



Piacenza, 6 - 9 September 2022

**ON MENDEL'S FOOTSTEPS
FROM GENES TO FORK**

SCIENTIFIC PROGRAMME

TUESDAY, SEPTEMBER 6

- 13:00 – 14:30** **Registration**
- 14:30 – 15:00** **Opening ceremony**
Chairpersons: Filippone E., Marocco A., Cattivelli L.
Welcome address by Institutional and Local Authorities
- 15:00 – 16:45** **Session 1 – One health – Plant genes for human health**
Chairpersons: Ambrosone A., Comino C.
- 15:00 – 15:30** **Invited Lecture**
Bosch D.
Plant terpene biosynthesis genes for human health. Application via genome editing in chicory; the EU-CHIC project
- 15:30 – 15:45** *Diretto G., Frusciante S., Ahrazem O., Gomez-Gomez L., Rambla J.L., Granell A., Argandona J., Moraga A., Lobato-Gomez M., Presa S.*
Engineering high levels of saffron apocarotenoids in tomato
- 15:45 – 16:00** *Ciacchiulli A., Salonia F., Pindo M., Stefani E., Amenta M., Caruso M., Licciardello C.*
Colourimetric, genetic, transcriptomic and metabolomic approaches on four lycopene-rich citrus varieties for broad applications in biotechnology
- 16:00 – 16:15** *Colombo F., Bertagnon G., Sangiorgio S., Singh S., Pilu R.*
Chasing the main pleiotropic effects in low phytic acid1-1 mutant: a sustainable solution to non-renewable phosphorus

- 16:15 – 16:30 *Botticella E., Testone G., Buffagni V., Palombieri S., Lucini L., Giannino D., Lafiandra D., Sestili F.*
Tailoring starch biosynthesis in wheat hits crucial kernel metabolic pathways as disclosed by multiple omics approaches
- 16:30 – 16:45 *Simoni S., Vangelisti A., Clemente C., Tavarini S., Usai G., Mascagni F., Natali L., Angelini L.G., Cavallini A., Giordani T.*
Transcriptomic analysis of *Stevia rebaudiana* (Bertoni) provides novel insights into steviol glycosides and phenolic compounds biosynthesis and accumulation
- 16:45 – 17:10 Coffee break and online poster viewing**
- 17:10 – 19:00 Session 2 – One health – Developing the holobiont concept**
Chairpersons: Mastrangelo A.M., Salvi S.
- 17:10 – 17:40 **Invited Lecture**
Hochholdinger F.
Genetic control of maize root formation and its interaction with the rhizosphere
- 17:40 – 17:55 *Bertola M., Righetti L., Gazza L., Ferrarini A., Fornasier F., Cirilini M., Lolli V., Galaverna G., Visioli G.*
Evolution of rhizosphere microbial communities' composition and activity during perennial wheat crops cultivation
- 17:55 – 18:10 *Vangelisti A., Cella F., Simoni S., Avio L., Turrini A., Sbrana C., Incrocci L., Pardossi A., Natali L., Cavallini A., Giordani T.*
Arbuscular symbiosis in soilless culture: transcriptomic and biochemical analyses in *Lactuca sativa* plants
- 18:10 – 18:25 *Cuccurullo A., Yoneyama K., Bouwmeester H., D'Agostino N., Festa G., Camerlengo F., Contaldi F., Cardi T., Nicolia A.*
Phenotypic comparison of CRISPR/Cas9 tomato mutants targeting genes responsible for the biosynthesis of strigolactones
- 18:25 – 18:40 *Martinelli F., Vergata C., Ferrini F., Moura B., Buti M., Baccelli I., Mengoni A., Vaccaro F.*
Hidden plant responses to urban particulate matter
- 18:40 – 19:00 General discussion

