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The story of growth reduction in Kalanchoe

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The best chemical to use for growth reduction in Kalanchoe is daminozide, better known by tradenames as Alar and B-9, because of its ability to accumulate in the plant. For many years growers used daminozide, when we look back, too much, because the knowledge wasn't there in regards to application timing. A couple of year's research at Fides and the Horticulture Research Station (PPO) in Aalsmeer caused a shockwave in approaching the culture on growth retarding usage.

It became clear that there are two important, or better said critical periods, for application of B-9. The first period is at the end of the 2nd and 3rd week of the Long Day. This is meant to control the growth and development of the plant in total. In this period we don't talk about a normal spraying treatment, but about a misty spraying treatment. Practically it means that in comparison with spraying half the amount of fluid is used. Target for applications in this period is to slow down the growth of the headshoot of the cutting. This results in the stimulation of the side shoots, which are not effected by this misty treatment. In this way a stretchy start of the culture is avoided, and the vegetative base of the plant will be controlled and ready for short day treatment with compact growth and the good development of sideshoots.

The second critical period is in the Short Day, in the so-called induction period, the time where the shoots including the umbel are formed. This period can be found between the 3rd and the 6<sup>th</sup> week of the Short Day, depending on the time of the year, and more important the variety. The application is normal spraying. What was unknown, until a couple of years ago, is that during this period the development of the plant for the rest of the culture is determined. Another new element in culture that was recently discovered is that stretching of the flowershoots is for a large part caused by humidity, not by temperature (of course these two have a strong relation, but in the past we blamed temperature for stretching, while it was the humidity).

Practically this means that when the climatical conditions (humidity) during the induction period are fluctuating strongly and no treatments of growthretardents are given, later on in the culture stretching will occur. Spraying then will not help so much anymore, so in a way it's a waste of time and money. So acting with treatments in the induction period is the rule.

This does not mean that in the period between these critical periods no treatments are necessary. If a crop needs it, just do it. Also, the last part of the culture might need some extra treatments, but do this only acting out of necessity. There is also an option of using daminozide mixed with Cycocel. This is in Europe a common practice and purely economical.

Once the above story was learned there was a major change in approach to Kalanchoe culture. The findings also resulted in a reduction of around 40% in the use of retardents. The average amount of chemical used in a crop the use was nearly halved. This resulted in another benefit. Every treatment generally means a half a week delay in the croptime. In average they decreased the croptime by 2, sometimes 3 weeks (depending on variety and time a the year) leading to a 10-20% increase in production cost. An estimation for the Northern American

market is that a decrease of 20% in use of retardents can be reached, which means at least 5% more production.