

# Title of Papers Presented at the 136th Meeting of The JAPANESE SOCIETY OF BREEDING

## Oral Presentations

**101** Development of co-dominant markers for identification of self-compatible buckwheat plants using next-generation sequencer

○Matsui, K. <sup>1</sup>, N. Mizuno <sup>2</sup>, M. Ueno <sup>2</sup>, Y. Yasui <sup>2</sup> (1.Inst. Crop. Sci., NARO, 2.Grad. Sch. Agr., Kyoto Univ.)

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**102** Genome analysis of heteromorphic self-incompatibility locus in buckwheat

○Ota, T. <sup>1</sup>, J. Aii <sup>2</sup>, M. Ueno <sup>3</sup>, R. Ohsawa <sup>4</sup>, H. Saito <sup>3,5</sup>, K. Shirasawa <sup>6</sup>, R. Takeshima <sup>7</sup>, T. Nakazaki <sup>3</sup>, K. Nishimura <sup>3</sup>, T. Hara <sup>4,8</sup>, H. Hirakawa <sup>6</sup>, J. Fawcett <sup>6,9</sup>, K. Matsui <sup>7</sup>, N. Mizuno <sup>3</sup>, Y. Yasui <sup>3</sup> (1.Sch. Adv. Sci., SOKENDAI, 2.Niigata Univ. Pharm. Appl. Life Sci., 3.Grad. Sch. Agri., Kyoto Univ., 4.Facul. Life Environ. Sci., Univ. Tsukuba, 5.JIRCAS, 6.Kazusa DNA Res. Inst., 7.Inst. Crop. Sci., NARO, 8.HARC, NARO, 9.RIKEN)

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**103** Genome sequence analysis of a radish cultivar 'Okute-Sakurajima'

○Shirasawa, K. <sup>1</sup>, H. Hirakawa <sup>1</sup>, N. Fukino <sup>2</sup>, H. Kitashiba <sup>3</sup>, M. Hisokawa <sup>4</sup>, S. Isobe <sup>1</sup> (1.Kazusa DNA Res. Inst., 2.NARO, 3.Grad. Sch. Agr. Sci., Tohoku Univ., 4.Kindai Univ.)

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**104** Revision of strawberry genome sequences and its application to QTL-Seq

Shirasawa, K. <sup>1</sup>, T. Wada <sup>2</sup>, C. Hirata <sup>2</sup>, S. Nagamatsu <sup>2</sup>, M. Mori <sup>2</sup>, Y. Tanaka <sup>2</sup>, E. Yamamoto <sup>1</sup>, H. Hirakawa <sup>1</sup>, ○S. Isobe <sup>1</sup> (1.Kazusa DNA Research Institute, 2.Fukuoka Agricultural and Forestry Research Center)

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**105** Endogenous virus sequences provide an evidence for chromosomal region-specific micro-evolution in *Oryza*-AA genome species

☆Saito, N. <sup>1</sup>, S. Chen <sup>1</sup>, K. Yamada <sup>1</sup>, Y. Koide <sup>1</sup>, I. Choi <sup>2</sup>, Y. Kishima <sup>1</sup> (1.Grad. Sch. Agr., Univ. Hokkaido, 2.International Rice Research Institute)

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**106** Identifying non-shattering factor in azuki bean and pod tenderness factor in yard-long bean

Takahashi, Y. <sup>1</sup>, K. Alisa <sup>2</sup>, Y. Kobayashi <sup>3</sup>, M. Kumagai <sup>1</sup>, H. Sakai <sup>1</sup>, K. Satou <sup>4</sup>, T. Hirano <sup>4</sup>, T. Isemura <sup>1</sup>, H. Saito <sup>5</sup>, A. Kaga <sup>1</sup>, S. Prakrit <sup>6</sup>, N. Tomooka <sup>1</sup>, ○K. Naito <sup>1</sup> (1.NARO, 2.Silpakorn Univ., 3.Drad. Sch. Frontier Sci. Univ. Tokyo, 4.OIAS, 5.JIRCAS, 6.Kasetsart Univ.)

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**107** Soybean isoflavone contents are tissue dependent, and a major QTL, qMGly\_11, controls divergence of glycitein and daidzein contents

Yamada, R. <sup>1</sup>, A. Kaga <sup>2</sup>, T. Anai <sup>1</sup>, ○S. Watanabe <sup>1</sup> (1.Fac. Agri. Univ. Saga, 2.Inst. Crop. Sci., NARO)

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**108** Genetic analysis of root color and carotenoid content in carrot

○Shibaya, T. <sup>1</sup>, C. Kuroda <sup>1</sup>, H. Tsuruoka <sup>2</sup>, C. Minami <sup>2</sup>, S. Nakayama <sup>2</sup>, T. Fujii <sup>1</sup>, S. Isobe <sup>2</sup> (1.Fujii Seed Co., Ltd., 2.Kazusa DNA Research Institute)

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**109** Fine mapping of a QTL for panicle exertion length detected between Koshihikari and Nipponbare

☆Ishikawa, H. <sup>1</sup>, M. Akasaka <sup>2</sup>, K. Hori <sup>2</sup>, T. Kuboyama <sup>1</sup>, J. Tanaka <sup>2,3</sup> (1.Grad. Sch. Agr., Univ. Ibaraki, 2.Inst. Crop. Sci., NARO, 3.Grad. Sch. of Lif. Env. Sci., Univ. Tsukuba)

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**110** Genome wide association study using expanded core collection

☆Tanaka, N. <sup>1</sup>, M. Shenton <sup>1</sup>, Y. Kawahara <sup>1,2</sup>, K. Sugimoto <sup>1</sup>, M. Ishimoto <sup>1</sup>, K. Ebana <sup>3</sup> (1.Institute of Crop Science, National Agriculture and Food Research Organization, 2.Advance analysis center, National Agriculture and Food Research Organization, 3.Genetic Resources Center, National Agriculture and Food Research Organization)

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**111** High-density genetic map construction using GRAS-Di in recombinant inbred lines of *Aegilops tauschii*

☆Miki, Y. <sup>1</sup>, H. Enoki <sup>2</sup>, K. Suzuki <sup>2</sup>, M. Inamori <sup>2</sup>, K. Yoshida <sup>1</sup>, S. Takumi <sup>1</sup> (1.Grad. Sch. Agr. Sci., Kobe U., 2.TOYOTA MOTOR CORPORATION)

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**112** Genome-wide association study of wild diploid wheat *Aegilops umbellulata* using RNA-seq-based genotyping data

☆Kasazumi, N., M. Okada, K. Yoshida, S. Takumi (Grad. Sch. Agr. Sci., Kobe U.)

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**113** Marker-trait associations in cereals and legumes collections harvested in Kazakhstan

○Turuspekov, Y. <sup>1</sup>, B. Doszhanova <sup>1</sup>, A. Zatybekov <sup>1</sup>, S. Didorenko <sup>2</sup>, A. Rsaliev <sup>3</sup>, A. Amalova <sup>1</sup>, S. Abugalieva <sup>1</sup> (1.Institute of Plant Biology and Biotechnology, Almaty 050040, Kazakhstan, 2.Kazakh Research Institute of Agriculture, Almaty region 040909, Kazakhstan, 3.Institute of Biological Safety, Dzhambul region, 080409, Kazakhstan)

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**114** Polyploidy GWAS for flower sexuality biases in hexaploid persimmon

☆Masuda, K. <sup>1</sup>, K. Shirasawa <sup>2</sup>, E. Yamamoto <sup>2</sup>, T. Kawai <sup>1</sup>, N. Onoue <sup>3</sup>, A. Kono <sup>3</sup>, K. Ushizima <sup>1</sup>, Y. Kubo <sup>1</sup>, R. Tao <sup>4</sup>, T. Akagi <sup>1</sup> (1.Grad. Sch. Environ. Life Sci., Univ. Okayama, 2.Kazusa DNA Res. Inst., 3.Inst. Fruit Tree Tea Sci., NARO, 4.Grad. Sch. Agric., Univ. Kyoto)

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**115** Genome-wide association studies with phenotypic data for pearl millet and chickpea lines in ICRISAT

○Tsugama, D. <sup>1</sup>, S. Gupta <sup>2</sup>, R. Varshney <sup>2</sup>, T. Takano <sup>1</sup> (1.ANESC, Univ. Tokyo, 2.ICRISAT)

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**116** Development of near-isogenic lines towards the increment of the number of spikelets in malting barley

○Saisho, D. <sup>1</sup>, T. Todoroki <sup>2</sup>, Y. Haraguchi <sup>2</sup>, H. Kai <sup>2</sup>, H. Handa <sup>3</sup>, K. Sato <sup>1</sup> (1.IPSR, Okayama Univ., 2.Fukuoka Agric. Forest. Res. Cent., 3.Grad. Sch. Life Env. Sci., Kyoto Pref. Univ.)

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**117** Genetic relationship among diploid wheat relatives based on genome-wide polymorphisms derived from RNA-seq data

☆Tanaka, S. <sup>1</sup>, K. Yoshida <sup>1</sup>, K. Sato <sup>2</sup>, S. Takumi <sup>1</sup> (1.Grad. Sch. Agr. Sci., Kobe U., 2.IPSR, Okayama U.)

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**118** Phylogenetic analysis of the accessions of wheat wild relatives *Aegilops sharonensis* and *Ae. longissima* by genome-wide SNPs

☆Yoshioka, M., S. Nasuda (Grad. Sch. Agr., Univ. Kyoto)

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**119** Breeding of high-yielding F1 hybrid near-isogenic lines with different ripening traits and taste quality for adaptation to multiple needs

○Jinushi, K. (Research Institute of Rice Production & Technology Co., Ltd.)

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**120** Genetic analysis of *S18* for F<sub>1</sub> pollen sterility in interspecific hybrid between *Oryza sativa* L. and *O. glaberrima* Steud.

☆Fujiwara, W., J. Inoue, H. Yasui, Y. Yamagata (Fac. Agr., Kyushu Univ.)

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**121** Genetic diversity of tea germplasm and Japanese landraces by RAD-seq

☆Yamashita, H.<sup>1,2</sup>, H. Katai<sup>3</sup>, L. Kawaguchi<sup>4</sup>, A. Nagano<sup>5</sup>, A. Morita<sup>2</sup>, T. Ikka<sup>2</sup>  
(1.Uni. Agr., Gifu Univ., 2.Fac. Agr., Shizuoka Univ., 3.Tea Res. Cent., Shizuoka Pref.,  
4.Res. Adm. Off., Kyoto Univ., 5.Fac. Agr., Ryukoku Univ.)

