78TH IIRB CONGRESS, 21-23/6/2022, MONS
POSTER PROGRAMME

INTERNATIONAL INSTITUTE OF SUGAR BEET RESEARCH

1 Agronomy

Tillage

1.1	S. Muurinen, S. Malmilehto, J. Jussila, M. Palomäki	Hoeing trials in Finland 2020-2021
1.2	G. Courtoy	Long-term impact of different tillage methods on sugar beet

Sugar beet stand

1.3	W.B. Stevens *et al.*	Managing small grain residue to enhance direct-seeded sugar beet stand establishment and yield
1.4	R. Andersson, O. Nielsen	Variable seed rates in sugar beets
1.5	J. Arnhold, F. Ispizua, D. Grunwald, H.-J. Koch	Leaf area index or ground cover: which parameter correlates better with sugar yield affected by row distance?

The crop in the rotation

1.6	S. Muurinen, R. Kaipainen, S. Malmilehto, M. Palomäki	Sugar beet crop rotation development in Finland related to carbon actions
1.7	C. Roß, J. Thies, N. Stockfisch	Diversity of crop rotations with sugar beet
1.8	H.-J. Koch, D. Grunwald, L. Essich, R. Ruser	How much fertilizer nitrogen can we save through cover crop cultivation?

Nutrient supply

1.9	D. Horn, G. Müller	Sustainability of sugar beet cultivation: Humus in soils and humus balance in crop rotations of sugar beet farmers
1.10	M. Benazzi, G. Campagna	Survey on soil fertility in Po Valley in the last 4 years
1.11	G. Bodner *et al.*	Indicators from EUF extracts to monitor soil organic matter
1.12	R. Kaipainen, S. Malmilehto, S. Muurinen	The potential of structural liming in Northern sugar beet production
1.13	A. Olsson Nyström, L. Persson	Long term effects of structure lime on sugar beet growth and yield
1.14	A. van Valen	Effects of sodium application in sugar beet on sandy soils in the Netherlands
1.15	H. Elsayed	Effect of potassium humate fertilization on yield and quality of some sugar beet cultivars
1.16	M. Hussein	Silicon element and its useful effects on yield and diseases resistance of sugar beet plants

Sugar beet cultivation under arid conditions

1.17	G. Barrat	Testing for drought tolerance in sugar beet varieties
1.18	H. Ebmeyer, C. Hoffmann	Drought stress: growth, water consumption and water use efficiency of sugar beet genotypes
1.19	M. Aylaj	Salinity tolerance and interaction between potassium and sodium in salt stress conditions in two sugar beet genotypes (*Beta vulgaris* L.) differing in their resistance
1.20	M. Bazrafshan, J. Niazi, S. Esmaeili	Salt tolerance of different commercial sugar beet cultivars at initial growth stages (germination, emergence, and establishment)
1.21	G. Campagna *et al.*	Studies of varieties with a reduced degree of induction to early flowering for autumn sowing in the beet growing area of COPROB (Italy)
1.22	M. Aghaei, M. Honarvar, M. Bazrafshan	Autumn sugar beet production in Iran, challenges and opportunities

Precision agriculture

1.23	C. Hügel, B. de Wulf	Artificial intelligence in sugar beet: two examples from research to cultivation
1.24	J. Molvot *et al.*	Construction of a model to predict the sugar yield at the microplot level
1.25	G. Brisset, R. Duval	JDISTAS: A tool to predict field readiness

Weed Control

1.26	T. Iaboli, G. Campagna	Weed management in organic sugar beet in Italy – first experience with Farmdroid on field
1.27	S. Paulus, T. Linkugel, A.-K. Mahlein	How to compare weeding robots – a generalized scheme for recognition levels
1.28	S. Torfs	Mechanical weeding – an addition to chemical weed control
1.29	L. Potyondi, J. Kimmel, F. Csima	Comparison of traditional and Conviso smart weeding technology
1.30	J. Kimmel, L. Potyondi, F. Csima	Experimental experience in the application of Conviso Smart Technology
1.31	C. Wellhausen *et al.*	CONVISO® SMART Stewardship: successful management of herbicide-tolerant sugar beet
1.32	S. van der Heijden	Effectiveness of various herbicides on ALS-tolerant weed beets in cereals
1.33	S. Geyer, M. Gepp, F. Kempl, H. Eigner	Weed control with waiver of phenmedipham and triflusulfuron
1.34	D. Laufer, E. Ladewig	Importance of foliar active herbicides for weed control in sugar beet

2 Breeding

New tools for breeding

2.1	P. Lottes, D. Laufer	Modern drone-based assessment of variety trials in sugar beet
2.2	M. Günder *et al.*	Computer vision based plant cataloguing and data framework for UAV images
2.3	J. Bömer, S. Paulus, A.-K. Mahlein	Extraction and establishment of novel geometric plant parameters of sugar beet for variety description using 3D-data
2.4	J. Adrian, F. Maupas	Assessing the potential of a handled VNIR microspectrometer for sugar beet phenotyping

