79TH IIRB CONGRESS, 27-28/2/2024, BRUSSELS

POSTER PROGRAMME

INTERNATIONAL INSTITUTE OF SUGAR BEET RESEARCH

1 Agronomy

Fertiliser use and optimisation

1.1	I. Bajić *et al.*	Effect of nitrogen mineral nutrition in extreme climatic conditions on sugar beet production
1.2	P. Barłóg, *et al.*	Content and accumulation of nutrients by sugar beet varieties differing in yield potential and tolerance to pathogens
1.3	D. Hyndrikx *et al.*	Nitrogen and energy use in sugar beet
1.4	A. van Valen	Effects of different nitrogen fertilisation strategies on sugar beet growth and yield
1.5	A. van Valen	Effects of sodium fertilisation in sugar beet on sandy soils in the Netherlands
1.6	G. Heller *et al.*	CULTAN – an alternative fertilisation method in sugar beet in the face of sustainable change?
1.7	O. Popov *et al.*	Application of mealworm FRASS fertiliser in sugar beet production: Step towards profitable and ecologically balanced sugar beet production
1.8	D. Horn *et al.*	Development of humus-C, EUF extractable organic nitrogen (N_{org}) and EUF dissolved organic carbon (DOC) in a long-term field trial with different precrops and N- P-, K-fertilisation strategy
1.9	R. Kaipainen	New methods of increasing carbon sequestration on sugar beet fields in Finland
1.10	S. Muurinen	LASSO – use the nitrogen and bind the carbon
1.11	G. Barratt	Optimising sugar beet management practices to reduce greenhouse gas emissions

Irrigation and drought tolerance

1.12	A. Olsson Nyström, L. Persson	Long-term effects of liming in crop rotations with sugar beet
1.13	R. P. Naegele *et al.*	Seedling drought tolerance in sugar beet is predicted by leaf water vapor and stomatal conductance
1.14	J. Adrian *et al.*	Description of the dynamics of water stress in sugar beet crops
1.15	P. Tauvel *et al.*	Evaluating and optimizing strategies to irrigate sugar beet
1.16	K. B. Abreha *et al.*	Drought tolerance screening of sugar beet lines under greenhouse and field conditions
1.17	D. Hyndrikx *et al.*	Robust trialling under climate change

Root analysis

1.18	L. Dahl *et al.*	Sugar beet fine root distribution: root imaging analysis platform for sugar beet root system measurement
1.19	J. Arnhold *et al.*	A deeper look – root growth observations with the minirhizotron technique

2 Storage

2.1	A. Andrusiak *et al.*	Quality Parameters of sugar beet roots depending on the method of harvesting and length of storage
2.2	G. Croonen	AI based detection and quantification of soil adhesion, excess vegetation, damage and rot on sugar beets
2.3	M. Leijdekkers *et al.*	Effect of different virus yellows infection timepoints on storability
2.4	S.L. Kandel *et al.*	Use of low concentration chlorine dioxide gas to manage storage disease in sugar beets
2.5	J. Ekelöf, A. Wauters	Quick tests for sugar beet respiration
2.6	K. Fugate *et al.*	Transcriptional and metabolomic changes in postharvest sugar beet roots identify genes potentially involved in respiratory sucrose loss
2.7	D. Ilina *et al.*	Disentangling factors related to storability in sugar beet from different (molecular) angles

3 Breeding

Breeding methods

3.1	C. Diller *et al.*	Improving emasculation success in sugar beet
3.2	B. Müller *et al.*	Phenomic selection using Near-Infrared (NIR) wavelengths: a new tool to predict sugar yield
3.3	R. P. Naegele, L. E. Hanson	The USDA ARS East Lansing sugar beet breeding programme: adapting to meet the needs of a changing industry
3.4	F. Finger, K. Fugate	Expression of SWEET and TST sugar transporters during sugar beet growth and taproot storage
3.5	T. Erichsen *et al.*	The challenge to produce a representative sugar beet sample

Bolting resistance

3.6	G. Campagna, T. Iaboli	Varieties with a reduced degree of induction to early flowering for autumn sowing in the beet growing areas of COPROB (Italy)
3.7	C. Chu	Genetic analysis of genes controlling annual and biennial growth habit in sugar beet germplasm

Remote sensing for breeding and precision farming

3.8	D. Eyland *et al.*	Remote sensing technologies for data-driven plant breeding
3.9	S. Jeppson	The use of unmanned aerial vehicles (UAVs) in sugar beet cultivation
3.10	F. Joudelat, S. Soubreyrand	Satellite imagery use-cases for sugar beet monitoring
3.11	O. Nielsen, C. Szilas	Quantification of soil parameters and agricultural product interactions using field mapping, precision farming technologies and vegetation indexes – a GIS-based alternative to classical field trials

