

<<甘薯可持续生产技术与粮食能源安>>

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前言

Sweetpotato is an important food, forage, industrial raw material crop, and today it is especially attached importance as a new energy resource crop. China, Japan, and Korea are the world's main producers of sweetpotato, and the three countries have led the world in many aspects of this crop such as breeding, cultivation, biotechnology, and processing. Thus, China-Japan-Korea Workshop on Sweetpotato is held at two-year intervals to exchange the research results and experiences and to promote the research and production of this crop. The 3rd China-Japan-Korea Workshop on Sweetpotato is organized jointly by Sweet-potato Specialty Committee, Crop Science Society of China, China Agricultural University, Xuzhou Sweetpotato Research Center, Beijing Daxing District Government, and Beijing Daxing Panggezhuang Town Government. Beijing Daxing District Government, Beijing Daxing Panggezhuang Town Government, National Natural Science Foundation of China, Ministry of Agriculture of China, and Ministry of Science and Technology of China provided generous financial support to this workshop. This proceedings volume includes 75 papers presented at this workshop they are arranged in five sessions, genetic resources and breeding, cultivation and physiology, diseases and pests, cell biotechnology and molecular breeding, and functionality and processing. During the workshop, lots of poster presentations are exhibited. We hope this scientific gathering is a forum to exchange the research results and experiences, to discuss the problems and challenges, and to come up with the possible solutions for today and tomorrow. We are very grateful to Beijing Daxing District Government and Beijing Daxing Panggezhuang Town Government for providing financial support to this workshop. Special thanks are due to all the members of the Organizing Committee and Scientific Committee (Committee of the Editorial Board) for their cooperation and efforts. Finally, we wish to express our gratitude to Mr. Yufeng Yang, Mr. Wei Chen, Mr. Ding Zhao, and Mr. Shang Gao for their kind assistance in preparing the proceedings. Beijing 2008 Olympic Games have achieved a great success ! We wish each of you a pleasant stay in Beijing.

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内容概要

《甘薯可持续生产技术与粮食能源安全：第三届中日韩甘薯学术讨论会论文集（英文版）》主要内容Sweetpotato is an important food , forage , industrial raw material crop , and today it is especially attached importance as a new energy resource crop. China , Japan , and Korea are the worlds main producers of sweetpotato , and the three countries have led the world in many aspects of this crop such as breeding , cultivation , biotechnology , and processing. Thus , China-Japan-Korea Workshop on Sweetpotato is held at two-year intervals to exchange the research results and experiences and to promote the research and production of this crop.