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**201** *Suporobolus virginicus* SvHKT1;1 enhance salt tolerance in transgenic *Arabidopsis* by reducing Na<sup>+</sup> transport from roots to shoots

○Tada, Y.<sup>1</sup>, Y. Kawakami<sup>2</sup> (1.Sch. of Biosci. and Biotechnol., Tokyo Univ. of Technol.,  
2.Grad. Sch. of Bionics, Tokyo Univ. of Technol.)

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**202** Plant mitochondrial genome editing using mitoTALEN : Analysis of the gene redundancy between *ATP6-1* and *ATP6-2* in *Arabidopsis thaliana* (Columbia)

☆Tsuruta, Y., H. Sugaya, S. Yanase, Y. Watari, N. Tsutsumi, S. Arimura (Grad. Sch. Agri. Life Sci., Univ. Tokyo)

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**203** Knock out of cytoplasmic male sterility associated gene, *orf352*, using mitochondrial-targeted TALEN

☆Omukai, S.<sup>1</sup>, K. Toriyama<sup>1</sup>, S. Arimura<sup>2</sup>, T. Kazama<sup>1</sup> (1.Grad. Sch. Agri. Sci., Tohoku Univ., 2.Grad. Sch. Agri. Life Sci., Univ. Tokyo)

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**204** Establishment of simplified DNA extraction method and search for pH-regulated genes in *Doritis pulcherrima* alba

○Watanabe, M., Y. Takahara (Nagaoka University of Technology Bio-engineering)

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**205** Earliness effect of PCL1 is independent of Ppd-1, and affected by genetic background

☆Luo, G.<sup>1</sup>, O. Imoh<sup>1</sup>, K. Takata<sup>2</sup>, H. Nishida<sup>1</sup>, K. Kato<sup>1</sup> (1.Okayama University Graduate School of Environment and Life Sciences, 2.WARC/NARO)

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**206** QTL controlling bolting tolerance of sugar beet

○Kuroda, Y., H. Matsuhira, K. Okazaki (HARC)

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**207** Three-dimensional imaging of the shoot apical meristem in barley using tissue clearing

☆Kuge, S., J. Ito, Y. Nomura, H. Tsuji (Kihara Institute for Biological Research, Yokohama City Univ.)

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**208** Mechanism of trichome repression in soybean

○Yoshikawa, T. <sup>1</sup>, M. Monfort <sup>1,2</sup>, E. Ogiso-Tanaka <sup>3</sup>, T. Ishimaki <sup>4</sup>, E. Arai <sup>4</sup>, M. Teraishi <sup>1</sup>, M. Ishimoto <sup>3</sup>, Y. Okumoto <sup>1</sup> (1.Grad. Sch. Agri. Kyoto Univ., 2.Montpellier SupAgro, 3.NARO/NICS, 4.Sch. Agri. Kibi Int. Univ.)

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**209** Genetic analysis of heading synchrony and its environmental response in Hokkaido rice varieties

☆Sakaguchi, S., Y. Ota, T. Uchiyama, Y. Koide, I. Takamura, Y. Kishima (Grad. Sch. Agr., Univ. Hokkaido)

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**210** Identification of early flowering QTLs in a durum wheat variety (*Triticum turgidum* L. ssp. *durum*) using GBS with subgenome classification approach

☆Hirao, T. <sup>1</sup>, K. Nishimura <sup>1</sup>, A. Nagano <sup>2</sup>, R. Takisawa <sup>1</sup>, E. Maai <sup>1</sup>, R. Nakano <sup>1</sup>, T. Nakazaki <sup>1</sup> (1.Grad. Sch. Agr., Kyoto Univ., 2.Fac. Agr., Ryukoku Univ.)

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**211** Functions of *FT* orthologs in pollen germination on stigma in soybean

☆Hirata, M. <sup>1</sup>, K. Harigai <sup>1</sup>, R. Takeshima <sup>2</sup>, H. Matsuura <sup>1</sup>, K. Fujino <sup>1</sup>, M. Xu <sup>1</sup>, T. Yamada <sup>1</sup>, J. Abe <sup>1</sup> (1.Grad. Sch. Agr., Univ. Hokkaido, 2.Inst. Crop. Sci., NARO)

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**212** Analysis for a responsible gene of a novel mutant for thermal sensitivity in soybean

☆Zhang, J. <sup>1</sup>, S. Kusumoto <sup>1</sup>, M. Xu <sup>1</sup>, S. Watanabe <sup>2</sup>, T. Yamada <sup>1</sup>, Y. Hase <sup>3</sup>, A. Kanazawa <sup>1</sup>, T. Sayama <sup>4</sup>, M. Ishimoto <sup>5</sup>, B. Liu <sup>6</sup>, J. Abe <sup>1</sup> (1.Grad. Sch. Agr., Univ. Hokkaido, 2.Grad. Sch. Agr., Univ. Saga, 3.Takasaki Adv. Radiat. Res. Inst., QuBS, QST, 4.WARC/NARO, 5.Inst. Crop. Sci., NARO, 6.Grad. Sch. Sci., Univ. Guangzhou)

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**213** Effect of chilling temperatures on the expression of *FT* orthologs and the floral induction in soybean

☆Kusumoto, S., M. Xu, A. Kanazawa, T. Yamada, J. Abe (Grad. Sch. Agric., Hokkaido U.)

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**214** The expression ratio of FLC paralogs in Brassica

Nishida, N. <sup>1</sup>, A. Akter <sup>1</sup>, E. Itabashi <sup>2</sup>, N. Miyaji <sup>1</sup>, H. Mehraj <sup>1</sup>, T. Kakizaki <sup>2</sup>, K. Okazaki <sup>3</sup>, ○R. Fujimoto <sup>1</sup> (1.Grad. Sch. Agric. Sci., Kobe Univ., 2.Inst. Veg. Floric. Sci., NARO, 3.Grad. Sch. Sci. Tech., Niigata Univ.)

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**215** Studies on tillering behavior for breeding in welsh onion -I- Classification of tillering cultivars based on their morphological characteristics

☆Ogasawara, K., S. Niikura (Tohoku Seed Co., Ltd)

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**216** Identification of responsible gene of a rice gene that regulates leaf morphology depending on growth stages

○Suzuki, Y. <sup>1</sup>, H. Numa <sup>1</sup>, K. Shirasawa <sup>1,2</sup>, Y. Taniguchi <sup>1</sup>, H. Matsumoto <sup>3</sup>, Y. Yasui <sup>3</sup>, T. Ishikawa <sup>1</sup>, H. Hirano <sup>3</sup>, J. Tanaka <sup>1</sup> (1.NARO, 2.Kazusa DNA Res Inst., 3.Grad. Sch. Sci., Univ. Tokyo)

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**217** Developmental genetic study of a rice gene that regulates leaf morphology depending on growth stages

☆Matsumoto, H. <sup>1</sup>, Y. Yasui <sup>1</sup>, W. Tanaka <sup>1</sup>, Y. Ohmori <sup>2</sup>, T. Ishikawa <sup>3</sup>, H. Numa <sup>3</sup>, K. Shirasawa <sup>3,4</sup>, Y. Taniguchi <sup>3</sup>, J. Tanaka <sup>3</sup>, Y. Suzuki <sup>3</sup>, H. Hirano <sup>1</sup> (1.Grad. Sch. Sci., Univ. Tokyo, 2.Grad. Sch. Agric. Life Sci., Univ. Tokyo, 3.NARO, 4.Present affiliation: Kazusa DNA Res Inst.)

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**218** Analysis of genes which show characteristic expression during rice leaf development

☆Miya, M. <sup>1</sup>, T. Yoshikawa <sup>2</sup>, Y. Sato <sup>3</sup>, Y. Nagamura <sup>3</sup>, J. Ito <sup>1</sup> (1.Grad. Sch. Agr. & Life Sci., Univ. Tokyo, 2.Grad. Sch. Agr., Kyoto Univ., 3.Inst. Crop. Sci., NARO)

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**219** Function of WOX and KNOX genes in axillary bud formation in rice

☆Tanaka, W. <sup>1</sup>, K. Tsuda <sup>2,3</sup>, H. Hirano <sup>1</sup> (1.Grad. Sch. Sci., Univ. Tokyo, 2.NIG, 3.Sch. Life Sci., Grad. Univ. Adv. Stud. (SOKENDAI))

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**220** The rice *tillers absent1* mutant shows pleiotropic abnormalities in spikelet development

☆Omori, S. <sup>1,2</sup>, N. Kawakami <sup>2</sup>, H. Hirano <sup>1</sup>, W. Tanaka <sup>1</sup> (1.Grad. Sch. Sci., Univ. Tokyo, 2.Grad. Sch. Agric., Univ. Meiji)

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**221** Analysis of a rice *tiller elongation defective1* mutant that has a defect in tiller growth

☆Namiki, M., H. Hirano, W. Tanaka (Grad. Sch. Sci., Univ. Tokyo)

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**222** RNA-seq analysis of near-isogenic lines of two QTLs for exogenous ABA sensitivity in common wheat

☆Okada, M. <sup>1</sup>, H. Matsunaka <sup>2</sup>, K. Nakamura <sup>2</sup>, F. Kobayashi <sup>3</sup>, K. Yoshida <sup>1</sup>, S. Takumi <sup>1</sup> (1.Grad. Sch. Agr. Sci., Kobe U., 2.KARC, NARO, 3.NICS, NARO)

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**301** A spike counting system through deep learning using images of wheat and barley yield trial plots

○Ishikawa, G. <sup>1</sup>, W. Guo <sup>2</sup>, H. Tsunematsu <sup>1</sup>, T. Yanagisawa <sup>1</sup>, M. Fujita <sup>1</sup>, T. Yamada <sup>1</sup>, J. Yonemaru <sup>1</sup> (1.Inst. Crop Sci., NARO, 2.Grad. Sch. Agr. Life Sci., Univ. Tokyo)

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**302** Development of deep learning based wheat and barley spike detecting and counting algorithm

☆Guo, W. <sup>1</sup>, G. Ishikawa <sup>2</sup>, H. Tsunematsu <sup>2</sup>, T. Yanagisawa <sup>2</sup>, M. Fujita <sup>2</sup>, T. Yamada <sup>2</sup>, J. Yonemaru <sup>2</sup> (1.Grad. Sch. Agr. Life Sci., Univ. Tokyo, 2.Inst. Crop Sci., NARO)

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**303** Fine mapping of meteorological factors interacting with genotypes using historical data of soybean breeding

○Onogi, A. <sup>1,2</sup>, D. Sekine <sup>3</sup>, A. Kaga <sup>1</sup>, S. Ninomiya <sup>4</sup> (1.ICS, NARO, 2.RCAIT, NARO, 3.IVFS, NARO, 4.Grad. Sch. Agr. Life Sci., Univ. Tokyo)

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**304** Flour milling characteristics can be evaluated by the median particle size of wheat flour

○Nakamura, H. (Inst. Crop. Sci., NARO)