4 Phytopathology

Fungal leaf diseases

4.1	Q. Tilloy	Cristal Cerc'OAD®: a Cercospora forecasting model used by farmers
4.2	K. Pavlu *et al.*	3 years of experience with the upgraded signalling system of *Cercospora beticola*
4.3	A. Hubaux, A. Wauters	Efficacy of foliar fungicides to control *Cercospora beticola*
4.4	A. Kiniec, J. Piszczek	The in vitro activity determination of essential oils against *Cercospora beticola*
4.5	F. Kempl, M. Seiter	Control of resistant Cercospora leaf spot by fungicides and tolerant varieties
4.6	A. K. Lien *et al.*	DMI fungicide sensitivity in *Cercospora beticola* following forced selection from repeated application and tank-mixing
4.7	A. K. Chanda, A. K. Lien	Management of rhizoctonia root rot and Cercospora leaf spot in sugar beet
4.8	A. Buckley	The sweet side of fungicides – physiological effects of fungicides on sugar beet growth and yield
4.9	J. Kimmel *et al.*	Optimisation of fungicide control with copper against *Cercospora beticola*
4.10	L. Potyondi *et al.*	Change in copper content in beet leaves by using various copper compounds and adjuvants under the influence of precipitation
4.11	Y. Yang *et al.*	Impact of cultivar resistance on *Cercospora beticola* epidemiology on sugar beet
4.12	A. Compton *et al.*	Integrated fungal foliar disease management of sugar beet
4.13	A. L. Hansen, P. Trénel	Interactions between crop biomass and development of leaf diseases in sugar beet with the potential to graduate fungicide applications
4.14	J. Li *et al.*	QTL mapping for a monogenic resistance of powdery mildew in sugar beet
4.15	D. Hyndrikx *et al.*	Breeding for robust and durable leaf disease tolerance – doing more with less?
4.16	E. Thorell, V. Rossi	Breeding as a mitigation tool to reduce reliance on chemicals
4.17	E. Thorell, L. Ripa	Multigenic resistance leads the way on sustainable Cercospora leaf spot control
4.18	H. Ebmeyer *et al.*	CR+ Management Goal: GREEN LEAVES UNTIL HARVEST – an integrated management concept for Cercospora control in sugar beet
4.19	J. C. Lein *et al.*	Gaining ground against Cercospora – sustainable disease control with CR+

POSTER PROGRAMME

INTERNATIONAL INSTITUTE OF SUGAR BEET RESEARCH

Rhizomania / soilborne diseases

4.20	M. Fattori, B.- L. Lennefors	Survey of Rhizomania *Rz1* resistance break-down in North Africa and Middle East
4.21	V. Ramachandran *et al.*	Molecular characterisation of Rhizomania resistance-breaking isolates of beet necrotic yellow vein virus in the United States
4.22	A. Shahpari, J. Lissens	Aphea.Bio's APEX platform: screening for biocontrol microorganisms against soilborne diseases in sugar beet
4.23	B. Dotson *et al.*	Breeding for better biocontrol symbiosis of *Trichoderma* against *Aphanomyces*

Virus yellows monitoring and control

4.24	M. Stange *et al.*	MODEFY – MOnitoring and DEFence measures against yellowing virus diseases in sugar beet
4.25	A.J.D. Wright, M. Stevens	Optimising the use of UAV-remote sensing to phenotype varietal tolerance to virus yellows
4.26	L. de Zinger *et al.*	National variety list admission criteria for varieties with virus yellows tolerance in the Netherlands
4.27	N. Klingemann *et al.*	Managing virus yellows in sugar beet – an integrated approach
4.28	V. Cadot *et al.*	A new protocole to assess tolerance/ resistance for sugar beet varieties to virus yellows
4.29	M. Delsaux, E. Dubert	Resistance and tolerance to virus yellows in hybrids from DLF Beet Seed
4.30	V. Puthanveed *et al.*	Transcriptomic study on responses of sugar beet to beet mild yellowing virus
4.31	J. Lin Ni *et al.*	Efficient and high-throughput identification for viruses in sugar beet
4.32	S. Schop	Multiplex and Luminex assay for the detection of yellowing viruses
4.33	P. Hellin *et al.*	Monitoring of beet yellows-associated viruses in Wallonia, Belgium
4.34	I. Stockmans *et al.*	The VirBiCon project: towards sustainable management of viral yellowing in sugar beet
4.35	N. Rojas-Preciado *et al.*	Forecasting the incidence of viral yellowing in sugar beet: Identification of risk factors
4.36	E. Everaert *et al*.	Prevalence and virulence of yellowing viruses
4.37	S. Coenen *et al.*	First attempt to map progress of virus yellows patches in different varieties
4.38	M. Beelaert *et al.*	Understanding the beet yellows drivers in divers landscape contexts
4.39	M. Beelaert *et al.*	Virobett – understanding the spread of sugar beet yellows viruses to improve integrated pest management strategies

