<<种子健康与农业发展>>

图书基本信息

书名：<<种子健康与农业发展>>

13位ISBN编号：9787511602565

10位ISBN编号：7511602568

出版时间：2010-8

出版时间：中国农业科学技术出版社

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页数：182

前言

Welcome to Beijing, China. Welcome to join the 3rd International Symposium on Seed Health in Agricultural Development (3ra SHAD) taking place in Beijing, August 25-27, 2010. The 3rd SHAD is organized by the Danish Seed Health Centre for Developing Countries (DSHC), Denmark, the Asian Seed Health Centre (ASHC), Mysore, India, African Seed Health Centre (AfSHC), Morogoro, Tanzania, and the Seed Health Centre of China Agricultural University (SHC-CAU), Beijing, China that hosts the symposium. The Symposium includes 28 oral presentations covers by four sessions and 9 key invited speakers, 24 posters, and 22 paper abstracts. To encourage Chinese seed scientists to attend the symposium, we have accepted several abstracts and papers in Chinese since this is also the sixth national symposium of seed pathology in China. This is the third Symposium of a series of meeting to be organized on a regular basis andunder the auspices of the DSHC in different partner countries. The SHC-CAU established in 2007 has become a member of the international recognized group of the seed health centres in Europe, Asia and Africa. The SHC-CAU is growing fast and trying best to boost the seed health system in China.The DSHC was established in 2004 by combining the activities of the former Danish Government Institute of Seed Pathology (DGISP) with development activities of the Department of Plant Biology and Biotechnology, Faculty of Life Sciences, University of Copenhagen, Denmark. The DSHC conducts research and training within the areas of seed health technology and plant pathology with the primary objective of improving farm-saved seed and locally produced seed in developing countries. DSHC sustains and expands the research and training activities implemented in collaboration with the regional centres and other partners of Africa and Asia.

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内容概要

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章节摘录

插图：Bacterial canker of tomato is a serious seed-borne disease caused by Clavibacter michiganensis subsp, michiganensis (Cmm). Copper-based fungicides are responsible for bacterial diseases control in field for many decades. Hydrochloric acid is often used to treat seeds after harvest. Meanwhile, copper and acid are inducers for viable but non-culturable (VBNCstate) in some food microbes.In Chinese tomato seed production areas, we use routine methods, such as bio-PCR, to test whether the seed-parents, soil and weeds besides the field bring Cmm. All the results are negative. But the disease still occurs every year. It is supposed that the disease may be caused by Cmm in VBNC state which cannot be tested by the routine methods.This was the first report which carried the impact of different concentrations of copper (Cu2+) and different pH values on Cmm, the method of staining Cmm by LIVE/DEAD BacLight Bacterial Viability Kits L13152, and the VBNC state of Cmm induced by copper and acid environment. The results indicated that less than 1.0 mmol/L of copper sulfate had no significant impact on the survival of Cmm, moreover, 2.5 mmol/L of copper sulfate and 5.0 mmol/L of Kocide2000 could kill all cells. Cmm could grow in LB broth with pH 5.0-9.5 and the optimal pH value was 6.0~8.5. When staining Cmm with LIVE/DEAD BacLight Bacterial Viability Kits, the optimal proportion was Cmm: SYTO9:PI:ddH20 = 40:6:5:11 (V:V:V:V) and the optimal time was 20 min. The result also showed that Cmm could enter VBNC state induced by copper, acid and oligotrophy. It was the first report that Cmm could enter VBNC state induced by copper and acid. It applies a possible origin of the primary infection. At the same time, the result challenges the exiting seed health test methods; For the negative results, resuscitation of VBNC state should be added.

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