



BERTONE SEMENTI S.P.A.

Nuove varietà per il <<residuo zero>>

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Il brusone



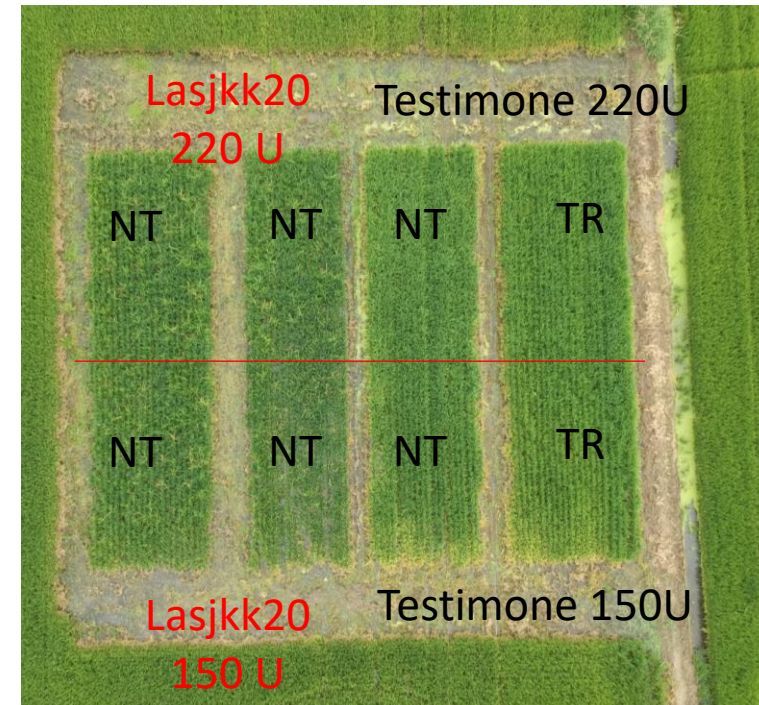
Prove agronomiche



Residuo 0- prove in “parcelloni”

Prove in parcelloni

- Parcelloni $\approx 50 \text{ m}^2$
- 2 prove di concimazione (150 e 220 U)
- 2 condizioni irrigue (Sommersione e AWD)
- 2 gestioni per i trattamenti fungini (solo Testimone)



Residuo 0- prove in “parcelline”

Prove parcellari

- Parcelline piccole $\approx 18 \text{ m}^2$
- Concimazione 180 U
- 2 condizioni irrigue (Sommersione e AWD)
- 2 strategie di diserbo in sommersione e strategie di diserbo in AWD
- 2 gestioni per i trattamenti fungini (solo Testimone)



Residuo 0- prove in “parcelloni”



Residuo 0- Analisi multiresiduale su risone

2021													
Varietà	Condizione	Azossistrobina	Difenoconazolo	Trifloxystrobin	Cyhalofop Butile	Profoxydim	Florpyrauxifen benzyl	Lambda Cialotrina	Penoxulam	Triclopyr-butotil	Halosulfuron metile	Clomazone	Pendimentalin
LASJKK20	PF	x	x	x	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr
TESTIMONE	PF	0.281	0.312	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr
LASJKK20	AWD	x	x	x	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr
TESTIMONE	AWD	0.221	0.469	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr
2022													
Varietà	Condizione	Azossistrobina	Difenoconazolo	Trifloxystrobin	Cyhalofop Butile	Profoxydim	Florpyrauxifen benzyl	Lambda Cialotrina	Penoxulam	Triclopyr-butotil	Halosulfuron metile	Clomazone	Pendimentalin
LASJKK20	PF	x	x	x	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr
TESTIMONE	PF	0.050	0.071	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr
LASJKK20	AWD	x	x	x	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr
TESTIMONE	AWD	0.077	0.055	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr

Characterisation of the European pathogen population of *Magnaporthe grisea* by DNA fingerprinting and pathotype analysis

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Key words: blast, rice, *Magnaporthe grisea*, *Pyricularia*, virulence, genetic variability

