	Germany
Matrix21	(t×m)	ASP	Germany
Max1_4	(n×m)	ASP	Germany
SV490	(t×d)	Forest research institute Sarvar	Hungary
SV882	(d×n)	Forest research institute Sarvar	Hungary
SV885	(d×n)	Forest research institute Sarvar	Hungary
AF18	(d×n)	Alasia New Clones	Italy
AF34	(d×n)	Alasia New Clones	Italy
AF8	(t×d)	Alasia New Clones	Italy
Baldo	(d×d)	CREA	Italy
Brenta	(d×n)	CREA	Italy
I-214	(d×n)	CREA	Italy
Orion	(d×n)	CREA	Italy
Antonije	(d×n)×d	University of Novi Sad	Serbia

19/11/2018 5









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Clones with better response and improved stability according AMMI

(Add ... models)

	ASV	YSI	rASV	rYSI	means
AF18	2.51	18	17	1	55.5
ORION	2.99	21	19	2	54.8
AF34	3.20	24	21	3	51.6
BALDO	4.30	26	22	4	41.0
BRENTA	0.69	9	4	5	40.3
DELLINOIS	1.02	13	7	6	39.5
AF8	2.19	20	13	7	37.0
DELRIVE	0.58	10	2	8	36.4
I-214	0.74	14	5	9	35.7
OUDENBERG	2.27	25	15	10	35.6
SV490	2.99	31	20	11	33.0
MAX1_4	0.88	18	6	12	29.7
VESTEN	1.74	24	11	13	28.7
SV885	0.63	17	3	14	26.0
ANTONIJE	0.29	16	1	15	25.9
MUUR	2.41	32	16	16	24.8
SV882	1.50	26	9	17	23.2
KOREANA	2.20	32	14	18	21.8
GRIMMINGE	1.31	27	8	19	21.2
SKADO	1.62	30	10	20	19.4
HYBRID275	2.61	39	18	21	4.2
MATRIX21	1.88	34	12	22	2.0

Reference: Sabaghnia N. and S.H.Sabaghpour and H. Dehghani (2008). The use of an AMMI model and its parameters to analyse yield stability in multi-environment trials Journal of Agricultural Science 146, 571-581. doi:10.1017/S0021859608007831.

19/11/2018 12



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Conclusive remarks

- Plant survival at the end of the first year significantly effected biomass production of each clone grown in different sites.
- Clone biomass yields are strictly related to soil and climate condition of different sites.
- The poplar clones shown statistically significant difference for rust tolerance, wood basal density and dry matter content.
- The best clones for Po Valley growth condition have been selected in Italy by CREA and Alasia New Clones (AF18, Orion, AF34, Brenta and Baldo)

19/11/2018 13