书籍目录

Session 1 Genetic resources and breeding
 Genetic difference of sweetpotato cultivars in East Asia as revealed by AFLP marker Qiang Li, Peng Li, Qingchang Liu, Oaifu Ma, Xiuying ki, Xin Wang, Hongmin Li, Yiping Xie, Qinghe Cao, Zhonghou Tang, Hong Zhai
 Evaluation of tolerance and resistance to southern root-knot nematode in sweetpotato Takayuki Suzuki, Katsuki Adachi
 Analysis of genetic diversity of sweetpotato germplasm in China Yuming Li
 Studies on genetic stability of sweetpotato germplasm maintained in National In Vitro Genebank Donglan Zhao, Jun Tang, Zhilin Zhou, Yungang Zhang
 Rapid evaluation method for low temperature tolerance of sweetpotato lines T. Kuranouchi, T. Kumazaki, Y. Nakamura, A. Ohara-Takada, T. Kumagai
 Variations of soluble sugar content in storage roots of sweetpotato during their growing periods Yufan Fu, Yuanyuan Ling, Funian Sun, Jinchuan Leng, Qitang Zhang
 Proteomic analysis in three sweetpotato cultivars with different flesh color of storage roots deung-doo Lee, dae-Young An, Haeng-Soon Lee, Joon-Seol Lee, Sang-Soo Kwak
 Breeding research in Xuzhou Sweetpotato Research Centre Xiuying Li, Daifu Ma, Hongmin Li, Yiping Xie, Qiang Li, Xin Wang, Qinghe Cao, Zhonghou Tang
 Sweetpotato breeding technology of high photosynthetic efficiency Zhimin Ma, Lanfu Liu, Songshu Zhang
 Improvement of high starch sweetpotato population by recurrent selection Yuming Li
 Production and characteristic evaluation of interspecific somatic hybrid plants between sweetpotato and its wild relatives Yufeng Yang, dianming Guo, Shikai Guan, Hong Zhai, Qingchang kiu
 Interspecific hybridization between Ipomoea batatas (L.) Lam. and two diploid wild relatives Qinghe Cao, An Zhang, Daifu Ma, Hongmin ki, Qiang Li, Xiuying ki, Xin Wang
 Breeding of Yanshu 22 with high yield and high starch content Zujun Lin, Guosheng Xin, Junjie Han, Zhijian Liu, Lili Shang
 Breeding of new sweetpotato varieties with orange-flesh for processing Xuanyang Chen, Zhaojuan Zhang, Fengxiang Chen, Zhaonian Yuan
 A new sweetpotato variety for flowering “ Morningwhite ” , “ Morningpurple ” doon-Seol Lee, Kwang-Ho deong, din-Ki Bang, Jae-Sung Choi, Byeong-Choon deong
 Breeding and utilization of purple flesh sweetpotato Yizhi Xie, Xiaoding Guo, Zhaodong dia, Qinghong Yin, Qitang Zhang, Yufan Fu
 Breeding of a new leaf-vegetable type sweetpotato variety Fushu 10 Youxian Qiu, Nangtong Cai, Wielu Luo, Qiuyun Wu, Wenbin kuo, Hao Tang, Yongqing Xu, Zhonghua Liu, Guangxin Li
 Breeding of Quanshu No. 9, a new sweetpotato variety with high starch content and high yield Chengzhang Yu, Wenzhe Fu, Wenzhong He, Ruifang Huang, Zhixiong Ye, Meiyu He
 Session 2 Cultivation and physiology
 Cultivation of sweetpotato by using bio-degradable plastic mulching films Oonseol Lee, Kwangho deong, dinki Bang, daesung Choi
 Experiment on multiline mixture in cultivation of sweetpotato-yield and pest damage Baiping Fang, dingli Luo, Runpeng Wei, Jinyi Chen, Xiongjian Zhang
 Establishment of mass propagation system of virus-free sweetpotato plants and conservation Kwangho deong, doonseol Lee, daesung Choi, dinki Bang
 High efficiency and simplified planting technology of virus-free sweetpotato Xinmin Shi, Zhilin Zhou
 Rational utilization of fertilization in high-yield cultivation of sweetpotato Guosheng Xin, Zujun Lin, dunlie Han, Zhijian kiu, kili Shang, Qingfu Du
 Effects of potassium on potassium efficiency, yield and pigment contents of sweetpotato Guoquan Lu, Wenjing Zhao, Shenyang Yi
 The accumulation and regulation of starch and the related enzyme activity during the thickening period of sweetpotato Liming Zhang, Qingmei Wang, Beitao Xie
 Hydrogen sulfide promotes root organogenesis in sweetpotato seedlings Hua Zhang, Long Ruan, Yongkang Ye, Zehua Sun, Lijuan Bao, Songhua Wang, Jianping Luo
 Effects of long-term different fertilization on the sweetpotato yield Aijun Zhang, Hong Zhu, Fei Xu, Jian Sun
 Effect of planting sweetpotato on dry farmland with different gradient slopes on soil erosion in Three Gorges Reservoir Region of Yangtze River dinchuan Leng, Yuanyuan Liang, Yufan Fu, Chunxian Yang, Qitang Zhang
 Effects of chemical control on growth and yield of virus-free sweetpotato Chengxing Huang, Yanxia Li, dianzhi Fan, Chengding Duan, Hongmei Zhou
 High yield mechanism and physiological characters of new sweetpotato varieties Lanfu Liu, Songshu Zhang, Yuanzhang Guo, Zhimin Ma
 Protective role of hydrogen sulfide on chlorophyll degradation and antioxidant metabolism in seedling leaves of Ipomoea batatas exposure to osmotic stress Hua Zhang, Fang Wang, Lijuan Bao, Rui Wang, Songhua Wang, Jianping Luo
 Storage test of sweetpotato slurry for fuel-ethanol production Hongmin Li, Fei Xu
 Current status of sweetpotato industry in Beijing Daxing District and development