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Polymorphism analysis of genomic regions associated with broad-spectrum effective blast resistance genes for marker development in rice

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E. Lupotto · G. Valè

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Assessment of genetic diversity in Italian rice germplasm related to agronomic traits and blast resistance (*Magnaporthe oryzae*)

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Stefano Cavigiolo · Anna Maria Picco · Laetitia Borgo ·
Elisabetta Lupotto · Pietro Piffanelli

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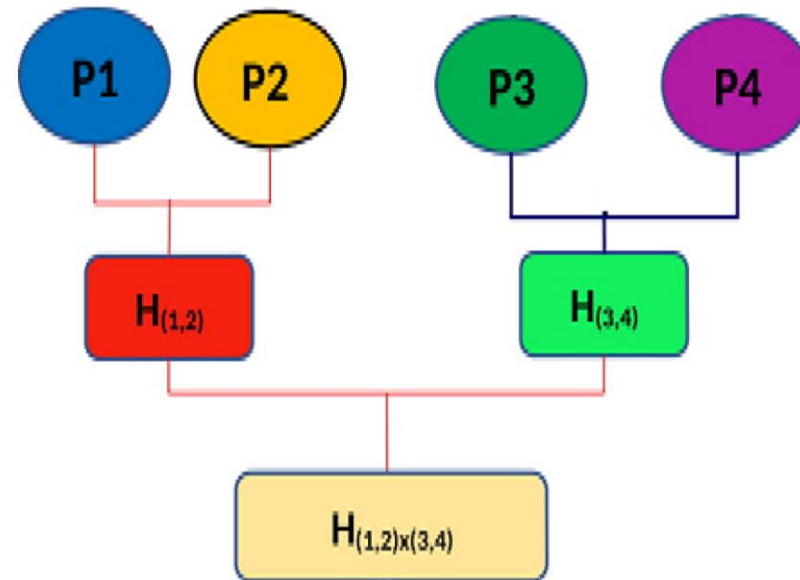
Blast resistance *R* genes pyramiding in temperate japonica rice

Gabriele Orasen · Raffaella Greco · Enrico Puja · Carlo Pozzi ·
Maria Rosaria Stile

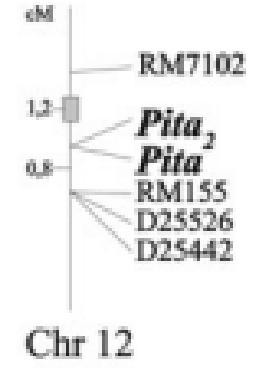
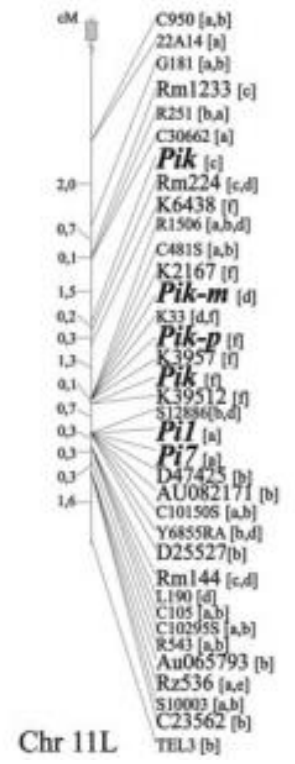
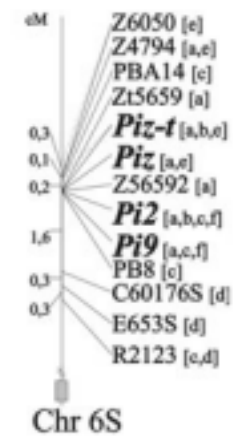
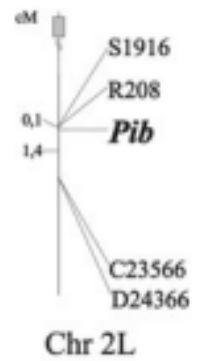
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Gene pyramiding