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**305** Using genome editing in Broccoli ( *Brassica oleracea* var. *italica*) to produce the self-compatible line

○Okuzaki, A. <sup>1</sup>, M. Oshima <sup>2,3</sup>, J. Imamura <sup>1</sup>, C. Koizuka <sup>1</sup>, M. Inaba <sup>1</sup>, A. Mamiya <sup>1</sup>, R. Onuki <sup>4</sup>, T. Itoh <sup>4</sup>, M. Yamazaki <sup>2</sup>, Y. Tabei <sup>2,5</sup>, N. Koizuka <sup>1</sup> (1.Fac. Agric., Univ. Tamagawa, 2.NIAS, 3.Fac. Life Env. Sci., Univ. Tsukuba, 4.NAAC, 5.NARO)

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**306** Effect of EGGS method on strawberry fruit firmness for improvement of transportability

☆Nagamatsu, S. <sup>1</sup>, M. Tsubone <sup>1</sup>, K. Oku <sup>1</sup>, S. Nagano <sup>2,4</sup>, A. Nakaya <sup>3</sup>, S. Isobe <sup>2</sup>, M. Mori <sup>1</sup>, C. Hirata <sup>1</sup>, Y. Saiki <sup>1</sup>, Y. Tanaka <sup>1</sup>, T. Sueyoshi <sup>1</sup>, K. Hirashima <sup>1</sup>, K. Shimomura <sup>1</sup>, T. Wada <sup>1</sup> (1.Fukuoka Agric. Forest. Res. Cent., 2.Kazusa DNA Res. Inst., 3.Grad. Sch. Med., Univ. Osaka, 4.Forest Tree Breed. Cent., FFPRI)

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**307** Canceled

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**308** Survey by questionnaire about genome editing technology from general public and industry groups

○Shimura, S. <sup>1,2</sup>, M. Yamazaki <sup>2</sup>, T. Ishikawa <sup>1</sup>, M. Shikata <sup>1</sup>, S. Sembon <sup>1,2</sup>, T. Iizuka <sup>2</sup>, M. Ohshima <sup>2</sup>, Y. Sasakawa <sup>2</sup>, M. Kasai <sup>1</sup>, Y. Tabei <sup>1</sup> (1.NARO, 2.NIAS)

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**309** Prediction of trait segregation in F<sub>1</sub> population based on genomic prediction for figs

☆Yabe, S. <sup>1</sup>, K. Shirasawa <sup>2</sup>, H. Ikegami <sup>3</sup>, S. Himeno <sup>3</sup>, H. Nogata <sup>3</sup>, K. Tashiro <sup>4</sup>, T. Hayashi <sup>1</sup> (1.Inst. Crop. Sci., NARO, 2.Kazusa DNA Res. Inst., 3.Fukuoka Agriculture and Forestry Res. Ctr. Buzen Branch, 4.Faculty Agr., Kyushu Univ.)

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**310** Mutant cultivars developed and released in Japan by 2019

○Nakagawa, H. (Hamamatsu Photonics K.K.)

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**311** Canceled

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**312** Breeding of Summer-Autumn-flowering Small-flowered Spray-type Chrysanthemums cultivar 'Nagasaki SWC1' by heavy-ion beam irradiation

○Hisamura, A. <sup>1</sup>, J. Morooka <sup>2</sup>, T. Abe <sup>3</sup>, Y. Hayashi <sup>3</sup>, T. Hirano <sup>4</sup> (1.Nagasaki Agric. & For. Tech. Dev. Cent., 2.Nagasaki Pref. Shimabara Dev. Bur., 3.RIKEN, Nishina Cent., 4.Fac. Agr., Miyazaki U.)

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**313** Development of a hard bread wheat line derived from a recommended wheat variety of Fukui Prefecture, “Fukui-kendai 3 (Fukukomugi)”

○Murai, K., N. Kamikyo, M. Seki (Fac. Biosci. Biotech., Fukui Pref. Univ.)

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**314** Graphical genotyping of selected wheat lines produced through crossing with early heading synthetic hexaploid wheat

☆Komura, S. <sup>1</sup>, K. Yoshida <sup>1</sup>, S. Mitta <sup>2</sup>, T. Ikeda <sup>3</sup>, K. Sato <sup>4</sup>, K. Murai <sup>2</sup>, S. Takumi <sup>1</sup>  
(1.Grad. Sch. Agr. Sci., Kobe U., 2.Fac. Biosci. Biotech., Fukui Pref. Univ., 3.WARC, NARO, 4.IPSR, Okayama U.)

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**315** Allelic Variation of *Psy1* Genes for Yellow Pigment Content in Tetraploid Wheats

○Kato, K. <sup>1</sup>, M. Yanaka <sup>1,2</sup>, Y. Ban <sup>1</sup>, H. Okusu <sup>3</sup>, T. Tanaka <sup>3</sup>, K. Takata <sup>1</sup>  
(1.WARC/NARO, 2.KARC/NARO, 3.Nippon Flour Mills Co., Ltd)

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**316** Estimation of novel loci involved in non-seed-shattering behaviour of Indica rice cultivar, ‘IR36’

☆Sugiyama, S. <sup>1</sup>, Y. Tsujimura <sup>1</sup>, C. Inoue <sup>1</sup>, T. Htun <sup>1,2</sup>, K. Numaguchi <sup>1</sup>, T. Ishii <sup>1</sup>, R. Ishikawa <sup>1</sup> (1.Graduate School of Agricultural Science, Kobe University, 2.Yezin Agricultural University)

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**317** Canceled

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**318** Diversity analysis of cucumber genetic resources based on GBS-SNPs data and development of core collection

☆Shigita, G. <sup>1</sup>, T. Phuong Dung <sup>1</sup>, M. Pervin <sup>1</sup>, H. Nishida <sup>1</sup>, Y. Monden <sup>1</sup>, M. Sugiyama <sup>2</sup>, K. Tanaka <sup>3</sup>, K. Kato <sup>1</sup> (1.Grad. Sch. Environ. Life Sci., Okayama U., 2.NIVFS, 3.Fac. Agr. Life Sci., Hirosaki U.)

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**319** Distribution of insertion polymorphisms in the first intron of *RsFLC1* (*Raphanus sativus* flowering locus C1) and *RsFLC2* in radish varieties and wild species

○Kitashiba, H. <sup>1</sup>, M. Kawabata <sup>1</sup>, H. Tasaka <sup>1</sup>, K. Shirasawa <sup>2</sup>, H. Hirakawa <sup>2</sup>, N. Fukino <sup>3</sup>  
(1.Grad. Sch. Agri. Sci., Tohoku Univ., 2.Kazusa DNA Res. Inst., 3.Inst. Veg. Floric. Sci., NARO)

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**320** Analysis of S-haplotypes in radish varieties of ‘Nerima’ group

☆Akanuma, T. <sup>1</sup>, M. Yamamoto <sup>1</sup>, N. Fukino <sup>2</sup>, H. Kitashiba <sup>1</sup> (1.Grad. Sch. Agri. Sci., Tohoku Univ., 2.Inst. Veg. Floric. Sci., NARO)

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**321** Karyotyping of the 10+ Wheat Genome Project accessions by ND-FISH analysis

☆Murata, K. <sup>1</sup>, Y. Nabeka <sup>2</sup>, S. Nasuda <sup>1</sup> (1.Grad. Sch. Agri., Univ. Kyoto, 2.Fac. Agri., Univ. Kyoto)

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**322** Search for genetic polymorphism and gametophore differentiation relating genes in building greening moss

☆Noguchi, A., Y. Takahara (Grad. Sch. Eng. Bioeng., Nagaoka University of Technology)

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**401** Key biosynthetic steps of triterpene glycosides unraveled by co-expression analysis in soybean

Panneerselvam, K. <sup>1</sup>, Y. Fujisawa <sup>1</sup>, S. Chung <sup>2</sup>, H. Son <sup>3</sup>, Y. Shimoda <sup>4</sup>, S. Hiraga <sup>1</sup>, A. Kaga <sup>1</sup>, T. Anai <sup>5</sup>, C. Tsukamoto <sup>3</sup>, H. Seki <sup>2</sup>, T. Muranaka <sup>2</sup>, ○M. Ishimoto <sup>1</sup> (1.NICS, NARO, 2.Graduate School of Engineering, Osaka University, 3.Graduate School of Agriculture, Iwate University, 4.NIAS, NARO, 5.Faculty of Agriculture, Saga University)

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**402** Varietal difference of interactions among starch synthase alleles in rice

☆Matsumoto, T., M. Teraishi, T. Yoshikawa, Y. Okumoto (Grad. Sch. Agri., Kyoto Univ.)

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**403** Effect of Gli-A2 alleles on the extensibility of flour dough in Japanese wheat cultivars

○Noma, S. <sup>1,2</sup>, K. Hayakawa <sup>3</sup>, C. Abe <sup>3</sup>, S. Suzuki <sup>1</sup>, K. Kawaura <sup>1</sup> (1.Kihara Inst., Univ. Yokohama City, 2.Nisshin Seifun Group, Inc., 3.Nisshin Flour Milling, Inc.)

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**404** Expression of  $\alpha$ -amylase gene family during storage in sweetpotato

☆Suematsu, K., M. Tanaka, R. Kurata (KARC, NARO)

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**405** Evaluation of antioxidant properties in cultivated and wild soybean seeds

☆Hayashi, Y. <sup>1</sup>, A. Osada <sup>1</sup>, H. Ichikawa <sup>2</sup>, T. Suzuki <sup>1</sup>, J. Abe <sup>1</sup>, T. Yamada <sup>1</sup> (1.Grad. Sch. Agr., Univ. Hokkaido, 2.Grad. Sch. Life and Medical Sciences., Univ. Doshisha)

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**406** Comparative analysis of RNA-seq library preparation methods for large scale transcriptome projects

☆Nishijima, R., T. Kawakatsu (NIAS)

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**407** Heat response of genome and transcriptional activation of repeat sequences in rice anthers

☆Kanaoka, Y. <sup>1</sup>, J. Kim <sup>2</sup>, S. Ishiguro <sup>1</sup>, S. Chen <sup>1</sup>, T. Uchiyama <sup>1</sup>, K. Yamamori <sup>1</sup>, Y. Koide <sup>1</sup>, Y. Kishima <sup>1</sup> (1.Grad. Sch. Agric., Hokkaido Univ., 2.Grad. Sch. Agric. Life Sci., Univ. Tokyo)

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**408** Rice variation data in RAP-DB

○Kawahara, Y. <sup>1,2</sup>, X. Wang <sup>1</sup>, T. Hirozane-Kishikawa <sup>2</sup>, R. Hirata <sup>3</sup>, T. Itoh <sup>2</sup> (1.Institute of Crop Science, NARO, 2.Advanced Analysis Center, NARO, 3.IMSBIO Co., Ltd.)