Seed technology and seed treatment

2.5	J. Long, R. Marcinek, R. Nicholls	The role of seed technologies in sugar beet growing past, present and future
2.6	H. Siddiqui, J. Long, R. Nicholls	Inducing plants defences with seed applied elicitors and beneficial bacteria
2.7	B. Vandenbussche *et al.*	A cross-processing chain approach to maximizing seed quality in a changing environment
2.8	H. Thompson *et al.*	Is there a risk to honeybees from use of thiamethoxam as a sugar beet seed treatment?
2.9	K. Wechselberger, J. Heidelmayer, F. Kempl, S. Geyer	Efficacy of seed treatments with and without neonicotinoids

Resistance breeding

2.10	K. Fiedler-Wiechers *et al.*	Climate change – the response from breeding
2.11	M. Fattori	Root-knot nematode – a tailored product development
2.12	O. Amand *et al.*	Root-knot nematode resistant sugar beet varieties – an innovative breeding solution to help growers sustaining their rotation
2.13	A. Rajabi *et al.*	Selection for resistance to rhizomania and root-knot nematode in sugar beet
2.14	N. Wynant *et al.*	Development of a varietal solution against the Virus Yellows complex
2.15	N. Behnke, M. Schumann, W. Beyer, A. Loock	Milestones in Virus Yellows resistance breeding
2.16	B.-L. Lennefors, M. Delsaux, F. Cannaert, L. Holmquist	Evaluation of sugar beet materials for resistance/tolerance to mix infections of Virus Yellows and rhizomania
2.17	L. Holmquist *et al.*	Evaluation of sugar beet resistance sources to mix infections of four different aphid transmitted viruses
2.18	J. Wiessner *et al.*	Control of Virus Yellows in sugar beet – heading for an integrated solution
2.19	O. Czarnecki *et al.*	Sugar beet breeding provides solutions for novel insect threats
2.20	O. Czarnecki *et al.*	Breeding SBR tolerant varieties to support sugar beet farmers in Germany and Switzerland
2.21	A. Wauters	Registration of sugar beet varieties in Belgium: possible new traits?

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3 Phytopathology

Virus diseases

3.1	M. Müllender, E. Maiss, M. Varrelmann, S. Liebe	Characterization of a cDNA full-length clone derived from a *Beet necrotic yellow vein virus* P type population in Pithiviers (F)
3.2	S. Cobb	Strain variation in Virus Yellows and the effect on future virus resistant/tolerant sugar beet varieties
3.3	E. Vanhauwaert	Varietal tolerance for BMYV: 3 years' experience with 2 inoculation densities
3.4	V. Puthanveed, J. Pettersson, A. Kvarnheden	The virome of Swedish sugar beet plants affected by Virus Yellows
3.5	S. Schop	Exploring mature plant resistance in sugar beet to avoid Virus Yellows infection in the field
3.6	L. Boisroux	Monitoring and defence against yellowing virus diseases in sugar beet
3.7	K. Antoons	Virus yellows monitoring in Belgium
3.8	J. Maassen, E. Raaijmakers, A. Buijze	Lessons learned from an extensive communication program around Virus Yellows in The Netherlands

Pest monitoring and control

3.9	E. Raaijmakers, J. Maassen, A. Buijze, N. Chouinard	Evaluation of the aphid warning system to control Virus Yellows in the Netherlands
3.10	K. Fredlund, B.-L. Lennefors	Phytovirus vector behaviour: are aphids selective in their choice of sugar beet host?
3.11	S. Gunter, E. Raaijmakers	The effect of the banker plant *Artemisia vulgaris* on aphids and natural enemies in sugar beet
3.12	H.-J. Koch *et al.*	Plants helping plants: companion plants for aphid control
3.13	C. Royer	The fight against aphids in vegetation in France
3.14	L. Serteyn	Sugar beet and agroecology: creation of a working group of French-speaking actors in the field
3.15	N. Jachowicz	Proof of concept for novel green solutions for insect management in sugar beet through increased agrobiodiversity
3.16	M. Palomäki, T. Houni, S. Muurinen	Flower strips as sugar beet pest management
3.17	M. Palomäki, S. Muurinen	Biocontrol of sugar beet pests
3.18	C.S. Bacci *et al.*	Insect Pest Monitoring goes digital – a new era in sugar beet field observation has been started
3.19	K. Antoons	The efficacy of foliar insecticides to control aphids and transmission of Virus Yellows: results of a few trials in Belgium
3.20	A.L. Hansen, N. Jachowicz	Occurrence and control of pests in Force treated beets in SE and DK
3.21	S. Kaffka *et al.*	Alternatives to chlorpyrifos for sugar beet production in the Imperial Valley of California
3.22	G. Malatesta	Sugar beet weevil: updating the knowledge of a pest affecting from now on every kind of beetroot production in France
3.23	M. Mayrhofer, S. Geyer, H. Eigner	Sugar beet weevil (*Asproparthenis punctiventris*) – a pest in sugar beet in semi-arid regions

