Efficient Plant Production and Cultivation©

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HOW TO BE AN EFFICIENT GROWER

Ask yourself the following three questions:

1) What is my problem?
2) What is the reason behind this problem?
3) What are some manageable solutions?

REASONS FOR PROBLEMS IN GROWING PLANTS

- Lack of fertilizer — resulting in poor growth
- Flower bud abortion and no colour by plant growth regulators — thickening of leaves and mis-formed growth points.
- Young plants exposed to stress — lack of fertilizer and fungal attacks result in poor plants, which starve and die off. Poor plants have no resistance under bad growing circumstances.
- Chemical over-kill with systemic fungicides. Young plants which are sprayed too often, stress!
- Lack of light and/or sunburn, resulting in poor growth.
- Bad soil mixes will hamper good growth.
- Poor quality seeds — seeds with low vitality and poor germination will produce bad plants.
- Growing areas — different growing stages growing next to each other — what is the risk?
- Poor climate control — a good climate is essential for growth.

Looking at the above, optimal growing conditions are a must!

HOW TO CREATE OPTIMAL GROWING CONDITIONS

It is not that difficult if:

- You know all involved growing factors and are able to deal with them.
- The main growing factors are: climate, light, temperature, nutrition, water.
- But the biggest growing factor is YOU!!
- Stop questioning — decide and act.

Where to focus? Management, information, production planning, calculations, plant selection, or sales.

PLANNING AND GROWING

Planning means: Who does what and when and where.

Order in time	**Organize in time**
Seeds/young plants	Production planning
Soil	Greenhouse/shade house space
Pots and trays	Labour
Fertilizers + advice	Sales
Chemicals	Finance — cash flow
	Green advice

MAIN REASONS BEHIND THE PROBLEMS

Unknown or not adapted water quality	Controlable?
Unbalanced fertilizer program	Controlable?
Excessive use of chemicals	Controlable?
Overdose of growth retardants	Controlable?
Shortage of attention — management	Controlable?
Lack of knowledge	Controlable?
Extreme climatic conditions	---

MAIN CONTROLLABLE TOOLS TO AVOID ABOVE PROBLEMS

- Right genetic/varieties
- Fertilization
- Water quality
- Growth regulation
- Climate

WATERING

- Watering from the bottom — reduces algae and black flies.
  - Avoids water-transmitted leaf diseases.
  - Very equal distribution — no dry spots.
- Watering from above — is very precise action only done by experienced growers.
  - Use fine drops and high pressure.
  - Be careful on sunny days.
    - To correct dry patches.
    - To give small amounts.

GREENHOUSE CONDITIONS

- High volume of plant population gives good climate.
- Air pruning of roots — when trays are off the ground.
- Clean area to avoid diseases.

BASIC ACTIVITIES OF PRODUCING YOUNG PLANTS

- Use a good soil, clean water, good seed.
- Follow sowing instructions such as temperature, covering, time to germinate.
- Use climate controlled room, avoid re-watering or drying out during germination process.

- Check phase of germination regularly — at least daily, but better twice a day.
- After germination put trays in greenhouse at desired temperature and light.
- Cover trays with plastic or acryl cloth to maintain humidity.
- Start fertilization as soon as first real leaves appear.
- Avoid temperature and humidity shocks.
- Start hardening off as soon as possible.
- Control diseases and insects.

IN SUMMARY: Avoid stress, avoid growing problems.