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**409** The web system PODC: Integrated analysis using an omics- and knowledge-based framework for exploitation of plant genetic resources

☆Yano, K., S. Koshimizu, S. Ohki, B. Kong, M. Saito, M. Kanno (Sch. Agri., Meiji Univ.)

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**410** EXTENSION FUNCTION of the plant genome portal site, PlantGARDEN and Current status of de novo plant genome sequencing

☆Harada, D. <sup>1</sup>, H. Ichihara <sup>2</sup>, A. Nakaya <sup>2</sup>, A. Ghelfi <sup>1</sup>, M. Yamada <sup>1</sup>, M. Kohara <sup>1</sup>, H. Hirakawa <sup>1</sup>, S. Tabata <sup>1</sup>, S. Isobe <sup>1</sup> (1.Kazusa DNA Research Institute, 2.Graduate School of Medicine Faculty of Medicine, Osaka University)

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**411** QTL analysis for high resistance to brown planthopper (BPH) in *indica* rice variety 'PTB33' by using BPH populations with different virulence

☆Tabata, S. <sup>1</sup>, Y. Yamagata <sup>1</sup>, D. Fujita <sup>2</sup>, S. Sanada <sup>3</sup>, M. Matsumura <sup>4</sup>, H. Yasui <sup>1</sup> (1.Fac. Agr., Kyushu Univ., 2.Fac. Agr., Saga Univ., 3.Kyushu Okinawa Agr. Res. Ctr., NARO, 4.NARO Headquarters)

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**412** Functional analysis of IDA peptide during lateral root emergence in rice

☆Atsumi, S. <sup>1</sup>, K. Shimizu <sup>1</sup>, H. Takahashi <sup>1</sup>, T. Suzuki <sup>2</sup>, S. Shimizu (Sato) <sup>2</sup>, Y. Sato <sup>2</sup>, M. Nakazono <sup>1</sup> (1.Grad. Sch. Bioagric. Sci., Nagoya Univ., 2.National Institute of Genetics)

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**413** Analysis of *Calcium-dependent Protein Kinase* ( *CDPK* ) genes that control aerenchyma formation in rice roots

☆Ishii, T. <sup>1</sup>, T. Yamauchi <sup>2</sup>, H. Takahashi <sup>1</sup>, M. Yoshioka <sup>1</sup>, H. Yoshioka <sup>1</sup>, M. Nomoto <sup>3</sup>, Y. Tada <sup>3</sup>, M. Nakazono <sup>1</sup> (1.Graduate School of Bioagricultural Sciences, Nagoya University, 2.Graduate School of Agricultural and Life Sciences, The University of Tokyo, 3.The Center for Gene Research, Nagoya University)

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**414** Searching for wild rice accessions that can form a constitutive barrier to radial oxygen loss

☆Ejiri, M., K. Shiono (Grad. Sch. Biosci. & Biotech., Fukui Pref. Univ.)

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**415** Rice blast resistance gene, *Pit-h* identified in "Hokkai PL9"

○Hayashi, N. <sup>1</sup>, U. Yamanouchi <sup>2</sup>, T. Ando <sup>2</sup>, S. Fukuoka <sup>2</sup>, A. Takahashi <sup>1</sup> (1.Institute of Agrobiological Sciences, NARO, 2.Institute of Crop Science, NARO)

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**416** Gene expression profiling in the formation of soybean secondary aerenchyma

☆Baba, Y. <sup>1</sup>, M. Nosaka-Takahashi <sup>2</sup>, K. Ta <sup>2</sup>, Y. Sato <sup>2</sup>, M. Nakazono <sup>1</sup>, H. Takahashi <sup>1</sup> (1.Grad. Sch. Bioagric. Sci., Nagoya Univ., 2.National Institute of Genetics)

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**417** Novel tolerance for seed cracking by low temperature in a soybean cultivar Toyomizuki

○Senda, M. <sup>1</sup>, M. Kawasaki <sup>1</sup>, Y. Sato <sup>1</sup>, N. Yamaguchi <sup>2</sup> (1.Fac. Agric. Life Sci., Univ. Hirosaki, 2.Tokachi Agr. Exp. Sta., HRO)

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**418** Mapping of QTLs associated with tolerance to seed cracking under chilling temperature using the 10k SNP panel in soybean

○Yamaguchi, N. <sup>1</sup>, A. Kaga <sup>2</sup>, D. Sekine <sup>3</sup>, F. Taguchi-Shiobara <sup>2</sup>, Y. Sato <sup>4</sup>, M. Senda <sup>4</sup>, M. Ishimoto <sup>2</sup> (1.Tokachi Agric. Exp. Sta., HRO, 2.Inst. Crop. Sci., NARO, 3.Inst. Veg. Floric. Sci., NARO, 4.Fac. Agric. Life Sci., Univ. Hirosaki)

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**419** Investigation of genes related to the root system traits contributing to drought tolerance in soybean

☆Naruse, T. <sup>1</sup>, H. Takahashi <sup>1</sup>, K. Hirano <sup>2</sup>, Y. Toda <sup>3</sup>, Y. Ohmori <sup>3</sup>, M. Tsuda <sup>4</sup>, A. Kaga <sup>5</sup>, H. Tsujimoto <sup>6</sup>, Y. Yamasaki <sup>6</sup>, Y. Sawada <sup>7</sup>, T. Fujiwara <sup>3</sup>, H. Iwata <sup>3</sup>, M. Matsuoka <sup>2</sup>, M. Nakazono <sup>1</sup> (1.Grad. Sch. Bioagri. Sci., Nagoya Univ., 2.Biosci. Biotec. Ctr., Nagoya Univ., 3.Grad. Sch. Agr. Life Sci., Univ. Tokyo, 4.T-PIRC, Univ. Tsukuba, 5.Inst. Crop. Sci., NARO, 6.Arid Land Res. Ctr., Tottori Univ., 7.RIKEN)

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**420** Analysis of nickel contents in soybean core collection

Itani, K. <sup>1</sup>, H. Ii <sup>2</sup>, ○R. Araki <sup>1</sup> (1.Dept. Edu., Wakayama Univ., 2.Dept. Syst. Engin., Wakayama Univ.)

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**421** Evaluation of wheat varieties (lines) for tan spot resistance

○Yanaka, M. <sup>1,3</sup>, N. Ishikawa <sup>1</sup>, R. Yoshioka <sup>2</sup>, K. Tomioka <sup>1</sup>, M. Murata <sup>2</sup>, K. Takata <sup>1</sup>, Y. Ban <sup>1</sup>, K. Kato <sup>1</sup> (1.WARC/NARO, 2.Yamaguchi Agri. & For. Gen. Tech. Ctr., 3.KARC/NARO)

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**422** Water-saving drought tolerant wheat alleviate seed quality decline caused by drought stress

☆Mega, R. <sup>1</sup>, T. Ishii <sup>1</sup>, F. Abe <sup>2</sup>, J. Kikuchi <sup>3</sup>, Y. Tsuboi <sup>3,4</sup>, H. Tanaka <sup>4</sup>, M. Okamoto <sup>5</sup>, H. Tsujimoto <sup>1</sup> (1.ALRC, Tottori Univ., 2.Inst. Crop. Sci., NARO, 3.CSRS, RIKEN, 4.Grad. Sch. Agriculture, Tottori Univ., 5.Biosci. Edu. Res. Center, Utsunomiya Univ.)

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**501** Analysis of candidate genes responsible for male sterility obtained from a rice cultivar Lebed backcrossed with Taichung 65

☆Fujita, Y., T. Kazama, K. Toriyama (Grad. Sch. Agri. Sci., Tohoku Univ.)

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**502** Variations of cytoplasmic male sterile genes in *Brassica maurorum* and *Moricandia arvensis*

○Yamagishi, H. <sup>1</sup>, A. Hashimoto <sup>2</sup>, A. Fukunaga <sup>1</sup>, T. Terachi <sup>1</sup> (1.Fac. Life Sci., Univ. Kyoto Sangyo, 2.Plant Organelle Genomics R. C., Univ. Kyoto Sangyo)

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**503** Anther culture facilitates genomic analysis of sterile male-gametes from interspecific hybrid rice under comparison with female-gametes

☆Kuniyoshi, D. <sup>1</sup>, Y. Yamagata <sup>2</sup>, Y. Shimazaki <sup>1</sup>, Y. Kanaoka <sup>1</sup>, Y. Koide <sup>1</sup>, H. Yasui <sup>2</sup>, Y. Kishima <sup>1</sup> (1.Graduate School of Agriculture, Hokkaido University, 2.Faculty of Agriculture, Kyushu University)

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**504** Detection of QTLs for stigma exertion with high dominant effects to promote outcrossing of transgenic male-sterile rice

Bakti, C. <sup>1,2</sup>, H. Ishikawa <sup>3</sup>, ○J. Tanaka <sup>1,4</sup> (1.Grad. Sch. of Lif. Env. Sci., Univ. Tsukuba, 2.Universitas Padjadjaran, 3.Grad. Sch. of Agr., Ibaraki Univ., 4.Inst. Crop. Sci., NARO)

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**505** RNA-seq analysis of germless grains crossing tetraploid wheat with wild tetraploid wheat relative *Aegilops cylindrica*

☆Takamatsu, A. <sup>1</sup>, K. Yoshida <sup>1</sup>, K. Sato <sup>2</sup>, T. Ikeda <sup>3</sup>, S. Takumi <sup>1</sup> (1.Grad. Sch. Agr. Sci., Kobe U., 2.IPSR, Okayama U., 3.WARC, NARO)

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**506** Genetic analysis of hybrid dwarf observed in synthetic hexaploid wheat lines crossed between tetraploid and wild einkorn wheat

☆Michikawa, A. <sup>1</sup>, K. Yoshida <sup>1</sup>, K. Sato <sup>2</sup>, S. Takumi <sup>1</sup> (1.Grad. Sch. Agr. Sci., Kobe U., 2.IPSR, Okayama U.)

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**507** Excessive polyploidy in maternal parents and seed abortion cause ovary abscission in tobacco interspecific crosses

☆He, H., S. Yokoi, T. Tezuka (Grad. Sch. Life Envi. Sci., Osaka Pref. U.)

