

<<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.

## 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.

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## 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/l GA<sub>3</sub> +50rag/l 6-BAo It should be treated at least 7 days consecutively for good fruits and seed sets. For mitotic chromosome counting, the F<sub>1</sub> 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 F<sub>1</sub> 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 microsporocytes 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 MgCl<sub>2</sub>, 2% formamide, 200 nM primer, 1 U of Taq polymerase, and 10 ng of genomic DNA per 20  $\mu$ 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 maybe 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 F<sub>1</sub> 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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