Pest control

4.40	S. Czaja *et al.*	Aphid monitoring in sugar beet – an important component in integrated pest management
4.41	J. Schmitt *et al.*	SIMAphid- a simulation model for the first occurance of *Myzus persicae* in spring, a vector of viruses in sugar beet
4.42	M. Gilard, A. Wauters	Observation and warning network for insect pests
4.43	C. Dufrane *et al.*	Intercropping beet-barley to reduce aphid populations in sugar beet fields in Belgium
4.44	O. Popov *et al.*	Transmission risks of beet yellows virus by *Myzus persicae* and *Aphis fabae* aphids in diverse experimental conditions
4.45	A. Monteiro	Assessments of solutions against *Myzus persicae* to prevent sugar beet yellows
4.46	K. Tougeron	Agro-ecological infrastructures to help control aphids
4.47	T. Dardouri *et al.*	Control of sugar beet yellows viruses by behavioural manipulation of aphid vectors in the field via volatiles
4.48	M. Stevens *et al.*	Beet moth monitoring in the north-west of Europe
4.49	E. Raaijmakers	Row application of insecticides and the use of green insecticides to achieve goals of the farm to fork strategy
4.50	S. Gunter	Alternative cultivation techniques for sugar beet

4.51	C.A. Roß, N. Stockfisch	Appropriate indicators for monitoring chemical plant protection use in sugar beet cultivation
4.52	G. Campagna, T. Iaboli	*Lixus junci* diffusion on Sugar Beet in Po Valley and control strategy
4.53	D. Lemic *et al.*	Evaluating sugar beet varietals and seed treatments for enhanced pest control
4.54	M. Dokal, M. Seiter	Efficacy of a new active ingredient in sugar beet coating
4.55	Z. Klukowski, J. Piszczek	Modeling the spring migration timing of beet root weevil (*Asproparthenis punctiventris* (Germ.)) based on the sum of effective temperatures
4.56	A. Kurtovic *et al.*	Data- and model-based prediction of the sugar beet weevil occurrence
4.57	K. Sielemann *et al.*	Characterisation of a nematode tolerance locus in sugar beet

RTD and SBR

4.58	Ž. Ćurčić *et al.*	Field trial evaluation to RTD susceptibility/tolerance to RTD in Serbia: Is there a tolerance to RTD in current varieties?
4.59	B.-L. Lennefors *et al.*	Syndrome basses richesses, stolbur and Macrophomina; experiences shared by DLF Beet Seed
4.60	O. Czarnecki *et al.*	Deploying wild beet resistance sources for breeding SBR and RTD tolerant sugar beet varieties
4.61	H. Pfitzner *et al.*	Understanding the threat: the planthopper *Pentastiridius leporinus* and its impact on sugar beet cultivation in Southwest Germany
4.62	C. Lang *et al.*	Bacterial tuber wilt in potato (*Solanum tuberosum*) and its implications for sugar beet (*Beta vulgaris* subsp. *vulgaris*) cultivation in Europe
4.63	M. Schieler *et al.*	SIMPenta- a simulation model for the population dynamics of *Pentastiridius leporinus*, a vector for of phytopathogenes in sugar beet
4.64	J. Bömer, J. Detring	Three-dimensional examination of the tap root of SBR infected sugar beet
4.65	J. Detring, J. Bömer	Optical properties of SBR-diseased sugar beet and development of automated phenotyping routines
4.66	B. Kais *et al.*	Influence of SBR on phloem sap composition of sugar beet and the behavior of its vector *Pentastiridius leporinus*

5 Weed control

5.1	J. Berg, H. Bernhardt	Herbicide reduction in sugar beet cultivation by band spraying and mechanical weed control
5.2	M. Nilars, O. Nielsen	Optimal use of herbicides in combination with mechanical weed control
5.3	T. Leborgne	Overview of the latest spot spraying technologies in beet
5.4	S. Muurinen	FarmDroid FD20 robot on the sugar beet and winter rapeseed rows in Finland
5.5	S. van der Heijden	Effectiveness of various herbicides pre-emergence in sugar beet
5.6	S. van der Heijden	Resistant ryegrass in sugar beet
5.7	M. Gertz *et al.*	CONVISO® SMART: driving innovation in sugar beet weed control
5.8	M.L. Wilhelm	CONVISO® SMART launch Germany – customer satisfaction and stewardship management hand in hand
5.9	C. Wellhausen *et al.*	Control of groundkeepers from ALS-tolerant sugar beet in following crops
5.10	G. Campagna, T. Iaboli	Experience of weed control strategy Conviso One on sugar beet in the Po Valley
5.11	G. Campagna, T. Iaboli	Experience of weed control strategy groundkeeper sugar beet in the Po Valley
5.12	M. Seiter *et al.*	To get most out of Conviso Smart varieties