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**508** Imprintome analysis on hybrid endosperm in an interspecific cross

☆Tonosaki, K. <sup>1,5</sup>, T. Kawakatsu <sup>2</sup>, A. Ono <sup>1</sup>, H. Furuumi <sup>3</sup>, K. Nonomura <sup>4</sup>, L. Comai <sup>5</sup>, T. Kinoshita <sup>1</sup> (1.Kihara Inst. Biol. Res., Yokohama City Univ., 2.NIAS, 3.Plant Genet., Natl. Inst. Genet., 4.Plant Cytogenetics., Natl. Inst. Genet., 5.UC Davis)

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**509** Induction of protocorm-like bodies and plant regeneration in *Phalaenopsis*

☆Suzuki, I., Y. Takahara (Grad. Sch. Eng., Nagaoka University of Technology)

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**510** Identification and characterization of S-locus independent self-incompatibility trait in *Brassica napus*

☆Okamoto, T. <sup>1</sup>, M. Okamoto <sup>1</sup>, E. Hikichi <sup>1</sup>, M. Ogawa <sup>1</sup>, Y. Takada <sup>1</sup>, G. Suzuki <sup>2</sup>, S. Takayama <sup>3</sup>, M. Watanabe <sup>1</sup> (1.Grad. Sch. Life Sci., Tohoku Univ., 2.Div. Natl. Sci. Osaka Kyoiku Univ., 3.Grad. Sch. Agric. Life Sci., Tokyo Univ.)

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**511** Canceled

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**512** Analysis of LjNLPs in nitrate-induced suppression mechanism of root nodule symbiosis

☆Nishida, H. <sup>1,2</sup>, M. Nomoto <sup>3</sup>, M. Ito <sup>2</sup>, T. Suzuki <sup>4</sup>, T. Kawakatsu <sup>1</sup>, R. Nishijima <sup>1</sup>, Y. Tada <sup>3</sup>, M. Kawaguchi <sup>5,6</sup>, T. Suzaki <sup>2</sup> (1.NARO, 2.Univ. Tsukuba, 3.Nagoya Univ., 4.Chubu Univ., 5.NIBB, 6.SOKENDAI)

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**513** Characterization of A New Gene Involved in Starch Metabolism of Rice

☆Nguyen Thi Phuong, T., T. Nakamura, T. Kumamaru, T. Kubo (Grad. Sch. Biores. and Bioenv. Sci., Kyushu Univ.)

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**514** Gene identification for free control of seed shattering in rice

☆Li, F. <sup>1</sup>, A. Komatsu <sup>2</sup>, M. Ohtake <sup>2</sup>, H. Eun <sup>3</sup>, A. Shimizu <sup>1</sup>, H. Kato <sup>4</sup> (1.Rad. Breed. Div., Inst. Crop Sci., NARO, 2.Inst. Agrobiol. Sci., NARO, 3.Inst. Agro-Environ. Sci., NARO, 4.Genet. Resour. Cent., NARO)

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**515** Functional analysis of cytoplasmic protein isoforms generated through phytochrome-mediated alternative promoter selection

☆Akune, S., T. Ushijima, T. Matsushita (Grad. Sch. Agric., Kyushu Univ.)

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**516** Pigmentation of anthers through overexpression of PHZ, an R2R3-MYB transcription factor that controls anthocyanin biosynthesis in petunia

☆Hara, R. <sup>1</sup>, M. Kimura <sup>2</sup>, A. Kanazawa <sup>2</sup> (1.Sch. Agr., Hokkaido Univ., 2.Res. Fac. Agr., Hokkaido Univ.)

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**517** Analysis of transposition of a novel transposable element *smPing* derived from *mPing*

○Tsukiyama, T. <sup>1</sup>, M. Tanaka <sup>2</sup>, H. Saito <sup>3</sup>, M. Teraishi <sup>2</sup>, Y. Okumoto <sup>2</sup>, T. Tanisaka <sup>4</sup> (1.Fac. Agr., Kindai Univ., 2.Grad. Sch. Agr., Kyoto Univ., 3.JIRCAS, 4.Dep. Agr. Reg. Reclam., Kibi Intl. Univ.)

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**518** Transcriptome analysis indicate mechanisms underlying the DDM1-mediated reduction of heterosis in *Arabidopsis thaliana*

☆Matsuo, K., N. Miyaji, T. Yasuda, R. Fujimoto (Grad. Sch. Agri. Sci., Univ. Kobe)

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**519** Analysis of cytosolic Fe-S cluster assembly pathway gene *OsATM3* in rice

☆Maruoka, H. <sup>1</sup>, A. Ono <sup>1</sup>, H. Nagata <sup>1</sup>, M. Endo <sup>2</sup>, M. Mikami <sup>2</sup>, T. Kinoshita <sup>1</sup> (1.KIBR, Univ. Yokohama City, 2.NARO)

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**520** RNA-guided endonuclease - *in situ* labelling (REGN-ISL) - a fast CRISPR/Cas9 based cytogenetic tool

☆Ishii, T. <sup>1</sup>, V. Schubert <sup>2</sup>, S. Khosravi <sup>2</sup>, S. Dreissig <sup>2</sup>, J. Metje-Sprink <sup>3</sup>, T. Sprink <sup>3</sup>, J. Fuchs <sup>2</sup>, A. Meister <sup>2</sup>, A. Houben <sup>2</sup> (1.Arid Land Research Center (ALRC), Tottori University, 2.Leibniz Institute of Plant Genetics and Crop Plant Research (IPK), 3.Julius Kuhn Institute (JKI) )

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**521** Fertility restoration of CW-type cytoplasmic male sterile rice by CRISPR/Cas9-mediated genome editing of nuclear-encoded *RETROGRADE-REGULATED MALE STERILITY*

☆Suketomo, C., T. Kazama, K. Toriyama (Grad. Sch. Agri. Sci., Tohoku Univ.)

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**522** Screening for transformation feasible accessions of wild *Oryza* species

○Sato, Y., S. Shimizu-Sato, K. Tsuda, M. Nosaka-Takahashi, T. Suzuki, S. Ono, N. Ta, K. Nonomura (National Institute of Genetics)

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**523** Mapping of the *TFA* loci responsible for transformation efficiency located on chromosome 2H in barley

○Hisano, H., H. Munemori, N. Yamaji, K. Sato (IPSR, Okayama Univ.)

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## Poster presentations

**P001** High-density crop hydroponics in a plant incubator for genome editing research

○Kuroda, M. (NARO Cent. Reg. Agric. Res. Cent.)

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**P002** The development of a simple method for assessing green stem disorder insensitivity of soybean by light shielding at flowering stage

○Ogata, D. <sup>1</sup>, R. Okuno <sup>1</sup>, O. Uchikawa <sup>2</sup> (1.Fukuoka Agric. Forest. Res. Cent., 2.Fukuoka Pref. Office)

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**P003** Selection efficiency of early-maturing and starch variation in endosperm mutations by chemical mutagen treatments

☆Nakaoka, F. <sup>1</sup>, A. Kobayashi <sup>1</sup>, Y. Morozumi <sup>1</sup>, K. Miura <sup>2</sup>, K. Sugimoto <sup>3</sup>, K. Tomita <sup>1</sup> (1.Fukui Agr. Exp., 2.Fukui Pref. Univ., 3.NICS)

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**P004** Estimation of effective epistasis number using bayesian modeling



☆Matsutani, T. <sup>1,2</sup>, M. Hamada <sup>1,2,3</sup> (1.Waseda University, 2.CBBD-OIL, 3.Nippon Medical School)

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**P005** Building new pipeline of MutMap and QTL-seq for high performance

○Sugihara, Y. <sup>1,2</sup>, H. Kikuchi <sup>1</sup>, H. Yaegashi <sup>1</sup>, S. Natsume <sup>1</sup>, H. Takagi <sup>3</sup>, R. Terauchi <sup>1,2</sup>, A. Abe <sup>1</sup> (1.Iwate Biotechnology Research Center, 2.Kyoto University, 3.Ishikawa Prefectural University)

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**P006** Establishment of highly efficient transformation method in *Raphanus sativus* L.

☆Muto, N., K. Komatsu, T. Matsumoto (Graduate School of Agriculture, Tokyo University of Agriculture)

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**P007** Characteristics of the early-heading “Haruhinode” produced by the recurrent backcrossing with early-type synthetic bread wheat

☆Mitta, S. <sup>1</sup>, S. Takumi <sup>2</sup>, K. Murai <sup>1</sup> (1.Fac. Biosci. Biotech., Fukui Pref. Univ., 2.Grad. Sch. Agr. Sci., Kobe Univ.)

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**P008** The identification of novel parthenocarpic mutants and their responsible genes in tomato (*Solanum lycopersium*)

○Ariizumi, T. <sup>1,2</sup>, Y. Lu <sup>1</sup>, Y. Shinozaki <sup>1,2</sup>, K. Shirasawa <sup>3</sup>, K. Ezura <sup>1</sup>, Y. Okabe <sup>4</sup>, H. Ezura <sup>1,2</sup> (1.Faculty Life Env. Sci., Univ. Tsukuba, 2.T-PIRC, Univ. Tsukuba, 3.Kazusa DNA Res. Inst., 4.Nippon Flour Mills Co., Ltd)

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**P009** Isogenic varieties of Koshihikari

○Tomita, M. (Res. Inst. Green Sci. & Tech., Shizuoka Univ.)

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**P010** Breeding of a new hulless barley cultivar ‘Fukumi Fiber’ with high beta-glucan content and yield

☆Sugita, T. <sup>1</sup>, T. Yoshioka <sup>1</sup>, A. Takahashi <sup>2</sup>, T. Yanagisawa <sup>3</sup>, T. Nagamine <sup>4</sup> (1.WARC/NARO, 2.Headquarter/NARO, 3.NICS/NARO, 4.CARC/NARO)

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**P011** Development of wheat with excellent resistance to pre-harvest sprouting: double mutant in *TaABA8'OH1-A* and *TaABA8'OH1-D*

○Matsunaka, H. <sup>1</sup>, M. Chono <sup>2</sup>, K. Nakamura <sup>1</sup> (1.KARC/NARO, 2.NICS/NARO)

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**P012** Development of LOX-less malting barley variety "Satsuiku 5" for Hokkaido

○Tokizono, Y. <sup>1</sup>, H. Jinno <sup>2</sup>, R. Fujita <sup>3</sup>, H. Ito <sup>4</sup>, R. Kanatani <sup>1</sup>, M. Nanamori <sup>1</sup>, N. Hirota <sup>1</sup>, H. Yoshida <sup>4</sup>, N. Suda <sup>1</sup> (1.Sapporo Breweries LTD., 2.Kitami Agricultural Experiment Station, Hokkaido Research Organization, 3.Kamikawa Agricultural Experiment Station, Hokkaido Research Organization, 4.Tokyo University of Agriculture)

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**P013** Breeding of "Kihadamochi", a high-yielding waxy barley cultivar with high  $\beta$  - glucan content

○Aoki, E. <sup>1</sup>, T. Yanagisawa <sup>1</sup>, M. Taira <sup>2</sup>, T. Yoshioka <sup>3</sup>, T. Tonooka <sup>1</sup> (1.NICS, 2.KARC/NARO, 3.WARC/NARO)

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**P014** Morpho-physiological traits of 343 accessions of wheat-related species *Aegilops tauschii* to explore novel variation for wheat breeding

☆Mahjoub, M. <sup>1</sup>, T. Chen <sup>2</sup>, Y. Gorafi <sup>3,4</sup>, Y. Yamasaki <sup>3</sup>, H. Iwata <sup>2</sup>, N. Kamal <sup>3,4</sup>, Y. Matsuoka <sup>5</sup>, H. Tsujimoto <sup>3</sup> (1.United Graduate School of Agricultural Sciences, Tottori University, Japan, 2.Graduate School of Agriculture and Life Sciences, The University of Tokyo, Japan, 3.Arid Land Research Center, Tottori University, Japan, 4.Agricultural Research Corporation, Sudan, 5.Fukui Prefectural University, Japan)

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**P015** Collaborative Exploration of Plant Genetic Resources in Chin State, Myanmar, February, 2019

○Nishikawa, T. <sup>1</sup>, M. Kawase <sup>2</sup>, M. Ohm <sup>3</sup> (1.Genetic Resources Center, NARO, 2.Fac. Agr., Tokyo Univ. Agric., 3.Dept. Agri. Res., Min. Agri. Livest. Irrig.)