proposalsJiaqi Yan,Zongguang Chen,Yanchun Li,dinsheng Lu High-yield cultivation technology of high-starch sweetpotato Eshu No. 5 interplanted with young treesJian Lei,Xinsun Yang,Hui Deng,Niandi Yang,Tiguo Hu Physiology of a new high yield sweetpotato variety- Shangshu 19Aimei Yang,Jiacai Wang,Yunan Ji,Xinghua Xie,Shuzhi Sun Inter-planting cultivation between sweetpotato and orchardZili Wang,Zhongling Liu,Jiafan Qin,Yaoli Wu Production status and industrialization development countermeasures of sweetpotato in Jining CityChengxing Huang, Denglou Qiu, Yanxia Li, Chunlan Wang, Shuihua Jing, Shujuan Yang Grey relational analysis of storage root yield and above-ground traits in different sweetpotato genotypesGuiling kiu,Jianli Zheng, Xinming kiu, Baofang Chen, Peng ZhangSession 3 Diseases and pestsThe advanced identifications of sweetpotato stem nematode (*Ditylenchus destructor*) and its key control in ChinaPinsan Chen, dingwu Zheng,dunshan Qi Development and prospect of sweetpotato virus disease in ChinaYiping Xie, Houjun Sun Isolation and identification of the pathogens causing vine stalk and root rot of sweetpotatoZhongxia Luo, Boping Fang, Lifei Huang,Xiongjian Zhang, Jingyi ChenProgress in sweetpotato whitefly, *Bemisia tabaci* GennadiusHoujun Sun, Yiping XieSession 4 Cell biotechnology and molecular breedingIn vitro selection of salt-tolerant mutants and cloning of candidate salt-tolerantgenes in sweetpotato (*Ipomoea batatas*(L.) Lam.)Shaozhen He,Yao Zhao,kili Shang,Hong Zhai,Qingchang Liu Evaluation of resistance to SPFMVs in transgenic sweetpotato by graft-inoculationand aphid transmissionYoshihiro Okada,Akira Saito Transgenic plants expressing sweetpotato swpa4 peroxidase with enhanced tolerance to environmental stressesYun-Hee Kim,Cha Young Kim,Haeng-Soon Lee,Jae-Wook Bang,Sang-Soo KwakEstablishment of efficient transformation system using embryogenic suspension cultures and rgeneration of transgenic plants expressing exogenous genes in sweetpotato,*Ipomoea batatas*(L.) Laim.Shang Gao,Bo Yu,Ning Zang,Ding Zhao,Li Yuan,Hong Zhai,kili Shang,Qingchang kiu Transgenic sweetpotato plants expressing spike protein of porcine epidemic diarrhea virusKyoung-Sil Yang, Suk-Yoon Kwon,Joon-Seol Lee, Sang-Son Kwak, Haeng-Soon Lee Transgenic sweetpotato plants expressing a cold-inducible zinc finger protein,SCOF-1Myoung Duck Kim, Kyoung-Sil Yang, Hyun-Sook Woo, Jung-Mae Liu, Suk-Yoon Kwon,Sang-Son Kwak,Haeng-Soon Lee Construction of cDNA library of sweetpotato storage roots and molecular cloning of carotenoids biosynthesis related genesWei Chen,Yuanjun Yang,Wenjin Su,Yuping Wang,Hong Zhai, Qingchang kiu Metabolic engineering of antioxidants in sweetpotatoYoung Ock Ahn,Sun Ha Kim,Cha Young Kim,Joon-Seol Lee,Haeng-Soon Lee,Sang-Son Kwak Construction of cDNA library of sweetpotato storage roots and molecular cloning of stem nematode resistance related genesHong Zhai,Lili Shang,Zhesheng Liu,Qingchang Liu Functional characterization of the SRF1 gene using transgenic sweetpotato plantsMasaru Tanaka, Yasuhiro Takahata, Hiroki Nakayama Metabolic engineering for industrial sweetpotato in marginal landsKyoung-Sil Yang,dung-Mae kiu,Yun-Hee Kim,Yong-Ock Ahn,Cha Young Kim,Myung-Duck Kim,Haeng-Soon Lee, IL-Gin Mok,Jeung-Joo Lee,Joon-Seol Lee,Zhilin Zhou,Xin Yang,Daifu Ma,Sang-Soo KwakAnalysis of root-specific promoters in sweetpotatoCha Young Kim,Kyoung-Sil Yang,dung-Mae Liu,Sang Yeop Seong,Young Ock Ahn,Haeng-Soon Lee,Sang-Son Kwak Development of transgenic sweetpotato with functional feed materialsKyoung-Sil Yang, Myeong-Duck Kim,doon-Seol Lee, Sang-Son Kwak, Haeng-Soon LeeExpression of an engineered tandem-repeat starch-binding domain in sweetpotato plantYujun Xing,Qin di,Qing Yang,Yuming Luo,Oiang Li,Xin Wang Relationship between apparent amylose content and functional properties for the transgenic sweetpotato starches having different amylose contentsKanefumi Kitahara, Motoyasu Otani, Tatsuro Hamada, Takiko Shimada, Kiyotaka Fujita,Toshihiko Suganuma Enhanced tolerance of transgenic sweetpotato plants overexpressing nucleoside diphosphate kinase 2 to environmental stressesYun-Hee Kim, Hyun-Sook Woo, Soon Lim, Suk-Yoon Kwon, Haeng-Soon Lee, Dae-Jin Yun,Sang-Soo KwakMolecular cloning and expression profile analysis of F3'H cDNA encoding flavonoid 3'-hydroxylase from the purple-fleshed sweetpotato, *Ipomoea batatas* (L.) Laim. Yifu Gong,Wei Zhou,Qili Feng,Feng Gao Cloning of dihydroflavonol 4-reductase gene from sweetpotato *Ipomoea batatas* (L.)Lam.)and its expression in *E. coli* Fuyun Hou,Baojie Zhao,Oingmei Wang,Aixian ki,Haiyan Zhang,Liming ZhangA genetic linkage map of sweetpotato [*Ipomoea batatas* (L.)Lam.] based on AFLP markersand the localization of stem nematode resistance geneOin Oie,Hua Li,Ning Zhao,Oun Hu,Hong Zhai,Daifu Ma,Oingchang Liu.....Session 5 Functionality and processing