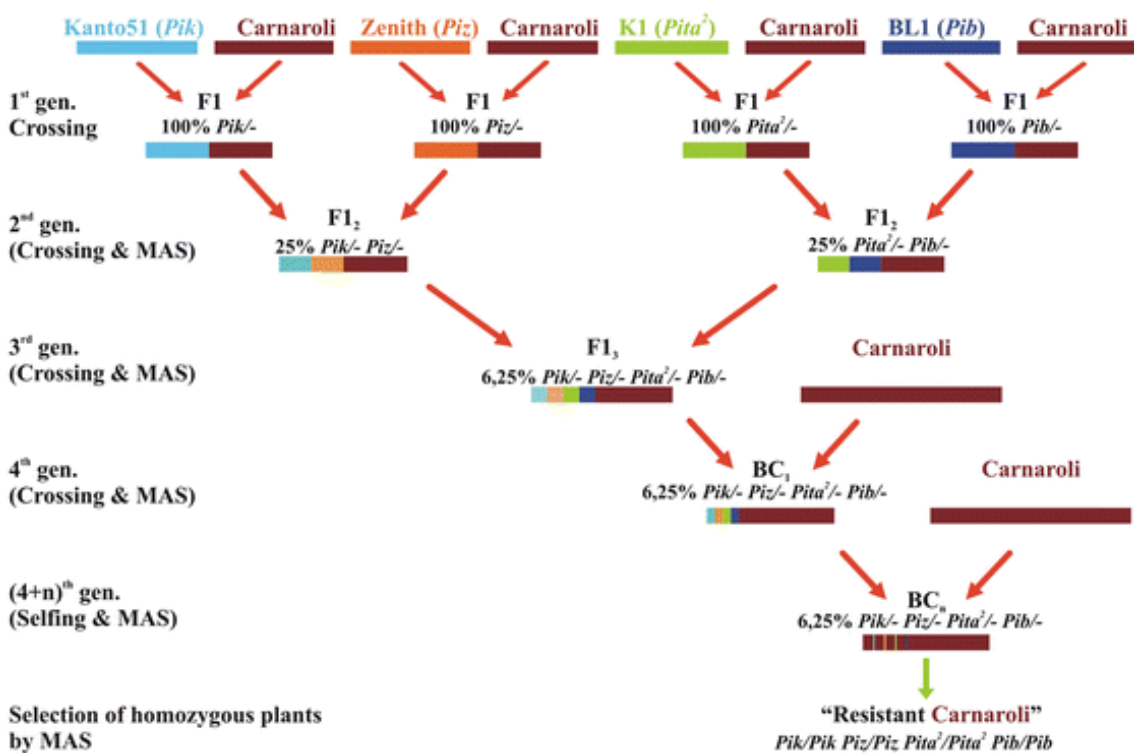


I geni di resistenza



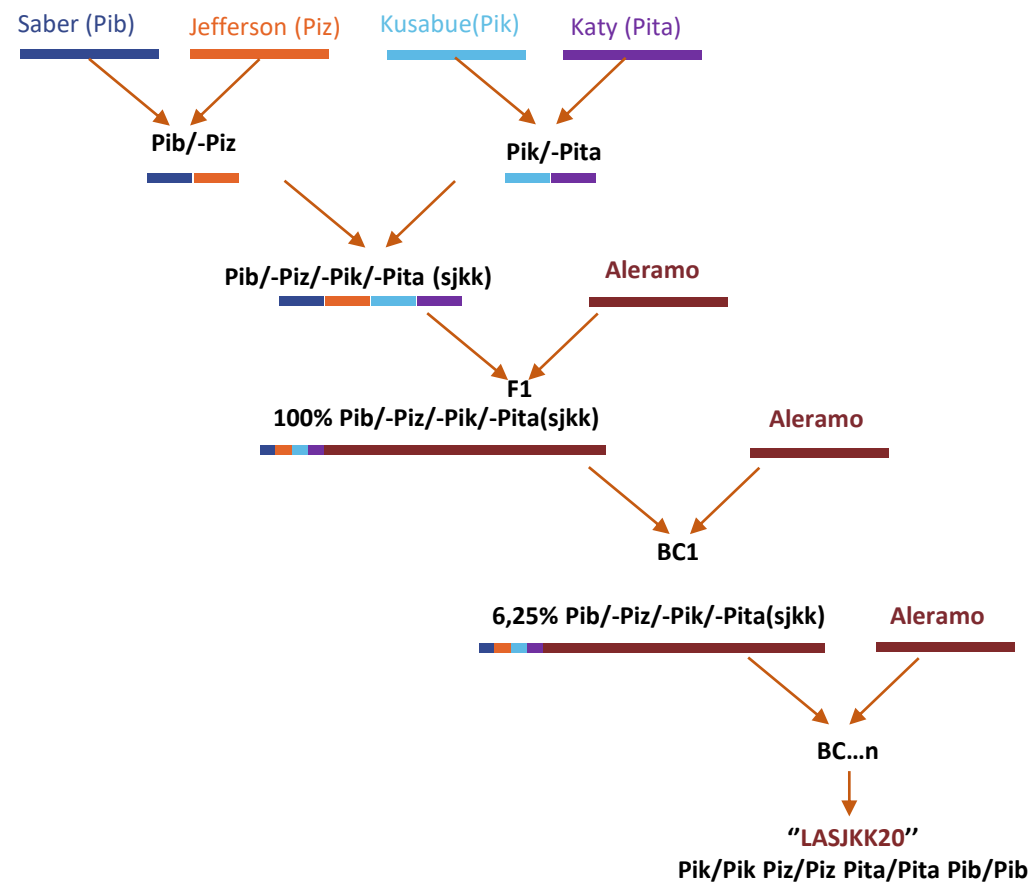
Gene pyramiding

• Pyramiding “tradizionale”



Tacconi et al., 2010

• Pyramiding “alternativo”



AA x aa

	A	A
a	Aa	Aa
a	Aa	Aa

$\frac{1}{1}$

Aa x aa

	A	a
a	Aa	aa
a	Aa	aa

$\frac{1}{2}$

$\frac{1}{2}$

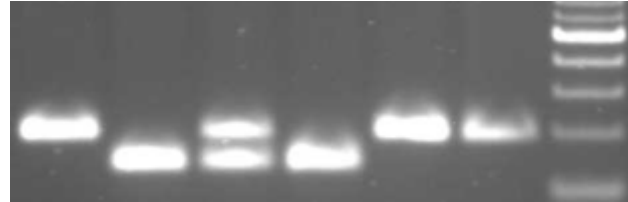
$$\frac{1}{2} * \frac{1}{2} * \frac{1}{2} * \frac{1}{2} = \frac{1}{16}$$



	A	a
A	AA	Aa
a	Aa	aa

$$\frac{1}{4} * \frac{1}{4} * \frac{1}{4} * \frac{1}{4} = \frac{1}{256}$$

Marcatori molecolari (MAS)



Marker	Gene	Chr	Forward primer	Reverse primer	References
Pib5	<i>Pib</i>	2L	CTACTGCTCTCGCTCCGAATTCC	CAGAATTTTGTTCAGGAACCTGCC	Tacconi et al. (2010)
K2167	<i>Pik</i>	11L	CGTGCTGTGCGCTGAATCTG	CACGAACAAGAGTGTGTCCG	Hayashi et al. (2006)
Pita3	<i>Pita2</i>	12L	AGTCGTGCGATGCGAGGACAGAAAC	GCATTCTCCAACCCTTTTGCATGCAT	Tacconi et al. (2010)
Z4794	<i>Piz</i>	6S	TGAATGTGAGAGGTTGACTGTGG	CACGCCACCCTTCAATGGAGACT	Hayashi et al. (2006)
ZT56591	<i>Piz-t</i>	6S	TTGCTGAGCCATTGTTAAACA	ATCTCTCATATATATGAAGGCCAC	Hayashi et al. (2006)

