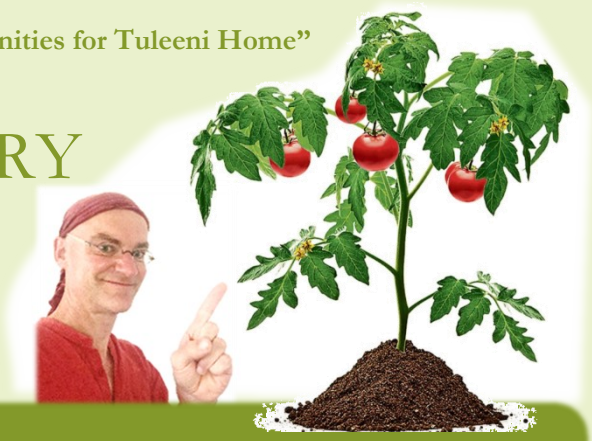
MY TOMATOES DIARY

BY THORALF KAUTZSCH



I HAVE NEVER TRIED TO GROW TOMATOES. IN GENERAL, MY PREVIOUS ATTEMPTS TO GROW SOMETHING EDIBLE WERE RATHER UNSUCCESSFUL.

BUT I'M CRAZY ABOUT NUMBERS AND STATISTICS. AS A PHYSICIST AND INVENTOR, I VALUE THEM VERY MUCH. WHEN I READ THAT, ON AVERAGE, 110 LITERS OF WATER ARE USED TO GROW ONE KILOGRAM OF TOMATOES WORLDWIDE, I WANT TO KNOW EXACTLY!

HERE IS MY ATTEMPT: I GROW TOMATOES AND TRY TO USE AT MOST 90 LITERS PER KILOGRAM.

HERE YOU CAN READ HOW IT WENT...

DAY 1:

On April 18, I went to the garden center and bought the cheapest pack of tomato seeds: 50 seeds for 1.69 euros, variety "Hoffmann's Rentita" - no idea whether this variety is really good.

Then came planting soil, which was still lying around here in one-liter pots and one seed in each pot - ten pots were prepared and the experiment could begin! The weather was cold - around zero degrees Celsius - and I put the pots at a room window.

DAY 11:

Ten days passed and nothing much happened. I gave daily only 5-10ml of water with a spray bottle on each seed. But on the 11th day in some pots saw two small cotyledons!

Now it was exciting for me to wait and see how many of the 10 seeds really sprout!

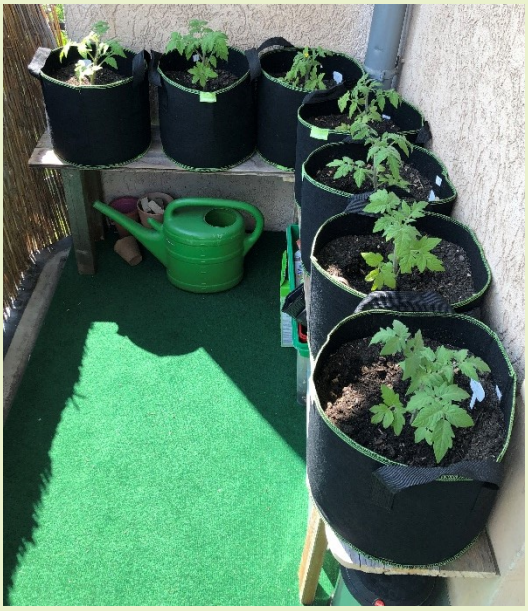
DAY 30:

All ten seeds really sprouted!!!

In the meantime, the cotyledons had become real small plants. They were only 5cm tall, but they grew every day. I now gave them about 30ml of water per plant every day.

DAY 54:

It's June 10 - not even two months have passed. The weather has also changed completely. In April it was still temperatures around the freezing point - now we have twenty degrees celsius! Until this day, each plant has received a total of about 1.4 liters of water.



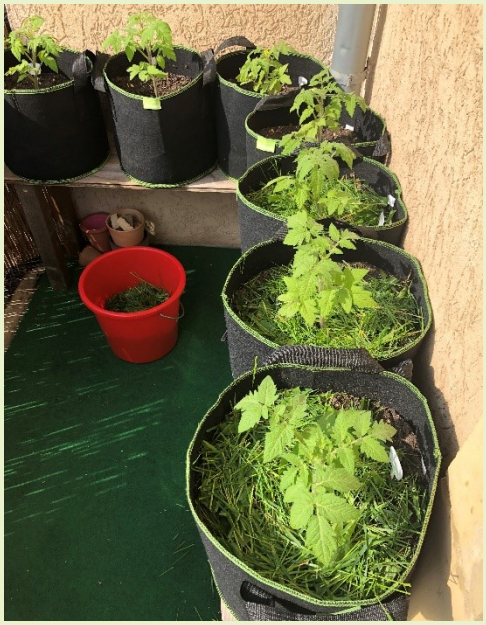
Now it's time to put them in large containers. I bought 10 cheap containers made of felt fabric, each 20 liters in size. The soil I got from our own compost, where we bring our kitchen waste. Our balcony has a roof and the plants stay dry even when it rains. So I can well control the amount of water needed.

Day 56:

For two days I put 0.8 liters of water in each container.

I decided to add organic fertilizer to five of the ten containers. The most important ingredient is guano - bird poop. The other five containers only get some coffee grounds from time to time, which is waste from the kitchen.

I have to leave Dresden for five days. Before I leave, I collect grass from the meadow and cover the soil in the containers with it. This kind of mulching helps keep the soil from drying out.



Day 61:

Although we had sunny 25 to 30 degrees celsius during the week and the plants did not get any water for five days, I found them in good condition.

Today, June 17, there are only a few days until the summer solstice, it is getting hotter and hotter. In Dresden, the temperatures are now higher than in Moshi.