WEDNESDAY, SEPTEMBER 7

- 09:00 – 10:45** **Session 3 – Phytohormones, sensing and signaling**
Chairpersons: Beretta M., Leone A.
- 09:00 – 09:30 **Invited Lecture**
Caño-Delgado A.I.
Deciphering the role of brassinosteroids in plant adaptation to climate change
- 09:30 – 09:45 *Vicentini G., Bignardi A., Moore S., Cazzaniga F., Pirota M., Giaume F., Gomez-Ariza J., Pierce S., Fornara F., Brambilla V.*
PREMATURE INTERNODE ELONGATION 1 (PINE1) represses GIBBERELLIN sensitivity in the rice stem
- 09:45 – 10:00 *Busatto N., Moretto M., Farneti B., Populin F., Vrhovsek U., Commisso M., Sonogo P., Biasioli F., Guzzo F., Fontana P., Costa F.*
The ripening initiation of apple fruit is regulated by a hormonal circuit sustained by auxin
- 10:00 – 10:15 *Simoni L., Simeoni F., Conti L., Tonelli C., Castorina G., Skiryecz A., Galbiati M.*
The AtMYB60 transcription factor integrates ABA and oxylipin signalling in guard cells
- 10:15 – 10:30 *Giulietti S., De Lorenzo G., Savatin D.*
Insights into the Arabidopsis NPK1-related Protein kinases (ANPs) role in danger signaling
- 10:30 – 10:45 General discussion
- 10:45 – 11:15** **Coffee break and online poster viewing**
- 11:15 – 13:00** **Session 4 – Comparative genomics and pangenomics**
Chairpersons: Maccaferri M., Mazzucotelli E.
- 11:15 – 11:45 **Invited Lecture**
Wulff B.
Sustainable control of disease resistance – the case for GM wheat
- 11:45 – 12:00 *Bozzoli M., Bruschi M., Nefzaoui M., Prestera M., Thomelin P., Ober E., Quiroz Chávez J., Ramirez Gonzalez R., Gaurav K., Arora S., Uauy C., Brande W., Tuberosa R., Maccaferri M.*
Exploiting the full potential of a low-linkage disequilibrium, fully re-sequenced *Agilops tauschii* collection for GWAS targeting root system architecture
- 12:00 – 12:15 *Guerra D., Viottini G., Li C., Naz A., Mascher M., Stein N., Cattivelli L., Tondelli A.*
A gene duplication at the Blp1 locus is associated with the black grain phenotype in barley
- 12:15 – 12:30 *Toppino L., Sirangelo T.M., Tassone M.R., Bagnaresi P., Lopatriello G., Delledonne M., Rotino G.L.*
Genomic and transcriptomic investigation about *Fusarium oxysporum* f. sp. *melongenae* resistance in '305E40' eggplant line

- 12:30 – 12:45 *Rossato M., Marcolungo L., De Antoni L., Lopatriello G., Bellucci E., Cortinovia G., Frascarelli G., Nanni L., Bitocchi E., Bett K., Ramsay L., Konkin D.J., Delledonne M., Papa R.*
CRISPR-Cas9-based repeat depletion for high-throughput genotyping of complex plant genomes
- 12:45 – 13:00 General discussion
- 13:00 – 14:30 Lunch break**
- 14:30 – 16:30 Session 5 – New routes to plant adaptation and sustainable agriculture**
Chairpersons: Dell'Acqua M., Lanubile A.
- 14:30 – 15:00 **Invited Lecture**
Dubcovsky J.
Reverse genetic tools and their utilization to dissect grain yield components in wheat
- 15:00 – 15:15 *Forestan C., Rosignoli S., Sciara G., Bruschi M., Sangiorgi G., Ormanbekova D., Tuberosa R., Maccaferri M., Salvi S.*
Exploring the molecular bases of Root Growth Angle and its regulation in barley and wheat
- 15:15 – 15:30 *Gómez-Álvarez E.M., Tondelli A., Nghi K.N., Viktoriia V., Valè G., Perata P., Pucciariello C.*
Barley germination after flooding events depends on hypoxia-induced secondary dormancy
- 15:30 – 15:45 *Guche M.D., Pilati S., Dalla Costa L., Moser C., Guella G., Trenti F., Lanubile A., Marocco A.*
Functional study of lipoxygenase-mediated resistance against *Aspergillus flavus* and *Fusarium verticillioides* infection in maize
- 15:45 – 16:00 *D'Incà R., Mattioli R., Tomasella M., Tavazza M., Maccone A., Tavazza R., Martignago D., Incocciati A., Fraudentali I., Cona A., Angelini R., Nardini A., Tavladoraki P.*
CRISPR/Cas9-mediated mutagenesis of a polyamine oxidase gene increases tomato plant tolerance to drought stress
- 16:00 – 16:15 *Licciardello C., Scalabrin S., D'Amante G., Russo M.P., Caruso P., Vidotto M., Alves M.N., Wulff N.A., Vendramin V., Ollitrault P., Peña L.*
Eremocitrus glauca, a genetic source to fight against Huanglongbing, a highly destructive citrus disease
- 16:15 – 16:30 General discussion

16:30 – 17:00 **SIGA Young Research Award 2022**
Chairpersons: Filippone E., Rosellini D.