Orasen et al., 2020

Article

Marker-Assisted Pyramiding of Blast-Resistance Genes in a *japonica* Elite Rice Cultivar through Forward and Background Selection

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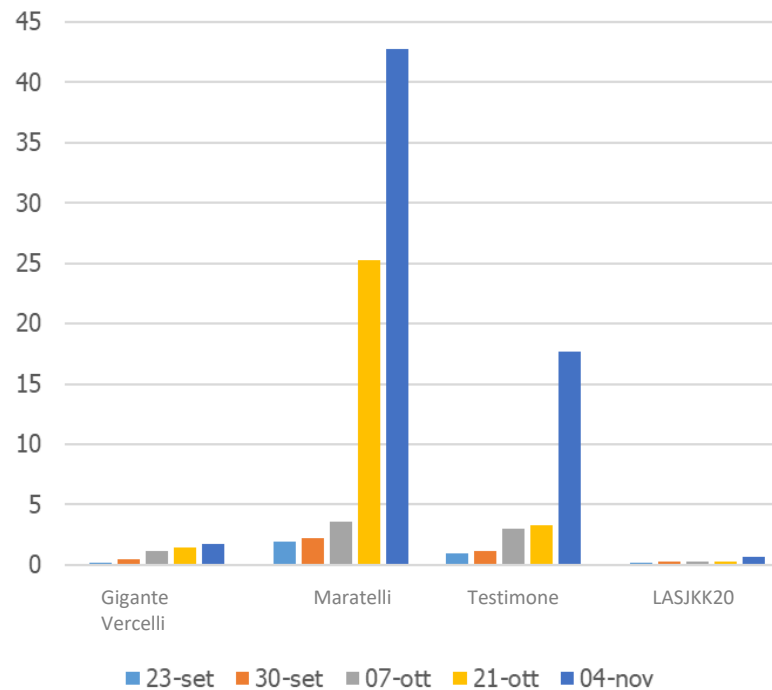




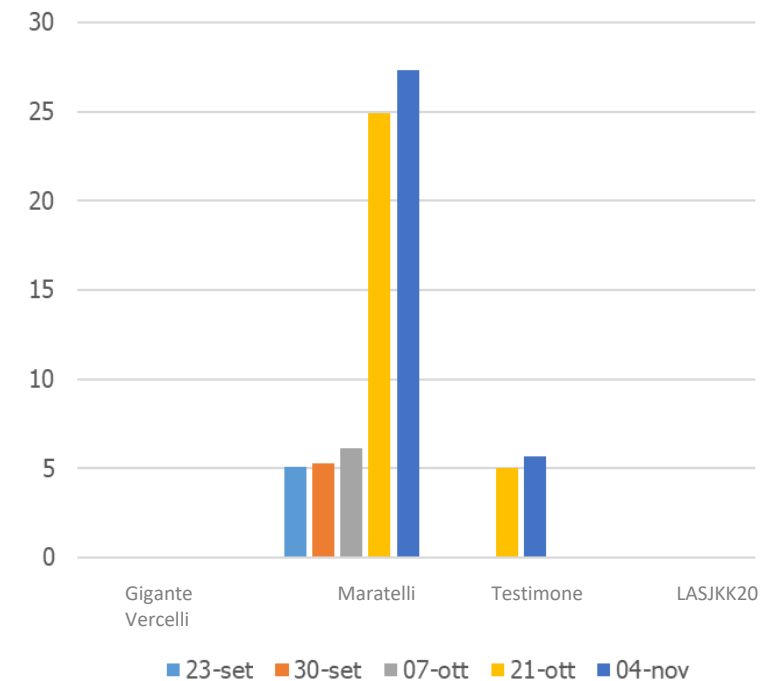
Prove di inoculo

Gigante Vercelli
Maratelli
Testimone
LASJJK20

% of severity on leaf



% of severity on ear



Ringraziamenti

- Innovatec
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 - CREA
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 - Carlo Caccia
 - Dr Andrea Saviolo
-
- Professor Aldo Ferrero
 - Professor Francesco Salamini