Day 68:

I have now supplied each plant with 0.8 liters of water daily. Sometimes the water runs out of the bottom of the containers. This waste I will soon fix and collect the water with the help of a plastic foil again.

Now the plants are growing quite fast. There are up to ten flowers on all plants. There is also a tomato on each of three plants.

In July I will not be in Dresden for a longer time. I will build a small irrigation system.

Day 70:

On day 68 I did not water the plants. Yesterday it was 300ml and today 500ml. **Up to and including day 70 (June 26th), each plant had received 10.2l of water.**

Day 80:

From day 78 on (July 4th), I increased daily water amount from 500ml to 1000ml. The tomatoes had to travel to Burg (a small village in east Germany) since I have to work here for two weeks. It is very sunny all the day, max. temperatures around 30°C. On each plant now grow small tomatoes. **Up to and including day 80 (July 6th), each plant had received 16.7l of water. I have just brought eight plants to Burg, as there was no more room in the car - from now on all statistics will refer to these eight plants, even when we are back in Dresden.**

Day 90:

Today (July 16th) I tied the plants to bamboo sticks. Each plant has between 10 and 20 green tomatoes, which are getting heavier every day.

Day 100:

Now (July 26th), every plant is full of green tomatoes – around 20 to 30 per plant. The weather is a bit colder, around 20°C. One tomato is nearly red and will be harvested soon – the first one! **Up to and including day 100 (July 26th), each plant had received 35l of water** (a few days they had half a litre, only).

Day 108:

I reduced irrigation to half a liter. Three days ago, we harvested the first tomato (100g), today we could eat the second (65g). All other tomatoes are green.

Day 118:

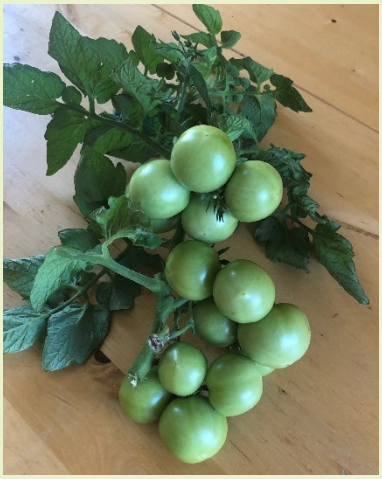
Today (August 13th), there is another red tomatoe ready, others turn their colour slowly. Last week I reduced irrigation, for a few days I stopped it since temperatures were moderate and it was cloudy. **Up to today, each plant had 42l of water.** Unfortunately, one branch of a plant broke – full of green tomatoes (820g). That was the plant with the first tomatoe I harvested a while ago. I watched various teaching videos, showing, that tomatoes should be stored for a while and they turn red after a few weeks. I will try that.

Day 125:

What a sight! There are red tomatoes on all the plants!!! I have been away for a week. The tomatoes have only received 3 litres of water per plant in this week - so a total of 45 litres until today (August 20th).

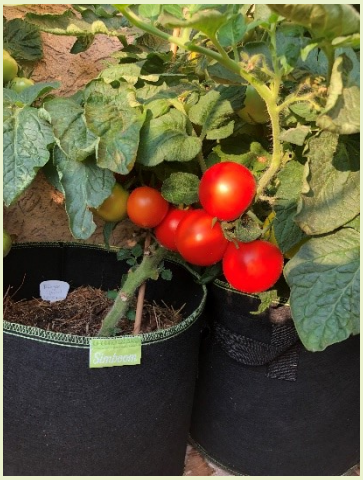
Even the tomatoes whose branch has broken off are starting to turn red. That's 740g of new tomato from a plant with about half a kilogram of tomatoes still hanging on. Apparently, it is no problem to leave green tomatoes, which are somewhat poisonous, until they are red and delicious. So, from the one plant with the broken branch, more than a kilogram of tomatoes can be harvested today - with a total water consumption of 45 litres.

That gives a first answer to the initial question of my experiment: 45 litres of water are sufficient to produce one kilogram of tomatoes! At the end, I needed only 33 litres for a kilogram.



Broken branch with green tomatoes …

a week later, they start to turn red.



Many red tomatoes on every plant!

Day 133:

Now, end of August (August 28th), days are colder – below 20°C. Four days ago I was able to harvest just under 5kg of tomatoes, today another 1.1kg. **Together with the previously harvested tomatoes, the total is now 6.9kg and 125 tomatoes from eight plants - and that on an area of only one square metre!**

In the last few days I have only watered a little. Until today, each plant has received 48 litres of water. This brings us to an average of about 55 litres of water per kilogram of harvested tomatoes. This value will still change a little, as there are still some tomatoes hanging on the plants.

Day 137:

Today I harvested nearly one kilogram of tomatoes again. Now we have 143 Tomatoes (7.844kg) from eight plants on one square meter. They got 49.5 litres of water per plant.

Day 178:

Today is October 12th. During the last few weeks I have been harvesting tomatoes again and again. By now there are over 11kg (exactly 11320g and 226 Tomatoes) from a single square metre of space on my balcony. It is interesting that the yield from the four unfertilised tomato plants is just as high as from the four fertilised plants. Perhaps this is due to the good compost I used. There are still more than 50 tomatoes hanging on the eight plants. As of now, however, the temperatures drop below 10°C and below 5°C at night. Soon it will be necessary to harvest everything and let the green tomatoes ripen so that they turn red later.

Day 178:

Today is October 30th. I harvested all 122 remaining tomatoes. Many of them were smaller than average, all of them were green. But that is ok – so, they will turn red within next few weeks. That means, even in December I will have tomatoes from my own balcony. **After all, I harvested 16 kilograms from a single square meter.**

From seed to harvest …and cumulated water consumption.