Bacterial diseases

3.24	R. Pfitzer, M. Varrelmann, M. Rostás	Establishment of a permanent rearing and nymphal instar characterisation of *Pentastiridius leporinus*
3.25	M. Schumann *et al.*	Handling the planthopper *Pentastiridius leporinus* for laboratory trials
3.26	Y. Galein *et al.*	SBR LAMP: A rapid portable field SBR detection tool
3.27	Ž. Ćurčić *et al.*	Rubbery taproot disease (RTD) severe threat for sugar beet production in Central Europe

Fungal leaf diseases

3.28	U. Akesson	Attacks from *Aphanomyces cochlioides* could be unpredictable, but sometimes also possible to mitigate
3.29	V. Rivera-Varas	Factors affecting *Cercospora beticola* spore germination
3.30	G. Secor *et al.*	Early detection of *Cercospora beticola* spore production and infection in commercial sugar beet fields
3.31	S. Torfs, K. Antoons	Monitoring *Cercospora beticola* resistance in Belgium
3.32	F. Kempl, J. Rieppl, S. Geyer	Control of resistant Cercospora leaf spot by fungicides and tolerant varieties
3.33	L. Blouquy *et al.*	Evidence of multiple fungicide resistance in French populations of *Cercospora beticola*: from population status to resistance mechanism
3.34	M. Khan	Agony of a Cercospora epidemic to the joy of successful management

3.35	C. Kenter *et al.*	New resistant varieties can enhance integrated management of Cercospora leaf spot in sugar beet
3.36	G. Campagna *et al.*	Research of new methods of varietal characterization of sugar beet grown in the Po Valley
3.37	T.M. Heick *et al.*	Cercospora leaf spot – an underrated threat for Danish sugar production
3.38	M. El Jarroudi *et al.*	A prediction model of *Cercospora beticola* disease of sugar beet in Belgium
3.39	N.A. Wyatt *et al.*	A pangenomic assessment of a *Cercospora beticola* global population
3.40	A. Buckley	Investigating the physiological effects of fungicides on sugar beet growth and yield

Disease monitoring and management

3.41	B. Müller *et al.*	BeetControl – a smartphone app to recognize the infestation intensity and strength as well as forecast of the diseases based on artificial intelligence
3.42	F. Joudelat	CERCOCAP: an innovative Cercospora management system under development
3.43	C. Gouwie, F. Joudelat	Benefit of sugar beet epidemiosurveillance data
3.44	C. Gouwie	French pests and diseases monitoring device for sugar beet protection
3.45	B. Hanse, A. Buijze	Use of sensor data for decision support in foliar disease management
3.46	F.R. Ispizua Yamati *et al.*	Multisensory model for early detection of Cercospora leaf spot in sugar beet based on UAV multispectral imaging, epidemiological and micrometeorological data
3.47	F.R. Ispizua Yamati *et al.*	Automatic detection of rhizoctonia crown and root rot affected sugar beet plants from orthorectified UAV images
3.48	L.C. Barreto *et al.*	The use of near infrared spectrometry to detect rhizoctonia root rot in sugar beet in the field

Nematode control

3.49	N. Mwangi *et al.*	Potential of biofumigant cover crops (*Brassica* spp.) in suppression of stubby root nematodes (*Trichodorus* and *Paratrichodorus* spp.), associated with Docking disorder in sugar beet (*Beta vulgaris*)
3.50	A. Olsson Nyström, L. Persson	Control of free living nematodes using inter crops
3.51	A.J.D. Wright, M. Stevens, M.A. Back, D.L. Sparkes	Rooting around the problem – putting BCN tolerance in the frame
3.52	L. Frijters	The effect of crop rotation on infestation levels of *Heterodera schachtii* and the advice to use partial resistant sugar beet varieties

4 Beet physiology

Beet quality

4.1	E. Hilscher, H. Narten, I. Bejenke	KWS Beetrometer® – beet quality analysis for the 21st century
4.2	E. Hilscher, H. Narten, I. Bejenke	Sugar beet quality analysis – going beyond sugar

Storage and storability

4.3	G. Kleuker, C.M. Hoffmann	Changes in sugar beet tissue strength during storage
4.4	H. Larsson Jönsson, W. English	Late season water availability and sugar beet mechanical properties
4.5	P.Z. Chunga, E.D. Dickin, J.M. Monaghan	Effects of sugar beet root morphology and genotype on root tip damage and tissue integrity
4.6	A.-L. Gippert *et al.*	Molecular mechanisms underlying storability of sugar beet taproots revealed by metabolomics and complementary transcriptomics of contrasting genotypes
4.7	N. Nause, F.R. Ispizua Yamati, C. Hoffmann	Automatic cell counting and classification in sugar beet tissue using a microscope image clustering method
4.8	J. Ekelöf, W. English	Automated active ventilation of sugar beet clamps
4.9	W. English	Airflow through sugar beet clamps

5 Other topics

5.1	S. Kaffka *et al.*	New uses for sugar beets as dairy feed in California
5.2	A. Patry	Assessing sustainability in a quantitative way: the beet and cane sustainability