Puglisi D.

Genomic prediction of grain yield in a barley MAGIC population modeling genotype per environment interaction

Magris G.

The genomes of 204 *Vitis vinifera* accessions reveal the origin of European wine grapes

Award ceremony

17:00 – 17:30 **Coffee break and online poster viewing**

17:30 – 19:30 **SIGA General Assembly**

THURSDAY, SEPTEMBER 8

- 09:00 – 11:00** **Session 6 – Genetics and beyond: from Mendel to epigenomics**
Organized by Next Generation SIGA
Chairpersons: Cassibba V., Mascagni F.
- 09:00 – 09:30 **Invited Lecture**
Benoit M.
Impact of structural and epigenetic variation on quantitative traits during tomato domestication
- 09:30 – 09:45 *Usai G., Ventimiglia M., Marturano G., Vangelisti A., Simoni S., Cavallini A., Giordani T., Natali L., Zuccolo A., Mascagni F.*
Exploring a model for the formation of novel genes from transposons in plants
- 09:45 – 10:00 *de Sario F., Bozzoli M., Forestan C., Sakuma S., Gabay G., Milner S.G., Snowdon R., Salvi S., Tuberosa R., Schnurbusch T., Maccaferri M.*
Fine mapping and characterization of Grain Number Increase-2 locus (GNI-A2) in durum wheat
- 10:00 – 10:15 *Novi J.B., Mazzucotelli E., Desiderio F., Pourkhorshid Z., Viola P., Invernizzi C., Oliveri F., Randazzo B., Mastrangelo A.M., Marone D., Roncallo P., Campana M., Bozzoli M., Meriggi D., Omar I., Baidani A., Ozkan H., Bashour I., Sharif Ragab Mohamed E., Gadaleta A., El Amil R., Nazari K., Bassi F., Cattivelli L., Tuberosa R., Maccaferri M.*
Multienvironment assessment and GWAS of the global durum genomic resource for resistance to yellow rust
- 10:15 – 10:30 *Mineri L., Cerise M., Giaume F., Vicentini G., Martignago D., Chiara M., Galbiati F., Sergi E., Spada A., Horner D., Fornara F., Brambilla V.*
A common set of genes responding to florigenic and photoperiodic induction at the shoot apical meristem of rice
- 10:30 – 10:45 *Puglisi D., Lopatriello G., Grosso V., Caruso M., Bazzano M., Scuderi G., Catara A., Caruso P., Rossato M., Licciardello G., Licciardello C.*
The transcriptome of *Citrus aurantium* sequenced and assembled by using a hybrid approach: a novel basis to investigate the cross-protection mechanism of Citrus tristeza virus
- 10:45 – 11:00 *Paolo D., Rossato M., Testone G., Frugis G., Di Vittori V., Liberatore C., Galbiati M., Cominelli E., Locatelli F., Delledonne M., Cortinovis G., Bellucci E., Bitocchi E., Rodriguez M., Attene G., Aragao F., Porch T.G., Papa R., Sparvoli F.*
Genetics of domestication in common bean (*Phaseolus vulgaris* L.): an approach for the analysis of candidate genes via TILLING-by-sequencing
- 11:00 – 11:30** **Coffee break and online poster viewing**
- 11:30 – 12:30** **Session 6 – (cont.)**