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**P016** Genetic diversity and population structure of wild *Camellia* species distributing in Southern Vietnam inferred from SSR analysis

☆Nguyen, T. <sup>1</sup>, K. Fukuyama <sup>1</sup>, H. Katayama <sup>2</sup>, C. Uematsu <sup>1</sup> (1.Grad. Sch. Sci., Osaka City Univ., 2.Grad. Sch. Agr., Kobe Univ.)

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**P017** Preliminary analysis of organizational divergence in fertility restorer genes in garden beet

☆Kanomata, Y., J. Kashikura, K. Kitazaki, T. Kubo (Grad. Sch. Agr., Hokkaido Univ.)

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**P018** Genetic interaction for starch biosynthesis genes by using multiple mutant lines in rice

☆Nagamatsu, D. <sup>1</sup>, K. Iijima <sup>2</sup>, K. Shu <sup>2</sup>, T. Yamamoto <sup>1,2</sup>, Y. Kawagoe <sup>2</sup>, N. Fujita <sup>3</sup>, K. Hori <sup>1,2</sup> (1.Grad. Sch. Frontier Sci., Univ. Tokyo, 2.NARO, 3.Facult. Biores., Akita Pref. Univ.)

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**P019** Genetic relationship of fiber crop "Karamushi" between Yamagata prefecture and Aizu district, Fukushima prefecture revealed by using molecular markers

☆Nishida, Y. <sup>1</sup>, H. Kanke <sup>2</sup>, Y. Funaki <sup>3</sup>, H. Murakami <sup>4</sup>, R. Takahashi <sup>5</sup>, J. Matsuda <sup>6</sup>, T. Sasanuma <sup>1</sup> (1.Grad. Sch. Agr., Yamagata Univ., 2.Research Society of Aizugaku, 3.Karamushi Production Technology Conserving Association, 4.Aoso Revival Dreaming Corps, 5.Oe Town Revitalization Cooperation Corps, 6.Board of Education, Oe Town)

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**P020** Preliminary analysis of genetic diversity in sweetpotato germplasms using two different SNP-detection methods

○Tanaka, M. <sup>1</sup>, K. Suematsu <sup>1</sup>, S. Isobe <sup>2</sup>, K. Shirasawa <sup>2</sup>, Y. Kai <sup>1</sup> (1.Kyushu Okinawa Agr. Res. Cent., NARO, 2.Kazusa DNA Research Institute)

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**P021** Genetic diversity analysis of Japanese *Brassica napus* core collection based on chloroplast polymorphisms

☆Yanagi, E. <sup>1</sup>, M. Oshima <sup>2</sup>, R. Chen <sup>2</sup>, M. Tsuda <sup>2</sup>, R. Ohsawa <sup>2</sup> (1.Grad. Sch. Life & Env. Sci., Univ. Tsukuba, 2.Facul. Life & Env. Sci., Univ. Tsukuba)

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**P022** The Pi-cd locus originated from *Oryza meridionalis*

○Fujino, K. (NARO)

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**P023** Mapping of *qCSS3*, a locus involved in non-seed-shattering behaviour of Japonica rice cultivar, 'Nipponbare'

Tsujimura, Y. <sup>1</sup>, S. Sugiyama <sup>1</sup>, K. Otsuka <sup>1</sup>, T. Htun <sup>1,3</sup>, K. Numaguchi <sup>1</sup>, C. Castillo <sup>1,4</sup>, T. Akagi <sup>2</sup>, T. Ishii <sup>1</sup>, ○R. Ishikawa <sup>1</sup> (1.Graduate School of Agricultural Science, Kobe University, 2.Graduate School of Environmental and Life Science, Okayama University, 3.Yezin Agricultural University, 4.University College London)

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**P024** Segregating accumulation pattern and depth of anthocyanin pigments in F2 progeny obtained from the cross between turnip cultivars Akamaru and Kanazawa Aokabu

☆Segawa, T., N. Itoh, H. Kutuzawa, Y. Kawasaki, M. Takata, T. Nishiyama, S. Hongo, H. Takagi (Ishikawa Prefectural University)

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**P025** Development of DNA markers for pepper fruit color and its utilization for breeding  
3

○Sasanuma, T. <sup>1,2</sup>, S. Chiba <sup>1</sup>, K. Tsurumaki <sup>1,2</sup> (1.Fac. Agr., Yamagata Univ., 2.United Grad. Sch. Agr. Sci., Iwate Univ.)

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**P026** Fine-mapping of INK gene responsible for hybrid male sterility in rice

☆Rahma, S., T. Kumamaru, T. Kubo (Plant Genetic Resources Lab., Grad. Sch. Biores. and Bioenv. Sci., Kyushu Univ.)

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**P027** QTL analysis for main stem internode length and lodging with the recombinant inbred lines from cross between Japanese and modern US soybean varieties

○Sugimoto, T. <sup>1</sup>, A. Fukuda <sup>2</sup>, A. Hishinuma <sup>3</sup>, O. Uchikawa <sup>4</sup>, S. Morita <sup>4</sup>, R. Okuno <sup>4</sup>, S. Kato <sup>3</sup>, T. Sayama <sup>5</sup>, K. Yokota <sup>2</sup>, T. Shimizu <sup>2</sup>, F. Taguchi <sup>2</sup>, E. Ogiso <sup>2</sup>, A. Kaga <sup>2</sup>, M. Hajika <sup>2</sup>, M. Ishimoto <sup>2</sup> (1.Hyogo Pre. Tech. Cent. Arg. Forest. Fish., 2.Inst. Crop. Sci., NARO, 3.TARC, NARO, 4.Fukuoka Agr. Forest Res. Cent., 5.WARC, NARO)

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**P028** Development of a method for constructing high-accuracy cultivar-specific reference sequence in rice

☆Ishii, K., H. Ichida, T. Abe (RIKEN Nishina Cent.)

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**P029** Molecular discrimination of Japanese main tetraploid grape cultivars based on Gret1 retrotransposon sequences

Takada, S. <sup>1</sup>, K. Fujita <sup>1</sup>, Y. Monden <sup>2</sup>, ○K. Fukunaga <sup>1</sup> (1.Fac. Life and Environmental Sci., Pref. U. Hiroshima, 2.Grad. School of Environmental and Life Sci., Okayama U.)

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**P030** The haplotype catalog of agronomic important genes in Soybean

○Ogiso-Tanaka, E., F. Taguchi-Shiobara, M. Hajika, A. Kaga (Inst. Crop. Sci., NARO)

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**P031** Genetic analysis of anthocyanin content, starch content and dry matter rate of sweetpotato (*Ipomoea batatas*) tuberous root

☆Haque, E. <sup>1</sup>, H. Tabuchi <sup>1</sup>, T. Sakaigaichi <sup>1</sup>, Y. Okada <sup>1</sup>, M. Nishinaka <sup>2</sup>, Y. Monden <sup>3</sup>, K. Shirasawa <sup>4</sup>, S. Isobe <sup>4</sup>, M. Tanaka <sup>1</sup> (1.Kyushu Okinawa Agricultural Research Center, NARO, 2.Institute of Crop Science, NARO, 3.Okayama Univ., 4.Kazusa DNA Res. Inst.)

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**P032** Towards the analysis of four responsible loci for internodal elongation identified by QTL analysis of biomass traits of sorghum F<sub>1</sub> hybrid "Tentakata"

☆Hashimoto, S.<sup>1</sup>, S. Araki-Nakamura<sup>2</sup>, T. Wake<sup>1</sup>, H. Sasaki<sup>1</sup>, K. Ohmae-Shinohara<sup>2</sup>, K. Miura<sup>3</sup>, S. Kasuga<sup>4</sup>, T. Sazuka<sup>2</sup> (1.Grad. Sch. Bioagri. Sci, Univ. Nagoya, 2.Biosci. and Biotech. Center, Nagoya Univ., 3.Dept. Biosci. Fukui Pref. Univ., 4.AFC, Fac. of Agri., Shinshu Univ.)

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**P033** Effects of introducing the number of ovules per pod QTLs under high temperature drought condition in soybean

Ikeda, C.<sup>1</sup>, ☆T. Matsui<sup>2</sup>, M. Iwahashi<sup>2</sup>, K. Okamoto<sup>2</sup>, M. Ishimoto<sup>3</sup>, K. Fujii<sup>3</sup>, K. Komatsu<sup>4</sup>, F. Taguchi<sup>3</sup> (1.Ibaraki Pref. Kennan Agri. & For. Management Office, 2.Plant Biotech. Inst. Ibaraki Agri. Cent., 3.Inst. Crop. Sci., NARO, 4.Western Region Agriculture Research Center, NARO)

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**P034** Verification of QTLs for grain cadmium concentration using 43 common wheat cultivars

○Ban, Y.<sup>1</sup>, G. Ishikawa<sup>2</sup>, K. Kato<sup>1</sup>, K. Takata<sup>1</sup>, N. Ishikawa<sup>1</sup>, F. Kobayashi<sup>2</sup>, M. Yanaka<sup>1,3</sup> (1.WARC/NARO, 2.Inst. Crop. Sci., NARO, 3.KARC/NARO)

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**P035** QTL analysis of agricultural phenotypes in Chinese cabbage

☆Ito, N.<sup>1</sup>, Y. Morimoto<sup>2</sup>, O. Kawaide<sup>3</sup>, T. Ito<sup>5</sup>, T. Fukune<sup>1</sup>, K. Mori<sup>1</sup>, T. Yoshida<sup>3</sup>, H. Azuhata<sup>3</sup>, S. Chino<sup>5</sup>, H. Matsumura<sup>4</sup>, S. Niikura<sup>3</sup>, N. Hayashida<sup>2</sup> (1.Master's Program, Shinshu University, 2.Division of Applied Biology, Faculty of Textile, Shinshu University, 3.TOHOBU SEED CO., LTD., 4.Gene Research Center, Shinshu University, 5.Engineering Department, Faculty of Textile, Shinshu University)

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**P036** New insights into wheat kernel hardness- genome wide association studies of multiple synthetic derivatives

☆Elhadi, G.<sup>1</sup>, N. Kamal<sup>2,3</sup>, Y. Yamasaki<sup>2</sup>, Y. Gorafi<sup>2,3</sup>, K. Takata<sup>4</sup>, H. Tanaka<sup>5</sup>, H. Tsujimoto<sup>2</sup> (1.United Graduation School of Agriculture Sciences, Tottori University, 2.Arid Land Research Center, Tottori University, Japan, 3.Agricultural Research Corporation, Sudan, 4.National Agricultural and Food Research Center, Japan, 5.Faculty of Agriculture, Tottori University, Japan)

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**P037** Isolation and characterization of a gene expressed in both stages of sexual and apomictic embryo sac formation in facultatively aposporous guinea grass

○Chen, L. <sup>1</sup>, L. Guan <sup>2</sup>, T. Sugita <sup>1</sup> (1.Fac. Envir. & Hort. Sci., Minami Kyushu U., 2.Fac. Edu., Miyazaki U.)

