



Greenhouse

FARMING INSIGHTS

The market

Until the appearance of this new concept of greenhouse farming, most of the crop growth was done in the open fields, thus leaving the grower and his crops exposed to the fluctuations of nature. The weather conditions directly influenced the length and success of crop growth seasons.

The introduction of indoor crop growth in controlled climate conditions neutralizes the impact of weather hazards and, theoretically, enables year-round growth. This new approach marked the world's introduction to the concept of intensive agriculture. A significant concept change, greenhouse production has become a new, technology-based industry, involving new types of technical equipment capable of achieving predictable results and profits.

Kenya is currently experiencing a mushrooming of wooden greenhouses, some of which are not standard as per recommendations. Farmers need to be well informed before undertaking a greenhouse project.

The competitiveness in markets and the ever-increasing quality standards for growers have increased the importance of each small agricultural production

unit being issued with the right information. It is within these that I did this editorial article to you plus a module for modern greenhouse production systems. The notable advantages for modern structures are the ability to control crop growth, growth schedules and yield, almost regardless of external factors, while protecting the high quality of produce year-round and ensuring the farmer a stable flow of income.

How to choose the right structure, the right location, the right planning

Think about future growth when planning a greenhouse operation. Plan for the long term. Not thinking about the future can be a costly mistake if your operation expands and you have to tear down existing greenhouses to add these features later.

Develop a master plan that takes into consideration at least the next five to 10 years. Many greenhouse businesses will survive much longer, so it's good to consider growth for the next 10 years.

Determine your Farming business needs

First determine what your business will need to be successful. If you have been in business for some time, this may be easier. If you operate a new greenhouse business,

here is a list of questions you should be able to answer.

- What is the purpose of the business?
- What are you planning to grow?
- What size products are you going to produce?
- Who are your customers and how will you get product to them?
- How will you irrigate your crops?
- In what climate will your greenhouse be located?
- What type of soil conditions exist where the greenhouse will be built?
- What can you afford?
- Do you want to automate the greenhouse or operate it manually?

The purpose of the greenhouse

Will you be selling the produce wholesale or will you operate a retail business? The purpose of your business will determine things such as customer accessibility, seasonality and growing patterns. You may also want to have a more eye appealing building if it will be used as a retail garden centre. If you are building a structure for commercial production,

you will want to tailor it to the specific structure that offers flexibility to produce crops depending on your customers' future needs.

What are you planning to grow and what light levels, temperatures and humidity levels are needed? If airflow is important, will natural ventilation do the job?

Crop, customer choices

What size product are you planning to produce in the greenhouse? There are many choices and special needs for certain sizes of produce, eg cucumber, pepper etc.

Irrigation concerns

How do you plan to irrigate your crops? You may think you can connect your facility to local water and Sanitation Company and then just turn on the tap. You could find you need more water than the local authorities are willing to supply. You need to plan for this situation and make sure your operation is near an ample water supply.

Over the last few years there has been an increasing amount of regulation related to water and its use. You should calculate your water needs at least over the next five years and become familiar with the local water authorities.

Some growers in the Eastern & Central province have used



well water for 10-20 years. I hope the local authorities will not come in and put meters on the wells and started charging growers for water. Unfortunately, the well water may be at times too salty at places as Makindu.

Increasingly, growers are required to install retention ponds to collect water runoff from irrigation and rainwater. With the increasing cost of municipal

water supplies, it may be more economic to collect water runoff and to pump the water from a retention pond the master plan should include details on where a retention pond would be located and how much water it can hold.

Climate and codes

In what type of climate will your greenhouse be? The natural temperatures and light levels help determine

what crops are economical to grow. Be sure to consider severe weather conditions including the frequency of high winds and rainfall amount. What are the soil conditions where you plan to build? Is there adequate drainage at your site or will you need to install a drainage system? The soil can be very porous, allowing for easy drainage. Some clay soils tend to hold water, which can result in muddier conditions for longer periods. Be sure the land is graded for proper surface drainage and the soil is sufficiently porous for adequate subsurface drainage. Land that has a 0-to 5-percent grade will support drainage and reduce land prep or excavation costs.

Buying the "right" structure

When it comes to greenhouse structures, cheaper is not always better and is not really cheaper in some cases. You might be able to get by with a cheaper structure for the short term, but if you are considering a long-term plan for the greenhouse and its

value over many years, you might want to invest in a structure that is built to last.

There is more to the overall cost than just the price of the greenhouse itself. Some structures are more labor intensive to erect. When looking at structure costs, compare the total cost including construction costs. I recently encountered a greenhouse construction job where the grower constructed several wooden cheaper houses. They did not last for 3 years.

Module 2 continues in next publication on structure orientation, Temperature and humidity regulation.

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