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水稻 株型育种

陈友订 黄秋妹 张 旭 编著

张 旭 主审

THE BREEDING
OF RICE PLANT-TYPE

Authors: Chen Youding, Huang Qiumei, Zhang Xu

Responsible Reader: Zhang Xu

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内 容 提 要

本书共分6章,内容涉及我国水稻分布的生态因子和区划、水稻株型育种的基本原理和方法及水稻株型育种所需的先进设备和技术。全书以水稻生长发育的特点、生态条件的变化规律和作物的形态与机能相统一的原理为基础,全面而系统地阐述了我国水稻高光效与动态株型育种、水稻耐冷株型育种和水稻光温敏雄性核不育系育性生态及形态改良的基本原理、概念和方法等。

本书内容全面、科学性强,是我国稻作领域内首部关于株型育种的专著,可供从事水稻科研、教学人员和大专院校相关专业师生阅读参考。

前 言

作者对水稻株型的观察与研究始于 20 世纪 60 年代中期,以后随着承担国家“863”计划、国家自然科学基金、国家“六五”至“十五”科技攻关、农业部科技攻关以及广东省自然科学基金、广东省科技攻关等项目的过程中,逐渐把水稻株型的研究与育种学科紧密地联系起来。在长达 40 年的时间内,通过对水稻生长发育的特点以及生态条件变化的规律和两者相互作用关系的认识,并按照形态与机能相统一的原理,从物质流、能量流和信息流三个研究入手,对水稻株型育种的基本原理和方法、我国高光效株型和动态株型育种、耐冷育种及温、光敏雄性核不育系的形态改良历史、现状及其取得的成就与经验,作了比较系统的回顾和总结之后,经过去粗取精、去伪存真的提炼加工才撰写成《水稻株型育种》这部专著。因此,作者除诚挚感谢国家和省、部级有关项目的经费支持外,还特别感谢下列或参加研究、或提供图片和数据资料、或协助本书出版而给予其他帮助的广东省农业科学院水稻研究所内的同人们:李兵、廖耀平、陈钊明、李传国研究员,林道宣、陈冠华、林秀珍、张俊英、孔清霓、黄农荣、刘彦

卓、陈建伟、陈文丰、黄庆、刘怀珍副研究员,黄世天、邱润恒、吴东辉、陆秀明、冯纪英、陈乃坤高级实验师,刘军、李晨、白嵩博士,冯红鹰、涂从勇、何秀英、周新桥助理研究员,以及李巨昌、区小华、陈赛炎、李丽君、张丽娟、黄兰芳、区小明、余明锐、曾国强等同志。

由于本书编写时间仓促和作者水平有限,书中谬误在所难免,故殷切希望诸位同行和热心读者予以斧正,笔者欢迎之至。

编 著 者

2005 年 5 月

Preface

Our observations and research work on the rice plant-types have been carried out since the middle of 1960s and were supported especially by the national 863 projects, National/GuangDong Natural Science Fund, and the Sixth to Tenth 5-year National/GuangDong Technology Key Projects. Along with the accumulation of research experience we have gradually linked our Rice Plant-types studies with the Rice Breeding discipline for a long time.

This book, Rice Plant-type Breeding, was composed of six independent and interrelated Chapters that were completed on the basis of our progressive cognition of rice growth characteristics and ecological factor change feature during the passing 40 years. In the light of the coordination principle of morphology and physiology, and from the angles of material flow, energy flow and information flow, the fundamentals and methods of the world rice plant-type breeding, the current status and prospects of rice plant-type breeding, concerned with high photosynthetic efficiency, Dynamic Plant-type Breeding, Rice Cold-tolerant Breeding, and the Photo-thermo-sensitive Genic Male-sterile Rice morphology amelioration process, were reviewed and summarized in a systematic way in the book.

Appreciation is extended to those friends and colleagues who have contributed to the Edition of Rice Plant-type Breeding. We wish to thank the senior researchers Li Bing, Liao Yaoping, Chen Chaoming, Li Chuanguo, Lin Daoxuan, Chen Guanhua, Lin Xiuzhen, Zhang

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In particular, we also welcome readers to point out the existing errors in the book.

Chen Youding
Huang Qiumei
Zhang Xu
May 2005

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