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**P038** PgsHSP17.6, a small heat shock protein in pearl millet involved in heat stress response

☆Yu, P. <sup>1</sup>, H. Shinde <sup>1</sup>, A. Dudhate <sup>1</sup>, D. Tsugama <sup>1</sup>, S. Liu <sup>2</sup>, T. Takano <sup>1</sup> (1.ANESC., Univ. Tokyo, 2.State Key Laboratory of Subtropical Silviculture, Zhejiang A&F University, China)

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**P039** Two natural alleles regulate panicle architecture in rice

☆Agata, A. <sup>1</sup>, T. Hobo <sup>2</sup>, K. Ando <sup>1</sup>, S. Ota <sup>1</sup>, M. Kojima <sup>3</sup>, Y. Takebayashi <sup>3</sup>, S. Takehara <sup>2</sup>, K. Doi <sup>1</sup>, M. Ueguchi-Tanaka <sup>2</sup>, T. Suzuki <sup>4</sup>, H. Sakakibara <sup>1,3</sup>, M. Matsuoka <sup>2</sup>, M. Ashikari <sup>2</sup>, Y. Inukai <sup>5</sup>, H. Kitano <sup>2</sup> (1.Grad. Sch. Bioagr. Sci., Nagoya U., 2.Biosci. Biotec. Ctr., Nagoya U., 3.RIKEN., 4.Grad. Sch. Biosci. Biotech., Chubu U., 5.ICCAE, Nagoya U.)

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**P040** Targeted gene disruption of *NAD7* gene in *Arabidopsis thaliana* mitochondrial genome by mitoTALEN

☆Ayabe, H. <sup>1</sup>, T. Hidaka <sup>2</sup>, Y. Tamura <sup>2</sup>, N. Tsutsumi <sup>2</sup>, S. Arimura <sup>2</sup> (1.Fac. Agr., Univ. Tokyo, 2.Grad. Sch. Agr. Life Sci., Univ. Tokyo)

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**P041** Morphological analysis of OsEMF2a showing autonomous endosperm development

☆Kunisada, M., K. Tonosaki, M. Nishino, A. Ono, T. Kinoshita (KIBR, Yokohama City University)

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**P042** Characterization of the bleached tobacco plants observed in the transplastomic plant obtained by an autonomously replicating plasmid

☆Uemura, K., T. Terachi (Fac. Life Sci., Kyoto Sangyo U.)

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**P043** Construction of autonomously replicating plasmid in tobacco chloroplast. I. Production of the transformants using plasmids containing chloroplast DNA fragments

☆Baba, H. <sup>1</sup>, K. Nakamoto <sup>2</sup>, K. Uemura <sup>3</sup>, T. Terachi <sup>3</sup> (1.Fac. Life Sci., Kyoto Sangyo U., 2.Grad. Sch. Life Sci., Kyoto Sangyo U., 3.Fac. Life Sci., Kyoto Sangyo U.)

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**P044** Construction of autonomously replicating plasmid in tobacco chloroplast. II. Identification of chloroplast DNA fragments in the plasmids from transformants

☆Nakamoto, K. <sup>1</sup>, H. Baba <sup>2</sup>, K. Uemura <sup>3</sup>, T. Terachi <sup>3</sup> (1.Grad. Sch. Life Sci., Kyoto Sangyo U., 2.Fac. Life Sci., Kyoto Sangyo U., 3.Fac. Life Sci., Kyoto Sangyo U.)

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**P045** Morphological observation and gene expression analysis of alloplasmic lines of common wheat with *Aegilops mutica* cytoplasm

☆Yamashita, K. <sup>1</sup>, M. Tsujimura <sup>2</sup>, T. Terachi <sup>3</sup> (1.Grad. Sch. Life Sci., Kyoto Sangyo U., 2.Plant Organelle Genomics R. C., Kyoto Sangyo U., 3.Fac. Life Sci., Kyoto Sangyo U.)

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**P046** Genome analysis on transgenic *Arabidopsis* exhibiting aneuploid-like aberrant morphologies

○Watanabe, A. <sup>1</sup>, H. Takahashi <sup>2</sup>, K. Ueda <sup>1</sup>, K. Sakurai <sup>1</sup>, H. Akagi <sup>1</sup> (1.Fac. Bioresource Sci., Akita Prefectural Univ., 2.Cluster of Agricultural Sci., Fukushima Univ.)

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**P047** Low cost RNA extraction method for highly scalable transcriptome studies

☆Yoshino, K., R. Nishijima, T. Kawakatsu (NIAS)

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**P048** RNA-seq analysis associated with weevil resistance in sweetpotato

☆Nokihara, K. <sup>1</sup>, Y. Okada <sup>2</sup>, S. Ohata <sup>1</sup>, Y. Monden <sup>1</sup> (1.Grad. Sch. Environ. Life Sci., Okayama U., 2.KARC/NARO)

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**P049** RNA-seq analysis associated with resistance to *Meloidogyne incognita* in sweetpotato

☆Ohata, S. <sup>1</sup>, K. Ushijima <sup>1</sup>, H. Tabuchi <sup>2</sup>, M. Tahara <sup>1</sup>, Y. Monden <sup>1</sup> (1.Grad. Sch. Environ. Life Sci., Okayama U., 2.KARC, NARO)

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**P050** Gene expression profiling of three rice cultivars with different heat-tolerance at ripening stage

○Sato, Y., Y. Kawahara, H. Takehisa (Inst. Crop. Sci., NARO)

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**P051** Overexpression of rice *BSR1* and *BSR2* confers resistance to *R. solani* in *Torenia*, respectively

☆Maeda, S. <sup>1</sup>, K. Sasaki <sup>2</sup>, N. Ohtsubo <sup>3</sup>, M. Mori <sup>1</sup> (1.NIAS, 2.NIVFS, 3.Kyoto Pref. Univ.)

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**P052** Gene structures, classification, and expressions of pgDOFs transcription factors in pearl millet

○Qu, Y. <sup>1</sup>, A. Dudhate <sup>1</sup>, H. Shinde <sup>1</sup>, D. Tsugama <sup>1</sup>, S. Liu <sup>2</sup>, T. Takano <sup>1</sup> (1.Asian Natural Environmental Science Center of University Tokyo, 2.Zhejiang Agricultural and Forestry University)

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**P053** Protein Phosphatase 2A components interact with the bZIP protein VIP1 and 14-3-3 proteins in *Arabidopsis thaliana*

○Yoon, H. <sup>1</sup>, K. Fujino <sup>2</sup>, T. Takano <sup>1</sup>, D. Tsugama <sup>1</sup> (1.Asian Natural Environmental Science Center (ANESC), The University of Tokyo, 2.Laboratory of Crop Physiology, Research Faculty of Agriculture, Hokkaido University)

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**P054** Analysis of responses to water stress in soybean mini core collection

☆Tsuda, M. <sup>1</sup>, A. Kaga <sup>2</sup>, Y. Ohmori <sup>3</sup>, Y. Sawada <sup>4</sup>, H. Iwata <sup>3</sup>, H. Takahashi <sup>3,5</sup>, M. Nakazono <sup>5</sup>, T. Fujiwara <sup>3</sup>, R. Ohsawa <sup>1</sup> (1.T-PIRC, Univ. Tsukuba, 2.NICS, 3.Grad. Sch. Univ. Tokyo, 4.RIKEN Center for Sustainable Resource Science, 5.Grad. Sch. Bioagri. Sci., Univ. Nagoya)

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**P055** Seed storability of soybean under different storage conditions

☆Jiamtae, P. <sup>1</sup>, M. Hashiguchi <sup>2</sup>, T. Gondo <sup>3</sup>, K. Harada <sup>4</sup>, R. Akashi <sup>1,2</sup> (1.Interdisciplinary Graduate School of Agriculture and Engineering, University of Miyazaki, Miyazaki, Japan, 2.Faculty of Agriculture, University of Miyazaki, Miyazaki, Japan, 3.Frontier Science Research Center, University of Miyazaki, Miyazaki, Japan, 4.Department of Biotechnology, Graduate School of Engineering, Osaka University, Osaka, Japan)

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**P056** Effect of dormancy on overwintering ability of rice seeds, “Koshihikari” “Itadaki” NIL / mutant, under winter soil condition of different area in Japan

○Ushiki, J. <sup>1</sup>, K. Sugimoto <sup>2</sup>, U. Yamanouchi <sup>2</sup>, M. Chiba <sup>3</sup>, M. Furuhashi <sup>4</sup> (1.Hokkaido Agr. Res. Cent., NARO, 2.Inst. Crop Sci., NARO, 3.West. Reg. Agr. Res. Cent. NARO, 4.Tohoku Agr. Res. Cent., NARO)

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**P057** Searching for genetic loci that regulate Cl<sup>-</sup> homeostasis under salt stress using CSSLs derived from wild rice (*O. rufipogon*) and cultivated rice (*O. sativa*)

☆Sato, K. <sup>1</sup>, T. Takashi <sup>2</sup>, T. Ito <sup>3</sup>, T. Horie <sup>3</sup> (1.Appl Biol., Grad. Sch., Shinshu Univ., 2.Staygreen, Co., Ltd., 3.Div. Appl Biol., TST, Shinshu Univ.)



