

# **The Advanced Guide to Commercial Butterfly Production**

## **By Nigel Venters and Linda Rogers**

### *Introduction and Overview of the Farm Operations*

#### **1.1 Introduction and Overview of Farm A - Linda Rogers**

The primary interest of butterfly breeders is to produce healthy insects of strong and consistent quality in the volumes desired. This detailed guide will assist commercial butterfly breeders in meeting their goals, as it presents specific methods, equipment designs and facility layouts for more efficient production and disease prevention.

The commercial butterfly breeders have been beset with disease problems, mainly in raising Monarch and Painted Lady butterflies. These disease problems result primarily from raising larvae and livestock indoors in closed containers, and feeding cut foodplant. In *The Commercial Butterfly Breeders Manual*, Nigel Venters provided various settings for raising the different life stages, but warned that sooner or later, the combination of closed containers, cut foodplant, and indoor raising will eventually bring disease and disaster!

As far back as 1835, early silkworm producers noted that insect diseases responsible for mortality in silkworm cultures were a result of overcrowding; poor ventilation; warm, humid conditions; and poor food quality. In raising butterflies in artificial conditions and in high volumes, disease and death is not a risk, it is a certainty. We can learn this either by listening to the past experience of others or our own firsthand mistakes. It is painful and costly to lose livestock. This guide is prepared to give commercial butterfly breeders the plans and methods that spell success – that will indeed produce high numbers of healthy, strong butterflies.

This guide provides specific systems and setups for achieving success in raising the number of butterflies desired, whether it is 100 per week or 10,000. Two different farm setups are presented. Farm A was designed and tested, to produce anywhere from 100-1,000 butterflies or pupae per week. The system consists of facilities, equipment and methods that will work for most any variety of butterfly and can be interchanged according to what the breeder desires to raise. Because they are used the most frequently for commercial purposes, the Monarch, Painted Lady and Black Swallowtail butterflies are used in this guide. Farm B is Nigel Venter's high-output facility, presented in section 3.

Prior to using the methods and equipment presented in this guide, our farm experienced devastating livestock losses and disease problems for the last three years that were a result of attempting to raise high numbers of livestock indoors. We now raise livestock "the natural way" in an outdoor setting, employing the sun, the breezes and even the rain to bring optimal health, feeding the larvae on hydrating food plant. While it requires some specific equipment and fine tuning, this method is quite simple and easy to put together. It is a matter of learning to work with nature instead of fighting against it! You will cultivate either butterflies or disease, one or the other! By incorporating natural conditions into our growing systems, we will raise the healthiest of livestock.

It has been such a good experience this past summer, working to perfect the "Butterfly Farm A" – that outputs a consistent volume of quality pupae and butterflies. While we worked to fine tune the various components and processes along the way, it was with the knowing that the farm would produce butterflies for us in our business, and also that we would be able to share this learning with other butterfly breeders to help eliminate disease problems and greatly improve their raising operations and earning potentials. When there is a problem, there is always something to learn. By learning, we improved and perfected the system. This learning is shared herein with you!

This guide also provides information about hydroponic milkweed production, and special tips to improve your sales so that you can fill more orders with all of these butterflies you'll be producing!

Thanks to the butterfly breeders willing to share their tips and allow them to be incorporated into Nigel's expertise and our experience in this guide. Special thanks to Nigel Venters for his gentle

guidance, patience with our endless questions, and generosity in always being willing to share everything he knows! He is an incredible friend and mentor.

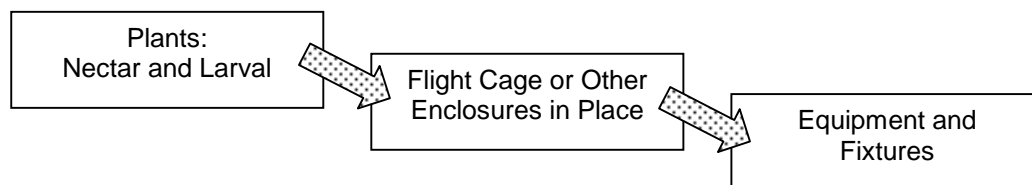
### **Farm A Overview - Production: Up to 1,000 Butterflies Per Week**

Commercial Butterfly Farm A will produce up to 1,000 pupae or butterflies per week, in outdoor raising facilities. This total output can include any combination of Monarchs, Painted Lady, Swallowtail or other butterflies, as desired. Section 2 provides detailed information on all components, equipment, supplies, labor, methods and processes for this level of production.

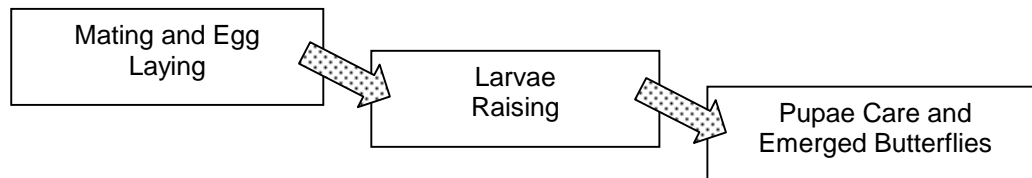
This size facility is broken out into three separate staging areas. The first section is for mating and egg laying. The second stage is care and feeding of larvae. Stage three is pupation and emergence of adult butterflies. Except for emergence of adult butterflies, all stages of livestock are raised outdoors in specially designed production units designed to work with nature instead of fighting against it.