- 11:30 – 11:45 *Zhu W., Yang L., Wu D., Meng Q., Deng X., Huang G., Chen X., Ferrándiz C., Liang W., Dreni L., Zhang D.*
Rice *SEPALLATA* genes *OsMADS5* and *OsMADS34* cooperate to limit inflorescence branching by repressing the *TERMINAL FLOWER1*-like gene *RCN4*
- 11:45 – 12:00 *Macharia M.W., Tamang A., Caproni L., Miculan M., Pe' M.E., Dell'Acqua M.*
Genetic structure of maize landraces from the Himalayan region
- 12:00 – 12:15 *Joseph J., Canton M., Aiese Cigliano R., Bonghi C., Varotto S.*
A transcriptomic study on peach floral and vegetative buds during winter dormancy
- 12:15 – 12:30 General discussion
- 12:30 – 14:30 Lunch break**
- 14:30 – 16:45 Workshop – Coordinamento delle politiche di conservazione e utilizzo delle risorse genetiche vegetali per attività di ricerca e di miglioramento genetico**
Discussants: Ercolano M.R., Giannino D.
- 14:30 – 16:30 *Mazzucato A.*
Agro-biodiversità: l'impatto delle visioni generali e particolari
Tucci M.
La tutela, gestione e valorizzazione delle RGVAAs nel groviglio dei regolamenti internazionali, nazionali e regionali. La concertazione del progetto ABC
Laghetti G.
I progetti, i programmi e le visioni del Consiglio Nazionale delle Ricerche
Verde I.
Il programma RGV FAO: visioni e problematiche sul reperimento, conservazione, utilizzo e condivisione delle risorse genetiche vegetali del CREA
Giuliano G.
Una proposta di infrastruttura Europea dedicata alle RGVAAs
Papa R.
Il progetto "INCREASE": collezioni intelligenti di risorse genetiche di leguminose alimentari per i sistemi agroalimentari europei
Maccaferri M.
Il coordinamento italiano delle "Global Durum Resources", un progetto collaborativo mondiale: dalle risorse agli utilizzatori finali
Goritschnig S.
Progetto EVA: caratterizzazione e valutazione delle RGVAAs delle banche europee mediante partenariati internazionali pubblico-privati
Lipparini A.
La posizione di Assosementi sull'impiego delle RGVAAs

Manzella D.

La normativa internazionale in evoluzione: risorse genetiche, dati e nuove prospettive per la condivisione dei benefici

16:30 – 16:45

Conclusioni

Cardi T.

16:45 – 17:30

Coffee break and online poster viewing

17:30 – 19:00

Parallel Poster Sessions in presence

20:30

Social Event (*Collegio Alberoni, Via Emilia Parmense 77, Piacenza*)

FRIDAY, SEPTEMBER 9

- 09:30 – 12:00** **Session 7 – SIGA on Mendel's footsteps**
Chairpersons: Cattivelli L., Masci S.
- 09:30 – 09:45 *Nicolia A., Festa G., D'Agostino N., Scotti N., Arimura S., Cardi T.*
Mitochondrial DNA editing in potato
- 09:45 – 10:00 *Dal Corso G., Galati S., Giannelli G., Fragni R., Buschini A.,
Furini A., Visioli G.*
The involvement of DNA methylation in enhancing heavy metal
hypertolerance
- 10:00 – 10:15 *Populin F., Vittani L., Stuerz S., Buehlmann A., Khomenko I.,
Biasioli F., Vrhovsek U., Masuero D., Zanella A., Busatto N.,
Costa F.*
Comparative analysis of 'Granny Smith' and 'Ladina' apple cultivars
in relation to the onset of the postharvest disorder superficial scald
- 10:15 – 10:30 *Vannozzi A., Perin C., Palumbo F., Sandri M., Zuccolotto P.,
Zenoni S., Barcaccia G., Pindo M., Cestaro A., Sonogo P.,
Lucchin M.*
Dissecting the effect of soil on berry transcriptional plasticity in two
Italian grapevine varieties (*V. vinifera* L.)
- 10:30 – 10:45 *Casarin S., Bertazzon N., Sirangelo T.M., Filippin L., Cattivelli L.,
Angelini E., Bagnaresi P.*
The study of three grapevine clones to uncover the genetic traits
responsible for the low susceptibility to *Flavescence dorée*
- 10:45 – 11:00 *Bonarrigo M., Palombieri S., Potestio S., Sestili F., Lafiandra D.,
Miceli C., Messina B., Russo G., Masci S.*
Evaluation of genetic diversity of Sicilian autochthonous tetraploid
wheat varieties by gluten protein analysis
- 11:00 – 11:15 *Vitale P., Laidò G., Dono G., Pecorella I., Ramasubramanian V.,
Lorenz A., De Vita P., Pecchioni N.*
Multivariate genomic prediction for agronomic traits in durum wheat
under two field managements
- 11:15 – 11:45 **Invited Lecture**
Morgante M.
The evolving definition of a gene in the context of modern plant
breeding
- 11:45 – 12:00 General discussion
- 12:00 – 12:15** **Closing ceremony**
Chairpersons: Filippone E., Salvi S.