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**P058** Canceled

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**P059** Evaluation of yield for stabilization of alkaloids in a medicinal plant, *Ephedra sinica*  
Stapf

☆Hiyama, H. <sup>1,2</sup>, A. Ozawa <sup>1</sup>, T. Jinbou <sup>1</sup>, Y. Yoshioka <sup>3</sup>, R. Ohsawa <sup>3</sup> (1.TSUMURA & CO., 2.Grad. Sch. Life & Envi. Sci., Univ. Tsukuba, 3.Facul. Life & Envi. Sci., Univ. Tsukuba)

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**P060** Starch retrogradation of sweetpotato variants on amylose contents and pasting temperature

○Nishinaka, M., T. Kuranouchi, K. Katayama (Inst. Crop. Sci., NARO)

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**P061** Expression analysis of mutant Wx proteins in Asian common wheat

○Tanaka, H., S. Inoue, I. Tanoue, Y. Tanaka (Fac. Agr., Tottori Univ.)

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**P062** The effects of environmental factors on phenotypes in Glycine max

○Hashiguchi, T. <sup>1</sup>, M. Hashiguchi <sup>1</sup>, H. Tanaka <sup>1</sup>, S. Sato <sup>2</sup>, A. Hayashi <sup>3</sup>, K. Kodama <sup>3</sup>, T. Tanabata <sup>3</sup>, S. Isobe <sup>3</sup>, A. Nakaya <sup>4</sup>, R. Akashi <sup>1</sup> (1.University of Miyazaki, 2.Graduate School of Life Sciences, Tohoku University, 3.Kazusa DNA Research Institute, 4.Osaka University)

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**P063** An attempt to identify mineral composition variants using soybean mutant population

○Takagi, K. <sup>1</sup>, S. Hiraga <sup>2</sup>, K. Hirata <sup>1</sup>, A. Kikuchi <sup>1</sup>, A. Kaga <sup>2</sup>, T. Anai <sup>3</sup>, M. Ishimoto <sup>2</sup> (1.Tohoku Agric. Res. Cent., NARO, 2.Inst. Crop Sci., NARO, 3.Fac. Agric., Univ. Saga)

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**P064** Morphological and molecular genetic analyses of factors related to  $\gamma$ -oryzanol contents using rice core collections

☆Funakoshi, T., T. Ogawa, T. Tezuka, D. Ohta, S. Yokoi (Graduate School of Life and Environmental Sciences, Osaka Prefecture University)

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**P065** Natural variation of major chemical components in the 1st flush of tea

☆Uchida, T. <sup>1</sup>, H. Yamashita <sup>1,2</sup>, H. Katai <sup>3</sup>, A. Morita <sup>1</sup>, T. Ikka <sup>1</sup> (1.Grad. Sch. Agr., Univ. Shizuoka, 2.Grad. Sch. Agr., Univ. Gifu, 3.Tea Res. Cent., Shizuoka Pref.)

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**P066** Metabolome and Ionome Analyses of Rice Chromosome Segment Substitution Lines

☆Hosokawa, Y. <sup>1</sup>, A. Oikawa <sup>2</sup>, T. Watanabe <sup>3</sup>, Y. Hirayama <sup>4</sup>, T. Sato <sup>5</sup>, I. Takamure <sup>3</sup>, S. Munekata <sup>6</sup>, K. Kato <sup>1</sup> (1.Obihiro Univ. Agr. & Vet. Med., 2.Fac. Agr., Yamagata Univ., 3.Grad. Sch. Agr., Hokkaido Univ., 4.Central Agr. Exp. Stn., HRO, 5.Donan Agr. Exp. Stn., HRO, 6.Kamikawa Agr. Exp. Stn., HRO)

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**P067** Gene expression analysis related to heterosis during early growth in sugar beet

○Kitazaki, K., M. Ohkubo, K. Satoh, T. Kubo (Res. Fac. Agr., Hokkaido Univ.)

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**P068** Low copy number of plastid genome in hybrid weakness shown in the cross between rice cultivars, Nipponbare and Jamaica

Nakazawa, Y. <sup>1</sup>, R. Aoki <sup>1</sup>, K. Ichitani <sup>2</sup>, ○T. Kuboyama <sup>1</sup> (1.Col. Agr., Ibaraki U., 2.Fac. Agri., Kagoshima U.)

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**P069** Heterosis and increased number of plastid genome in seedlings of F<sub>1</sub> hybrids between rice cultivars, Nipponbare and Kasalath

☆Takama, R. <sup>1</sup>, J. Tanaka <sup>2</sup>, K. Ichitani <sup>3</sup>, T. Kuboyama <sup>1</sup> (1.Col. Agr., Ibaraki U., 2.Inst. Crop. Sci., NARO, 3.Fac. Agr., Kagoshima U.)

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**P070** An upright branching mutant of *Lotus japonicus*

☆Osaki, K. <sup>1</sup>, H. Matsuo <sup>2</sup>, E. Fukai <sup>1</sup>, K. Okazaki <sup>1</sup> (1.Grad. Sch. Sci. Tech., Niigata Univ., 2.Grad. Sch. Life & Env. Sci., Tsukuba Univ.)

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**P071** Genetical analysis of the seed longevity in rice cultivar "Habataki"

☆Saighani, K. <sup>1</sup>, K. Murata <sup>2</sup>, M. Kashiwagi <sup>1</sup>, T. Yamada <sup>1</sup>, M. Kanekatsu <sup>1</sup> (1.Uni. Grad. Sch. Agr., Tokyo Univ. Agr. Tec., 2.Toyama Pref. Agr. Fores. Fish. Res. Cent.)

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**P072** Influence of catechin on grain dormancy of wheat

○Himi, E. (School of Agriculture, Kibi International University)

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**P073** Analysis of interaction between VRN-D1 protein and flowering hormone gene *WFT-D* promoter region by Yeast One-Hybrid

☆Kimura, M. <sup>1</sup>, Y. Kazama <sup>2</sup>, K. Murai <sup>3</sup> (1.Fac. Biosci. Biotech., Fukui Pref. Univ., 2.Fac. Biosci. Biotech., Fukui Pref. Univ., 3.Fac. Biosci. Biotech., Fukui Pref. Univ.)

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**P074** Optimized conditions for single cell isolation from barley spikelets

☆Sato, N., J. Ito, Y. Nomura, N. Takeda, H. Tsuji (KIBR, Yokohama City Univ.)

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**P075** Comparative analysis of environmental responses at the shoot apex in various barley varieties under field conditions

☆Ito, J. <sup>1</sup>, Y. Nomura <sup>1</sup>, D. Saisho <sup>2</sup>, K. Takahagi <sup>1,3</sup>, K. Mochida <sup>2,3</sup>, T. Hirayama <sup>2</sup>, H. Tsuji <sup>1</sup> (1.KIBR, Yokohama City Univ., 2.IPSR, Okayama Univ., 3.CSRS, RIKEN)

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**P076** Analysis of mutants changing endosperm starch grain morphology in Barley

○Matsushima, R. <sup>1</sup>, H. Hisano <sup>1</sup>, N. Fujita <sup>2</sup>, K. Sato <sup>1</sup> (1.Institute of Plant Science and Resources, Okayama University, 2.Department of Biological Production, Akita Prefectural University)

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**P077** The relation between unusual seed-like tissue and the gene required in fertilization event in rice

☆Honma, Y. <sup>1</sup>, S. Kurokawa <sup>1</sup>, R. Kasahara <sup>2</sup> (1.Kitami Institute of Technology, 2.Fujian Agriculture and Forestry University)

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**P078** Establishment of culture system and trial of mutant induction by gamma ray irradiation in Yacon

○Murata, T., Y. Matsuda (Sch. Agri. Tokai U.)

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**P079** Genetic polymorphism of unilateral incompatibility genes and identification of the dominant-negative allele, *SUI1-10* in Chinese cabbage

☆Takada, Y. <sup>1</sup>, A. Mihara <sup>2</sup>, Y. He <sup>2</sup>, H. Xie <sup>2</sup>, Y. Ozaki <sup>2</sup>, G. Suzuki <sup>2</sup>, S. Takayama <sup>3</sup>, M. Watanabe <sup>1</sup> (1.Grad. Sch. Life Sci., Tohoku Univ., 2.Div. Natl. Sci. Osaka Kyoiku Univ., 3.Grad. Sch. Agric. Life Sci., Tokyo Univ.)

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**P080** Genetic analysis of self-incompatibility trait in the progeny crossed between self-incompatible and self-compatible lines in *Brassica napus*

☆Ogawa, M. <sup>1</sup>, T. Okamoto <sup>1</sup>, M. Okamoto <sup>1</sup>, E. Hikichi <sup>1</sup>, Y. Takada <sup>1</sup>, G. Suzuki <sup>2</sup>, S. Takayama <sup>3</sup>, M. Watanabe <sup>1</sup> (1.Grad. Sch. Life Sci., Tohoku Univ., 2.Div. Natl. Sci. Osaka Kyoiku Univ., 3.Grad. Sch. Agric. Life Sci., Tokyo Univ.)

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**P081** Gene expression analysis of cytoplasmic male sterile sugar beet with incompletely restoring *Rf1*

☆Itoh, K. <sup>1</sup>, T. Arakawa <sup>1</sup>, H. Matsuhira <sup>2</sup>, Y. Kuroda <sup>2</sup>, K. Kitazaki <sup>1</sup>, T. Kubo <sup>1</sup> (1.Grad. Sch. Agr., Hokkaido Univ., 2.NARO HARC)

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**P082** Molecular analysis of recessive *rf1* alleles in sugar beet maintainer lines of different origin

☆Matsui, K. <sup>1</sup>, T. Arakawa <sup>1</sup>, H. Matsuhira <sup>2</sup>, Y. Kuroda <sup>2</sup>, K. Kitazaki <sup>1</sup>, T. Kubo <sup>1</sup> (1.Grad. Sch. Agr., Hokkaido Univ., 2.NARO HARC)

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**P083** Identification of candidate genes for dioecism and monoecism in spinach

Osabe, T. <sup>1</sup>, K. Iwabuchi <sup>2</sup>, H. Hirakawa <sup>3</sup>, Y. Suzuki <sup>4</sup>, ○Y. Onodera <sup>1,5</sup> (1.School of Agriculture, Hokkaido University, 2.Graduate School of Agriculture, Hokkaido University, 3.Kazusa DNA Research Institute, 4.Graduate School of Frontier Sciences, The University of Tokyo, 5.Research Faculty of Agriculture, Hokkaido University)

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**P084** Development of efficient chromosome doubling method in gentian

☆Takamura, Y. <sup>1,2</sup>, R. Takahashi <sup>2</sup>, T. Hikage <sup>2</sup>, K. Hatakeyama <sup>1</sup>, Y. Takahata <sup>1</sup> (1.Fac. Agri., Iwate Univ., 2.Hachimantai City Floricultural R & D Center)

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