This carbohydrate is normally used for growth in an intact growing plant. In a cutting growth has ceased, and this leads to carbohydrate and starch accumulation in the leaves. Such an accumulation may lead to the destruction of the chloroplasts which we observed as photobleaching.

We have shown with *Hibiscus* cuttings, that the best light conditions for rooting occurs at an irradiance level just above the light compensation point. At this light intensity, respiration almost equals photosynthesis and the build up of carbohydrates is very slow. This is the light condition that a shade plant normally likes best. As soon as the cutting starts to make roots and bud break is observed, the cutting again becomes a normal intact plant, and it will require those optimal environmental conditions for normal growth.

Production of Seedlings

Bent Petersen
Frisa Plants

A/S Frisa Plants is a producer of annual (summer) plants for gardens and pot plant nurseries. All production is based on seed propagation—this places seed quality, germination, and vitality at the center of production.

All seeds are germinated in flats with one seed placed in each cell. Therefore, it is of utmost importance that seed quality is the best. Fungal diseases occurring during germination may be caused by pathogens on the seed. To ensure the proper fungicide treatment after sowing, all seed lots are tested for the fungus/fungi they may be carrying. Immediately after sowing, the flats are treated with the fungicide required to control any fungal problems identified on the seeds. The flats are placed in a mist room for one day and then into the propagation room with or without light as needed. For most seeds the best germination is observed in the light (10 to 20 W m^2). The young seedlings are shaded the first few days after germination.

Kalanchoe blossfeldiana

Knud Jepsen
A/S Knud Jepsen Nursery

A/S Knud Jepsen Nursery was founded in 1963 and today consists of two production units with an overall yearly production of more than 10 million *Kalanchoe blossfeldiana*. Most production is for export with Germany being the major market. The latest addition to the nursery, 19,000 m^2 in size, is run by the most advanced greenhouse control equipment available today. Because of this, plants are only handled when they are propagated and at the time of sale.

A cornerstone of production is quality and research. Two full-time staff members are assigned to research. This ensures that production is utilizing the latest techniques and new cultivars are introduced regularly. We have our own plant

breeding program to ensure new cultivars for the market.

All propagation begins with stock plants (elite plants) which are kept in a section of the nursery where only the propagator is allowed. These plants are tested regularly for diseases and uniformity. Cuttings taken from these elite plants are used to propagate mother stock plants from which cuttings are taken to produce plants for sale. Cuttings are stuck into the final selling pots and placed on transportable tables that are automatically moved into the propagating area. Depending on the time of year, mist propagation or enclosed plastic is used. We try to keep a relative humidity of 60% to 70%.

We have tested DIF (difference in day and night temperature) only on a few plants. In *Exacum* and *Gerbera* the use of a high night temperature caused plants to become more compact.

Biological treatments are used to keep the soil free of insects. We use 0.75 liters of Vectobac to 4 m^3 of soil, and all water in supplemented with nematodes (500 million per 700 m^2).

Temperature—DIF

H.E. Kresten Jensen
Department of Floriculture, Research Centre for Horticulture, DK-5792 Årslev

INTRODUCTION

Until a few years ago, standard practice in the greenhouse industry was to keep the night temperature for potted plants set lower than the day temperature. The reasoning was, that photosynthesis at day should be promoted by a high temperature and respiration at night should be limited by a lower temperature. In addition, the free heat from the sun during daylight should he utilized and the energy consumption at night should be limited to reduce production cost. Plant height and elongation growth was not considered—compact growth was obtained by the use of chemical growth retardants.

The use of chemicals, i.e., growth retardants, is now questioned and in society there is a general wish that chemicals should be used to a lesser extent. In Germany and Sweden, Alar is prohibited and this may also happen in Denmark for this and other chemicals. For these reasons growers and researchers are looking for other means to control plant height.

Therefore, much interest was generated by experiments in the United States of America which showed that a higher night than day temperature reduced internode length and plant height when compared to the normal temperature programme (higher day than night temperature) (Erwin et al., 1988; Erwin et al., 1989). It was shown that the diurnal average temperature was not the decisive factor controlling elongation, but the difference between day and night temperature was important. This difference in day and night temperature was abbreviated to DIF, and the concept of DIF was defined as day temperature (DT) minus night temperature (NT) (DIF = *DT minus NT*). From this three terms arose: