

Light: Data carrier and switch part 2

In the last article we got to know light as a carrier of information. The brightness of the light determined the height. A lot of light means small and thickset plants, less light means long and thin plants. The quality of the light, the presence of all light colors, decides about a good photosynthesis.

To get fat buds it's necessary to guarantee a night's rest of 12 hours for the pants during the first 12 days of the blooming period. This cannot be disturbed - not for one minute - because only an uninterrupted dark period of at least 12 hours, the turning of growing to blooming is made.

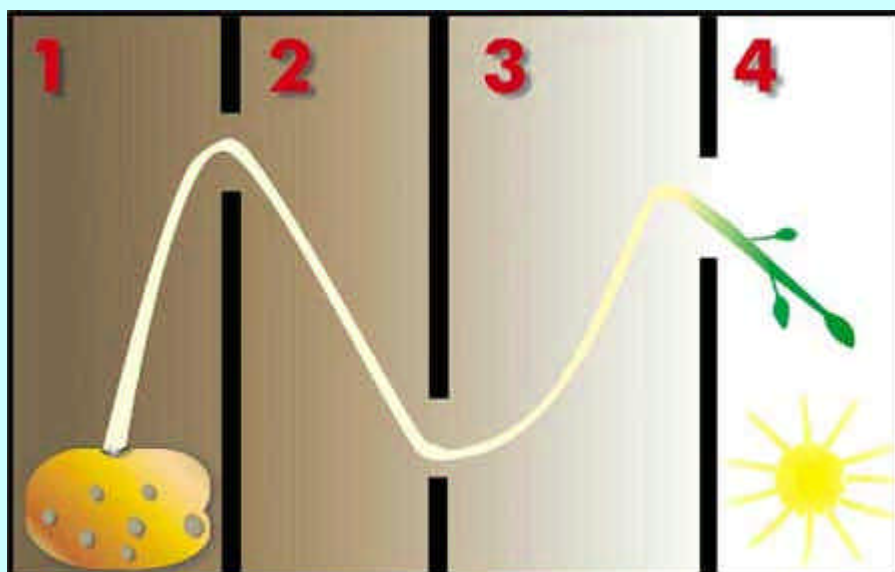
The plant grows into the direction of the light.



Light determines the growing directions of the plants. If the light comes from the right or the left and not from above, the plant also grows in this direction. The plants dispose of measuring constructions for light, that compare the incidence of light on a part of the leaf to the other parts of the leaves. This happens when there is a lot of light, and also when there is less light, so it doesn't depend on lumen.

The light gives information to the growing points. We know that especially blue light gives the impulse for the direction of growth. Blue light is, as we could read in the last Highlife, rich of energy and fast (short wavelength). This gives blue light the possibility to penetrate the substrate (at least a few light parts) and gives the roots information about the direction of growth too.

On my elementary school we once did an experiment with a potato. We put it in a box that was lightproof and was divided from the external world by two separation walls. In every wall was made a hole. If you waited for a while, the white sprout of the potato was growing right to the light, in spite of the fact that it was dark inside the box. When the light is really reached, the parts of the plant turn green and photosynthesis starts. The whole growth is not operated by photosynthesis, but by another organ of the plant, that is able to see a few photons (light parts) and react on it. The potato has a benefit, because it has so much energy (starch = sugars), so the long way through the box is possible.



Experiment: A potato is placed in the back corner of a box that is separated from the external world by three separation walls. In the walls are holes. For our eyes, room 2 is already dark and room 1 (in

which the potato is) is seen no light at all. But the potato is capable to choose the quickest way out, without 'any doubts'. Only the fact that it can grow a sprout in spite of the darkness proves that it can see the light. Growing points (like the first point of the sprout) have 'an eye' for light flashes that we cannot see. Seedlings in the ground find their way to the light world in the same way.

Light - switch of the bloom

All blooming plants can be divided into three groups:

1. The first group contains plants that start to bloom independently of the length of the day and the night.
2. The second group contains plants that start to bloom as a certain length of day is exceeded, so when there are long days and short nights.
3. The third group contains plants that start to bloom if a certain length of day is underspend. In this group hemp plants belong.

Hemp starts to bloom if light shines no longer than 12 hours on the plants. Actually the length of the night is more important than the length of the day!

The night have to last at least 12 hours, without interruption, otherwise the plant keeps on growing. That is the most important fact about growing hemp.

As we could read in Highlife before, at a certain rhythm of the day and night the legendary blooming hormone florigen is made. This hormone, that has never been isolated (so literally it's unknown), is turned on and off by light. At some plants it's done by a long night, like the cannabis variety.

Everybody that grows hemp inside knows that a vegetative, so growing period, means that the bulbs are on 18 hours or longer, and are turned of for 6 hours. Under these conditions, the plant only makes leaves and stems, no buds. Also when you increase the strength of the light, the plants keep growing. Only if the plants get 12 hours rest in the night, the hemp plant begins to make blooming tissue in the axils. These little blooming points are called embryonic tissue, because it's not a real bud yet. These period of making buds is very sensitive for interruptions of the light than the real blooming period. From switching the light until the making of the first (embryonic) blooming tissue, takes only a few days.

When a mistake is made in the beginning of the blooming period (1.-12. day to switching to 12 hours of light) is made with the light, the bloom can be ruined.

Interruptions in the daytime, like a power failure or bulbs that break, are not as disastrous. The plants will stop developing and the bloom will be later, but the biological clock will not be disturbed.

But interruptions of the night can be disastrous. These interruptions can be very short but will have big consequences. Depending on the color of the light the influence can be bigger. When the plant is disturbed at night with a light red color, it takes only a minute to confuse the plant and turns off the switch to bloom.

Research found out that especially disturbances in the middle of the night, after 6 hours of darkness, have the worst consequences.

So you certainly mustn't check the room of the plants the first ten or twelve days if the light is out, or get something out of the room. If it's really necessary, do it, shortly after the bulbs went out, or before they go on again. Also the light that shines under a door can be damaging. If the plants get no rest at night, it can happen that they make little buds, or no buds at all. After this, all can go well, but the crop will really be lousy. Mistakes in connection with the disturbance of light in this period (beginning of the blooming period) cannot be put right any more.

Later on in the blooming period, when the buds are already made, a disturbed night rest will affect the crop, but the plants will keep blooming. The turning from growth to bloom is already successfully done.

Outside plants, that have a full moon at the beginning of the blooming period, need a lot more time to develop the blooming points than plants that do the same process at dark, moonless nights.

The hemp plant has the best conditions for light at a period of 10 hours of light and 14 hours of darkness.

But in spite of this we almost always choose for 12 hours of light and 12 hours of darkness. Why? The answer is: the production of resins - and that's where it's all about - depends on the amount of light. The more light, the more resin. At 12 hours of light, we double the amount of production of resin, than if we use 10 hours of light.

Transport and logistics in the plants
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Why does a hemp plant make resin and how can we support that?
This will be a part of my article next time.