

## BLIND PLANTS

Blind plants are plants which stop growing - they lose the growth tip (the meristem where multiplication of cells occurs). If this occurs in a seedling stage this can be attributed to genetic sensitivity and/or cultural circumstances (high temperature, light intensity, lamp type).

Blind plants which occur at a mature stage of the plant do so as a result of cultural conditions, the extent to which it occurs depends on the sensitivity of the variety (genetical).

### after emergence

An early blind plant can occur just above the cotyledons, or above the first leaf (rarely above the second). Often, but not always, these plants will make a new growth tip after a few days and continue to grow. However, this time lag causes unevenness in the crop and some plants may continue to grow abnormally, for example giving double heads etc. We recommend that plants which are certain blind plants should be removed: at pricking out, before delivery and replaced with spare plants during the early stages of the crop.

### after pricking out

Blind plants which occur after the pricking out are more the result of cultural practice. The roots of the seedlings are damaged when taken out of the tray and placed into the pot. Also the plant environment changes markedly. The plant needs much energy to renew its root system and this may be detrimental to the development of the other plant parts, especially the top of the plant. Under certain conditions (e.g. low light = low assimilate supply) this may cause the plant to become blind.

The recent trend for plantraisers to turn the plug upside down as it goes into the block also requires the plant to use more energy to recover and can therefore cause a higher occurrence of blind plants (especially in more sensitive varieties).

The measures to avoid blind plants occurring are similar to those to reduce jack plant occurrence; lower temperatures (in relation to light) and higher light level (artificial lighting).

### information about blind plants

The expected presence of blind plants in a seed lot in the propagation phase is printed on the seed sachet if this is a significant number, signalled in our germination trials. Take this into account when sowing and potting up (see also chapter on jack plants).

### After planting

Certain varieties will, under certain conditions, give blind plants (and other irregularities, e.g. a single or two leaves between trusses, etc.) between the 2nd and 4th trusses. Rondello, Revido and Recento are examples. In these varieties there is a genetical sensitivity to this phenomena. Cultural circumstances also play an important part in the occurrence of blind plants however.

In 1995 blind plants occurred in Holland in Revido, particularly in plants which were illuminated under artificial lighting for a longer period than normal.

Before spacing out the plants are in a very comfortable climate; the humidity is high, the floor is often heated and the plant development is very vegetative. At 23-25 days these plants are either delivered to the grower, or are spaced out to propagate them longer.

The spaced out plants continue to develop at a fast rate, helped by up to 16 hrs light, high humidity and a relatively high temperature etc.. In 1995 the light conditions were very poor when these plants were delivered to the grower and asked to root in. There was not enough energy for the development of new roots, developing truss and plant top all at the same time. The growth of the plant became disrupted, causing blind plants to occur between the 2nd and 4th truss (the initiation of the truss takes place up to 3 weeks before it is visible]. In the last stages of the propagation it may be wiser to lower the amount of artificial light (particularly for varieties known to be sensitive), for example gradually down to 8-10 hrs per day, especially if the plants are older when leaving the propagation area. Disorders of blind plants are generally a result of too high temperatures during the propagation.

Measures to prevent their occurrence are:

- lower temperatures in the last phase of the propagation before the plants are taken to the grower and
- keep slightly lower temperatures once the plants are in the greenhouse (see general information of propagation/young plant development).

By continuing the plant on a sideshoot the culture can be continued, usually without serious consequences for the production level.

The lesser form of this disorder, the occurrence of a single, or two leaves between the trusses also has little or no consequence for the total production. It does cause some degree of unequalness in the crop, but this is only temporary and after a few trusses no permanent effect can be seen.