章节摘录

插图：Sweetpotato cultivar “ Xushu 8 ” (*I. batatas* (L.) Lam. , $2n = 6x = 90$) as maternal, were pollinated with pollen from two related wild species, *I. grandifolia* ($2n = 2x = 30$) and *I. purpurea* ($2n = 2x = 30$) . To overcome interspecific cross-incompatible barrier, we implied a certain content of plant growth regulators to the stalk of the pollinated flower, followed as 100mg/1 GA₃ +50rag/1 6-BAo It should be treated at least 7 days consecutively for good fruits and seed sets. For mitotic chromosome counting, the F₁ hybrids stem was cut and put in water to obtain roots. Grown about 1 cm in length, young root tips were pre-treated with 8-hydroxyquinoline for 2 h at 20C and fixed in 3 : 1 ethanol-acetic acid for 24 h. Root tips were squashed in Carbol fuchsin and chromosome counting was carried out. For meiotic study, the F₁ hybrids' young floral buds of different sizes were collected and also fixed in 3 : 1 ethanol-acetic acid for 24 h, then were transferred to 70 % alcohol and stored under refrigeration until use. The anthers were dissected out from floral buds. And microspores were squashed in Carbol fuchsin. Photomicrographs were made with a Leica DM2500 microscope. Pollen viability was assessed with 2 % acetocarmine in freshly ripened pollen grains. For inter-simple sequence repeat (ISSR) analysis, genomic DNA was extracted from freeze-dried leaves from plants grown in field. The leaf tissue was ground to a fine powder and DNA extracted using the improved CTAB method. The PCR amplification conditions adopted were similar to those of Huang et al. (2000) . The 30-mer primers (UBC setNo. 9) were synthesized and were finally selected for use in this study. Amplifications were carried out in 1.5 mM MgCl₂, 2% formamide, 200 nM primer, 1 U of Taq polymerase, and 10 ng of genomic DNA per 20 μ l reaction. PCR amplification was performed using the following cycle profile: 1 cycle at 94C for 5 min followed by 45 cycles at 94C for 45 s, 50- 55C (depending on primers used) for 45 s, 72C for 1.5 min; and a final 7-min extension at 72C. The amplified products were electrophoresed on 1.5 % agarose gels and detected by staining with ethidium bromide. Results and Analysis. Interspecies hybridity With Xushu18 as material, it was pollinated with 68 and 59 flowers of two related species, *I. grandifolia* and *I. purpurea*, respectively. To overcome the ovary development barrier, the complex of plant growth regulators were applied to stalk of flowers. 2 and 11 fruits were obtained from each cross. And each set 3 and 5 satiation seeds (Table 1) . Owing to seeds' weak germination and growth, only one seedling of each cross grew into adult plant. By somatic chromosome preparation, two plants were both 60 chromosomes which verify the two hybrids may be come from the true hybridity of cultivars ($2n=90$) and two wild species ($2n=30$) . Both hybrids (*I. batatas* X *I. grandifolia* and *I. batatas* X *I. purpurea*) were morphologically different in leaf shape and leaf color (Fig. 1 a-b) , and intermediate between their respective parents in tube root morphology (Fig. 1 c-e) The F₁ hybrid *I. batatas* X *I. grandifolia* was characterized by fast-growing, multi-branching and slim tube root (Fig. 1 d) , while the hybrid *I. batatas* X *I. purpurea* was medium-growing, short-branching and medium tube root (Fig. 1 e) .

编辑推荐

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