



by Karel:  
Gardener  
& Grower

# “The introduction of rockwool made growing a lot more professional”



the very beginning. After studying at the HAS in Den Bosch I took over the greenhouses from my father. That is how I was able to combine my father's knowledge with what I had learned while studying.

## CANNA HYDRO for years now

I've been in greenhouses all my life. I live in the North of the Netherlands and helped my father by pinching out the peppers in the greenhouses.

I already knew then that I would become a market gardener later. I find it great to see small cuttings grow into large plants and finally harvest beautiful, red peppers. I am Karel (Carl) van de Pas, a grower from

## Roots

Because CANNA's HYDRO feeding is perfectly balanced for short cycle plants and contains everything that's needed for growing good plants with superb fruits, I only use CANNA Hydro Vega & Flores. As soon as the roots are well developed and the first small flowers are visible, I reduce the lighting to 12 hours per day. Then I change to CANNA Hydro Flores and keep an eye on the pH. I make sure it stays around 5.8 so I can take immediate action when adjustments are needed.

## Knowledge is power

I always use PK 13/14 during the flowering period. My experience has shown me that PK 13/14 is most effective when the pH drops in the drainage water. I see the results after a week: large flowers form over the whole plant. This is when I decrease the feeding slowly to a lower EC in the next three weeks. This does depend on the variety though!



## A little extra...

You can well imagine that things have changed now. The introduction of rockwool in those days made growing a lot more professional since it doesn't leave anything to chance. I have everything under control and that gives me a lot of satisfaction. For the last two years, I have been growing both personal and commercial crops.

## Patience, patience, patience

After these three weeks the tuffest time is when I have to wait. For someone who likes to be in control of everything it's difficult to keep my distance. Of course I keep an eye on the plants to make sure that they're still alright, but I don't give them any more feeding in the last week. This ensures that there's no feeding left in the fruits.

## From the dunes

Where I live in the Netherlands, the water comes from the dunes and has an EC of 1.1 which is quite high. After discussing this with CANNA I could choose to either mix the water half/half with osmotic water, or to push the EC up to 2.7 and give a lot more feeding (but less often). Doing this rinses the salts out of the rockwool more easily. It's important that the EC doesn't rise too much in the slabs.

## Good quality

After having taken such good care of the plants for all those weeks, I find it great to be able to marvel at the result. It's very important for me to be able to guarantee good quality as it is also for personal use! As they say at CANNA: quality proves itself!



## Cuttings

I always make my cuttings from the same amazing mother plant. Because of this I know that they are good quality cuttings that will grow into fine plants. Of course, it is very important that the cuttings come from a strong mother plant. During the first week I make sure that the plants receive a lot of light. They really need 18 hours a day at this time to become strong.



“My experience has shown me that PK 13/14 is most effective when the pH in the drainage water drops”



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	Cultivation		Light / Day		Hydro Vega		Hydro Flores		RHIZOTONIC		CANNAZYM		CANNABOOST		PK 13/14		EC +		EC Total	
	period In weeks	In hours	ml A/ 10 litres	ml B/ 10 litres	ml A/ 10 litres	ml B/ 10 litres	ml/ 10 litres	ml/ 10 litres	ml/ 10 litres	ml/ 10 litres	ml/ 10 litres	ml/ 10 litres	ml/ 10 litres	ml/ 10 litres	in mS/cm	in mS/cm	in mS/cm	in mS/cm		
<b>VEGETATIVE PHASE</b>																				
<b>Start / rooting (3 –5 days)</b> Make the substrate wet	<1	18	10-20	-	40	-	-	-	-	-	-	-	-	-	0.7-1.1	0.7-1.1	-	-	1.1-1.5	
<b>Vegetative phase I</b> Plants develop in volume	0-3 <sup>1</sup>	18	15-25	-	20	-	25	-	25	-	-	-	-	0.9-1.3	0.9-1.3	-	-	1.3-1.7		
<b>Vegetative phase II</b> – Up to growth stagnation after fructification or appearance of the formation of flowers	2-4 <sup>2</sup>	12	20-30	-	20	-	25	20 <sup>5</sup>	25	20 <sup>5</sup>	-	-	-	1.2-1.6	1.2-1.6	-	-	1.6-2.0		
<b>GENERATIVE PHASE</b>																				
<b>Generative Period I</b> – Flowers or fruits develop in length. Growth in height achieved	2-3	12	-	25-35	5	25	25	20-40	25	20-40	-	-	-	1.4-1.8	1.4-1.8	-	-	1.8-2.2		
<b>Generative period II</b> – Development of the volume (breadth) of flowers or fruit	1	12	-	25-35	5	25	25	20-40	25	20-40	15	-	-	1.5-1.9	1.5-1.9	-	-	1.9-2.3		
<b>Generative Period III</b> – Development of the mass (weight) of flowers or fruit	2-3	12	-	15-25	5	25	25	20-40	25	20-40	-	-	-	1.0-1.4	1.0-1.4	-	-	1.4-1.8		
<b>Generative Period IV</b> – Flowers or fruit ripening process	1-2	10-12 <sup>3</sup>	-	-	-	-	25-50 <sup>4</sup>	20-40	25	20-40	-	-	-	0.0	0.0	-	-	0.4		

GROWTH

FLOWERING

1. This period varies depending on the species and number of plants per m2. Mother plants remain in this phase until the end (6 – 12 months).  
 2. The changeover from 18 to 12 hours varies depending on the variety. The rule of thumb is to change after 2 weeks.  
 3. Reduce hours of light if ripening goes too fast. Watch out for increasing Relative Humidity  
 4. Double CANNAZYM dosage to 50 ml/10 litres, if substrate is reused.  
 5. 20 ml/ 10 litres standard. Increase to a maximum of 40 ml/10 litres for extra flowering power

EC: EC+ value is based in mS/cm when EC water = 0.0 by 25°C, pH 6.0  
 Add the EC of the tap water that is used to the recommended EC!  
 The EC total in the example is with tap water with an EC of 0.4  
 pH: Recommended pH is between 5.2 and 6.2  
 Adding pH- can increase EC.  
 Use pH- grow in the vegetative phase to lower the pH.  
 Use pH- bloom in the generative phase to lower the pH.

The guidelines in the table aren't an iron law, but can help novice growers to develop a sophisticated fertilisation strategy. The optimum fertilisation strategy is further determined by factors such as: temperature, humidity, plant species, root volume, moisture percentage in substrate, water dosage strategy, etc.

Make your personal feeding growschedule at [www.canna.com](http://www.canna.com)