

泰国玉米生产和遗传改良研究 Maize Production and Research for Genetic Improvement in Thailand

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摘要 玉米是泰国一种重要的谷类作物。2000年种植面积估计为1.30百万公顷，籽粒产量约4.48百万吨。杂交种植面积占到玉米总面积的85.08%，以单交种类型为主，占到杂交种各种类型的74%，其次为三交种。玉米生产主要限制因素为病害(高粱霜霉、南方锈、茎腐、大斑、小斑病)、虫害(亚洲玉米螟)和干旱胁迫。玉米种质发展和品种遗传改良开始于1950年，主要从事单位为农业部农业厅和大学部肯色萨大学。先后育成Suwan 1、Suwan 2、Suwan 3,Nakhon Sawan 1, Suwan 5等改良群体和Suwan Complex、KS 23 broadbase syn.。并从中提取出Ki21、45、Nil等几十个优良系，组配出Suwan 2301、3851、Nakhon Sawan 72等十多个优良杂交种。分别应用10个群体双列杂交法、顶交法和优良适应品种与外引种质杂交法等，确定了如下几个杂种优势模式：(Suwan 1,Suwan 3)×(Caripeno DMR,KS6);(Suwan 1,Suwan 3,KS6选育系)×(Ki21,Mol17衍生系);[KS 23(S)C2,Suwan 5(S)C3]×[Suwan 1(S)C11]。

Abstract: Maize is one of major cereal crops in Thailand.In the year 2000,it was estimated that the planted area is of 1.30 million hectares and produces about 4.48 million tons.The amount of hybrid seed was 17.76 thousand tons with acquiring 85.08% of total planted area.Production constraints main were biotic and abiotic factors,involving diseases of sorghum Downy Mildew,Southern rust,Southern corn leaf blight,Northern corn leaf blight and Charcoal stalk rot and inset of the Asian corn borer,and drought stress.The maize research for germplasm development and varietal genetic improvement in Thailand was initiated by the Department of Agriculture in 1950 and Kasetsart University in 1958.Several elite populations of Suwan 1,Suwan 2,Suwan 3, Suwan 5,KS6,KS23,and Suwan-Complex were developed.The superior lines of Ki21,Ki 45,Nil etc and elite hybrids of Suwan 2301,Suwan 3851,Nakhon Sawan72# etc. were bred.In order to search for heterotic partners,diallel crosses of elite populations with differing in genetic background were performed by the breeding program.The several heterotic partners were determined. i. e. (Suwan 1,Suwan3)×(Caripeno DMR,KS6);(Inbred lines from Suwan 1,Suwan 3,KS6)×(Ki21,a Mol17 derivative line) and [KS 23(S)C2,Suwan 5(S)C3]×[Suwan 1(S)C11].

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