



Queen Rearing Workshop
Second Edition

Forward

Welcome to the Born and Bred queen rearing workshop. The North Carolina State Beekeepers Association (NCSBA) in cooperation with the apiary inspection program of the North Carolina Department of Agriculture and Consumer Services (NCDA&CS) and with the guidance of the Apiculture Program at North Carolina State University (NCSU) is proud to present a program of beekeeper instruction with the goal of promoting an in-state queen and honey bee supply. It is a fact that North Carolina is home to the largest number of hobbyist beekeepers of any State in the Union and therefore the demand for honey bee queens, packages and nucs is substantial but the local supply is limited; the overwhelming majority of honey bees annually purchased by North Carolina beekeepers is produced in other regions. The climactic conditions of North Carolina are such that a person or firm with the will and capital required to operate a large scale honey bee farm would most assuredly relocate to a more southern state where the production season begins a full two months earlier than that of North Carolina. However, North Carolina has potential to be an unparalleled region for local queen micro-breeders; small scale queen rearing enterprises that are able to produce their product in the local area where the product is in demand. Beekeepers agree that queens from locally adapted stock are better. The information that is presented in the following pages is of such substance that a beekeeper with some degree of determination can learn to raise any amount of queens; from ten to ten thousand.

The Born and Bred Queen Rearing Program offers queen rearing workshops for beekeepers to receive instruction and become familiar with the equipment necessary for queen rearing. Hands on grafting workshops are offered at the NCSBA summer meetings. In 2019, a chapter level Born and Bred program will be implemented for local NCSBA chapters to operate their own queen rearing programs. Advanced bee breeding instruction is planned in conjunction with the NCSU Apiculture program. As the full scope of the Born and Bred queen rearing program is realized, the Born and Bred team hopes to promote queen rearing in the state of North Carolina in order for beekeepers to be able to raise their own queens as well as for micro-breeders to operate in-state honey bee farms.



Table of Contents

Chapter One	1
The innate ability of the honey bee to reproduce and survive and the stimuli that trigger queen rearing behavior.	
Chapter Two	3
The effects that environmental factors have with regards to honey bee behavior and queen production.	
Chapter Three	5
The specialized equipment and devices of queen rearing--what to use, how to build, and where to purchase items such as grafting room equipment, cell cups, incubators, mating nuc boxes, feeder.	
Chapter Four	9
The basics of stock selection.	
Chapter Five	11
The timing and mechanics of cell production in nature and by the beekeeper.	
Chapter Six	25
How to establish, manage, and evaluate the mating colonies.	
Chapter Seven	35
How to determine the queen status of a hive without locating the queen.	
Chapter Eight	39
How to catch, mark, cage, and transfer queens.	
Chapter Nine	41
Cell building of commercial queen rearing.	
Chapter Ten	45
Hygienic testing at a glance.	

The Born and Bred Team

NCSBA

Paul Newbold, NCSBA President, NCSBA Master Beekeeper

Etienne Nadeau, Born and Bred Queen Rearing Program Chairman, NCSBA Master Beekeeper

Todd Walker, NCSBA Membership Secretary, NCSBA Master Beekeeper

Rick Coor, NCSBA Immediate Past President, NCSBA Master Beekeeper, North Carolina Micro-breeder

The North Carolina Department of Agriculture and Consumer Services NCDA Apiary Inspection Program

Don Hopkins, Chief Inspector, Western Piedmont

Will Hicks, Eastern Piedmont

Adolphus Leonard, Coastal Plains

Gregory Fariss, Foothills

Nancy Ruppert, Sandhills

Lewis Cauble, Mountains

North Carolina State University Apiculture Program

Dr. David Tarpy, Professor and North Carolina State Cooperative Extension Apiculturist, Department of Entomology and Plant Pathology

Jennifer Keller, North Carolina State University Apiculture Program Technician



The Author, Rick Coor, in one of his mating apiaries

Born and Bred Queen Rearing Workshop Manual, Second Edition

©2019 North Carolina State Beekeepers Association, Inc.

Original text by Rick Coor

Edited by Dr. David Tarpy, North Carolina State Cooperative Extension Apiculturist

Design/Layout by Todd Walker

Photography by Rick Coor and Todd Walker (unless otherwise indicated)