All processes employ natural conditions to prevent disease and maintain both plant and larval health. With most of the livestock raising taking place outdoors, the sun's rays, fresh air, and natural conditions do the sterilizing work, instead of having to manually scrub out and sterilize mountains of containers every day and constantly worry about disease problems!

First, it is necessary to get your plants, enclosures and equipment in place:



Then, the livestock operation can be started up!

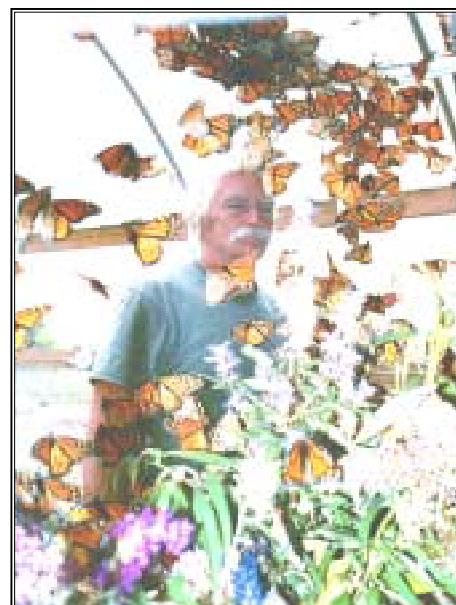


Section Two has all the details to create and maintain your healthy butterfly production systems! Let's GO!!

**Farm A**  
**Monarch Holding Cage in Greenhouse**



**Linda & Steve Rogers**  
**Timshell Farm 2002**



## 1.2 Introduction and Overview of Farm B – Nigel Venters

Section 3 contains all you need to know to plan a new butterfly farm from initial conception through to production at the weekly numbers you are aiming for. “Farm B” facilities, equipment and methods will produce between 1,000 butterflies a week, and up to as many as 10,000!



### High Production Facility – Up to 10,000 Butterflies Per Week

This advanced guide covers both the production of a single species (Monarchs are often a favourite choice for monoculture) and the more complex process of producing many different butterfly species at commercial quantities. The details are all based on my designs, production methods and techniques used in existing successful, high-output butterfly farms, although in my experience there are few existing farms running at these levels of efficiency and production control.

Land acreage, facilities, equipment, labour, production control and associated processes are all discussed. The set up costs, are based on USA prices and for those of you outside the USA the costs will have to be adjusted accordingly.

My production methods are designed to match nature as closely as possible. I have never liked breeding butterflies on artificial diets, or even on cut food plant in enclosed plastic boxes. In my experience, high-volume breeding in crowded conditions using plastic boxes always ends in total wipe outs! It's not a case of “Will it happen to me?” it's a case of “When will it happen to me?” No matter how much you sterilise, keeping all equipment and food in scrupulously clean conditions, disease will get you in the end ...You may well be successful for the first few seasons...which may cause you to invest heavily in your current production process...however, the result is nearly always the same...disaster!

Of course, under natural conditions...wild butterflies do suffer from disease, as most living creatures on earth do...but to a much lesser extent than captive butterflies. It's not very often you'll find diseased larvae in the wild, parasites and predation are the major natural checks by mother nature.

Disease only really becomes a problem in the wild when conditions prevail that are unsuitable for the caterpillars and favour the disease. Unfortunately in captivity, unnatural crowding, airless conditions, coupled with excessively humid or unnaturally dry conditions provide perfect conditions for disease...and the caterpillars become very susceptible to attack. This subject is discussed at length.

The market for your pupae is expanding at an incredible rate...the popularity of butterfly display houses has caused an ever-increasing number of new exhibits to open each year. There is no doubt that the public loves to escape for a few hours to spend time in a tropical wonderland...with lush vegetation and beautiful butterflies floating around in a natural environment. All butterflies, however beautiful, do not behave the same in display houses, and how to determine suitable species is discussed at length.

The information here is designed to work in both temperate and tropical climates...and obviously the further north or south you are from the equator shortens your production season. There are a number of options you can use to extend production in cooler climates and details are discussed. In the end, it is purely a financial decision based on the cost of heating and you will have to decide on the practicalities of continuing beyond the normal season depending on customer demand. Tropical

producers who can produce pupae year round for export to butterfly display houses in temperate regions need to be aware of how customer demand varies throughout the year.

Your market also depends on regulations imposed by the country you live in and the receiving country. All countries have their own regulations covering the transportation of butterflies between country, state or county lines. These controls vary enormously between countries and you should check on the legality and logistics of transportation to your customers thoroughly before start planning your production levels.

Finally, if you are about to embark on this expanding business opportunity...you also need to love butterflies to get the most out of your endeavours.... which to most breeders is a labour of love!



**Trapping butterflies in the rainforest in Costa Rica...note the Foreign Legion hat... essential as the local biting insect population couldn't believe their luck when I arrived!**



**Pentas lanceolata - a South African nectar plant that is essential in any flight house!**