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The story of Water or Water Management in Kalanchoe

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What about water in the culture of Kalanchoe? Just give them water once in a while. Wrong. Giving water means more than just giving water. I estimate that primarily 75% of all troubles in Kalanchoe are related to water. All the other items, like temperature, humidity, spraying, CO² etc. are secondary or circumstantial. So, what then is too wet or too dry? When does the plant need water? What is the best time? To answer these questions, you need water management.

In the first place, and this is essential for the culture of Kalanchoe to know, it is important to realize that the Kalanchoe is from origin a desert-like plant. This implicates that water is necessary for the plant, but the more water, the more the plant drift away from its' origin. Next to the knowledge just mentioned the choice of the soil is equally important. Soil that dries out too quickly or a soil that stays too wet for a long time can result in a sub-par crop and is therefore asking for trouble.

So, what is important to know if we talk about water management of Kalanchoe culture?

First we take a look at the long day period, which contains the rooting period.

The rooting period generally refers to the first two weeks after sticking a cutting. Because of the Kalanchoe's origin this is perhaps the most crucial period. In this period the soil must be moisty on the dry side, because the plant must be forced to create a strong root system. For Kalanchoe this means the more water the weaker the root system.

The best way to operate is: fill the pots with soil, water the pots and stick the cuttings. Wait until the top layer of soil is drying out, check out the moisture in the pot and irrigate lightly, a quick shower of water is usually more than enough. This timing of watering is of course dependant on the type of soil, the climate conditions, the variety (speed of rooting) etc.

The cutting in this period must be wilting, that's the best sign for good rooting.

What happens if the watering in this period is done wrong?

In case of keeping it too dry, there is a chance that the soil cannot get moist/wet anymore, which destroys the roots and creates all kind of troubles. The crop will suffer on uniformity and will be extremely sensitive to disease.

The other problem however is keeping the culture too wet. The more water is used the more the plant builds a system of main-roots and not a system of main and hairy roots. Hairy roots are important for taking up the nutrients in the plant and if the plant does not make them, or if too much water destroys them, this leads to many problems. Most of the time this is seen in plants that are never wilting. This is often a misleading sign that the cutting is growing fine. Why is this not good? You have to realize that this cutting has created what can be called a 'water' root system.

The biggest problem is that not enough nutrients can be brought into the plant, which means that the shoots are not activated (This is especially later in culture when the bottom and side shoots are missing). Too much water will also cause the young plant to start stretching. This stretching can be start of creating a plant on a stem, with shoots only in the top half of the plant. During the same time a plant is created that looks very healthy, but is in fact not so healthy, but too soft and weak, which increases the chances for diseases, especially molds like Phytophthora.

After the rooting period there is still a period of Long Days to go, less crucial than the previous period, but it doesn't mean the rules can be forgotten. The best way of watering from this moment on is by using small quantities on a regular basis. This will differ from grower to grower because it depends on the situation on the spot, like climatical conditions (summer/winter), irrigation system, growing system etc.

In this period nutrients are also given every time water is given. Mostly the EC in this period is still low. If too much water is given it means that it will be difficult for the plant to take up the nutrients, which creates problems mentioned earlier. This problem of overwatering results when the (hairy) roots are destroyed (drowned) by too much water.

Keeping the soil too dry also creates problems. The nutrients can then destroy the roots (burning them) and create embolisms in the fluid-stream of the plant.

Even worse than a dry or wet situation is a combination of both, fluctuations to the extremes. The pots are very wet, then they are dried out too far, then too wet again. This can make the problems mentioned above heavier, but particularly the chance for aggressive fungi increases i.e. Rhizoctonia.

During the rest of the culture (the short day) the above-mentioned watering practices remain of importance. The water level in the plant must at all times be as balanced as possible. Too much fluctuation time and time again causes problems.

One of the most common mistakes is made when the seasons are changing. For instance coming out of the winter into mild spring conditions with sunshine and higher temperatures. The complete plant can wilt quite easily at this point. This is because the plant is responding directly to the new situation, while the root system still thinks it's the old. Then there is a tendency to give extra water immediately, which mostly means destruction of the root system or at least a part of it. That means an open invitation for diseases (molds, bacteria) or at least problems in uniformity, developing of shoots, leaf problems etc.

So far the story was about the water situation in the pot, but water can also create problems on the plant itself. To start with, the best growing situation of Kalanchoe is to stop watering overhead as soon as they enter the short day period. In the case of watering overhead it is not only the amount of water that causes the problems, but just the presence of water on the plant. Problems including flower damage, burning of the leaves or leafspots, malformed buds, and disturbed development of shoots are real options in this case. Don't forget that with every spray application (chemicals, growth retardants) water is also involved. The circumstances of spraying (time of day, rate, etc..) are very important to avoid the problems mentioned above.