

## Verti-Gro Workshops Purpose and Goals

The main purpose of a workshop is to familiarize you with current technology on hydroponic vegetables and plant production systems for greenhouses, shade houses and outdoors. The current technology for growing hydroponically includes vertical growing, lay-flat bags, upright bag culture, floating beds, nutrient film techniques, and rockwool cocofiber filled slabs. Many of these systems are on display at EPCOT along with over 4000 plants in the Verti-Gro system.

The purpose of this course is to direct you in the right path for planning, selecting and purchasing your greenhouse, shadehouse and growing system. The tour of commercial farm will give you an idea of how many ways there are to protect plants from the environment. Outdoor systems, shade houses, greenhouses and crop covers will be demonstrate.

Outdoor hydroponic systems are also designed and used based on the weather and the local demands for fruits and vegetables. In many cases it is advisable to have both a controlled environment greenhouse as well as an outdoor hydroponic system. For the first time in history we can offer a movable hydroponic system. For example you can grow strawberries and other crops outdoors in vertical towers during the late summer and fall and when it gets cold move the towers inside. You can grow cold sensitive plants indoors during the winter and move them outside when it warms up. This will give you a big jump on the competition.

The discussions on fertilizers will be more general but the understanding of injectors is critical. Drip hydroponics eliminates large holding tanks and lots of disease that are spread by re-circulating systems. However, some re-circulating systems and floating bed systems are now safer and more productive than ever. With the use of ozone and ultraviolet light water borne diseases can be controlled. However, these growing systems are very expensive and require a lot of maintenance. Soluble fertilizers are essential for injectors and a complete formula is essential for hydroponics. How to use fertilizers and additives and how to make changes based on plant tissue analysis are important factors when buying fertilizers and injectors.

Understanding pesticides and fungicides is important, not only to increase production and quality, but to stay within the law. New chemicals are being introduced everyday and are safer than ever before. Specific uses are different in each state and related to each crop as well as for indoor or outdoor use (which is different in regulations). Shade houses and side vented greenhouses are considered open structures and come under the same regulations as field use. Greenhouses, on the other hand, come under specific regulations. It is the duty of the grower to establish the use of each chemical for each crop and each area. Through the “*new chemistry*” we will see safer and more effective fungicides that are approved nationwide in most cases. These new chemicals are safer for consumers and the environment.

Alternative pest and disease control procedures are somewhat effective and basically depends on where you are located. Organic growing will not be a major part of this workshop because it is a lengthy and complicated subject. Future workshops will relate more specifically to organic growing and organic crops will be tested in the Verti-Gro system here in Summerfield this winter and spring. As a word of caution you cannot use the term “*Organically Grown*” unless you are certified organic.

We now use coarse coconut fiber mixed with perlite or used in many cases as a ready to use growing media. Many flower and plant growers are now using coconut fiber in the place of peat moss and Rockwool. The coconut fiber we use is from dependable sources in India and Sri Lanka. The salt index is low and the expansion rate is high. Our coconut fiber is **OMRI** approved.

Nutrition will not be a major topic of discussion either but it is an important one. Most of you are here for the purpose of producing healthier crops, for your own family or for sale to the public. Nutrition and nutrition labeling has become a major issue in recent years and these regulations will be increased and intensified in the future.

The **FDA** is currently working on ways to combat obesity. This is one of the major concerns of our society. Hydroponic and organic vegetable and fruit growers will have an effect on this problem now and especially in the future. As small growers we cannot expect to have a major impact as an individual but as a group we will impact the industry.

**Verti-Gro** has chosen to increase its activity in the home markets because that is where we reach the most people. We are also very active with school systems, which is verified by our picture on the cover of the **Florida Ag** in the Classroom brochure and our recent partnership with **NASA's** Space Ag in the classroom program which is a joint venture with the **USDA** and certain states where **NASA** facilities are located. Our display at **EPCOT** reaches adults and kids worldwide. We are fortunate to have been a partner with **EPCOT** for over 10 years now. Take a tour and see all types of hydroponic systems including the large display of **Verti-Gro** towers.

At **Verti-Gro** you will see many crops grown. Simply put, the **Verti-Gro** systems work. You only have to adapt to high density growing and all the parameters that effect high-density plant and vegetable growing, such as light and air movement. **Verti-Gro** has proven that you can get up to 8 times more production on certain crops in certain areas. However, it does not have to be this high in order to be practical and economical. Sometimes 4 times higher is more than sufficient. If you can get 4 times as much out of the same greenhouse by growing vertically you not only decrease your capital cost by 75%, but also there are other positive effects such as energy and water savings. Vertical growing, particularly in insulated containers, is considered an alternative replacement for many crops. With increased energy costs, increased labor costs, increased land costs and many other costs that the small farmer just can't absorb, vertical growing should be part of the overall design of a grower with diversified crops.

In the **Verti-Gro** workshop you are going to learn how to save space and energy and how to increase profits. **Verti-Gro** system and that the life expectancy is at least 5 years. A budget cost of an outdoor commercial and training **Verti-Gro** system is included in the workbook.

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