

# Five Days in a Greenhouse: Intensive Organic Farming

by Claire Chassot

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I arrived in the morning.

I don't remember what time it was, but I was on time.

I parked my car next to the others, entered the shed, changed in the women's locker room, left my things on the bench, passed the gate where soles and hands are disinfected, walked past the metallic and repetitive noise of the packaging line, the shrill alarms of the robots pulling carts filled with crates of empty trays. Then I entered the greenhouse.

Six hectares.

Rows of tomatoes everywhere. Plants that stretch to the top of the greenhouse, soilless.

Plants that seem to have no visible roots.

The soil is covered in plastic, the tomatoes float one metre above it. They grow on thick, gnarled vines, dark-green and cream-streaked. Monstrous plants supported by metal hooks one metre off the ground. Behind these piles of horizontal vines, more bundles of horizontal vines.

320,000 feet, but where are they anchored? Where are their roots?

What makes this jungle of tomato plants grow?

Each plant rises upright, wrapped around a thin rope, its head so close to the glass and the sun that workers have to watch them daily to turn them over when they are in danger of burning. Up there, the workers wear sun hats. Below, I see only the bare vines, hanging, their roots camouflaged.

I stay still, in the middle of the central aisle, my pupils constricted by the light, trying to make sense of the sounds and movements around me. I don't know if the heat is knocking me out or if the rhythm in this space has been slowed down.

Finally, the foreman calls out to me. He tells me how to wear my gloves.

How to disinfect the clippers every 20 m. How to cut the leaves so the sun can reach the fruit.

I enter one of the lines. Suddenly, silence. No one is visible anymore, except for the plants. I cut.

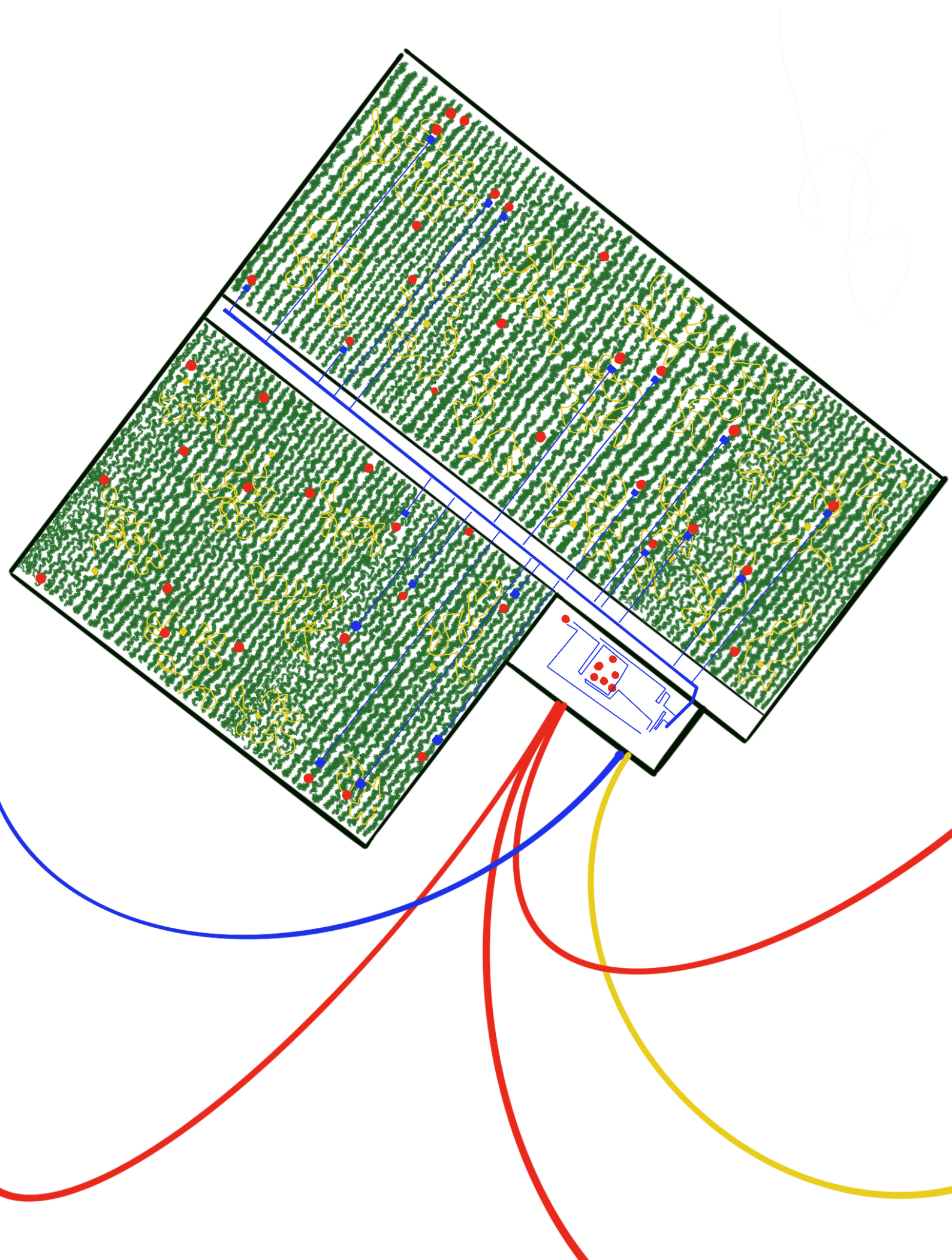
150 metres to the right, 150 to the left. You have to let the leaves fall on the ground, not on the vines.

It is hot, humid, quiet. I forget to drink. I didn't bring a water bottle. I'm hypnotized by my own gestures, green everywhere, the heat, the silence.

Each worker is alone in their aisle. Each worker has 150 metres to themselves, with a screen of greenery on each side. If I work, I will only see tomato plants and bumblebees. By the end of the first day, I have talked to one worker only. She worried about my lack of water and the risk of dehydration. If I want to get anything out of this week other than the awareness of my lack of experience, I need to ask questions. To ask questions, I need to accompany other workers, not become one.

On the second day, I accompany the person in charge of bio control. On the third, the one in charge of workers. On the fourth, I pick tomatoes for a day. On the last day, I film, photograph, observe. By the end of the week, I have a number of movements, gestures and links in mind that all revolve around these 320,000 tomato plants and their fruit production. The greenhouse is a vortex where everything is coordinated to produce a quarter of all cherry tomatoes in Switzerland.

In November and December, the greenhouse is emptied, cleaned, disinfected and prepared for next year's crops.



In January the tomato plants are planted in substrate. The harvest starts soon after. Each passing month yields more tomatoes, as the plants grow throughout their ten-month existence. At the end of the season, the longest stems will be thirteen metres. Their growth is an imperceptible movement to the eye. The plants gradually fill the space, the entire height, the entire length.

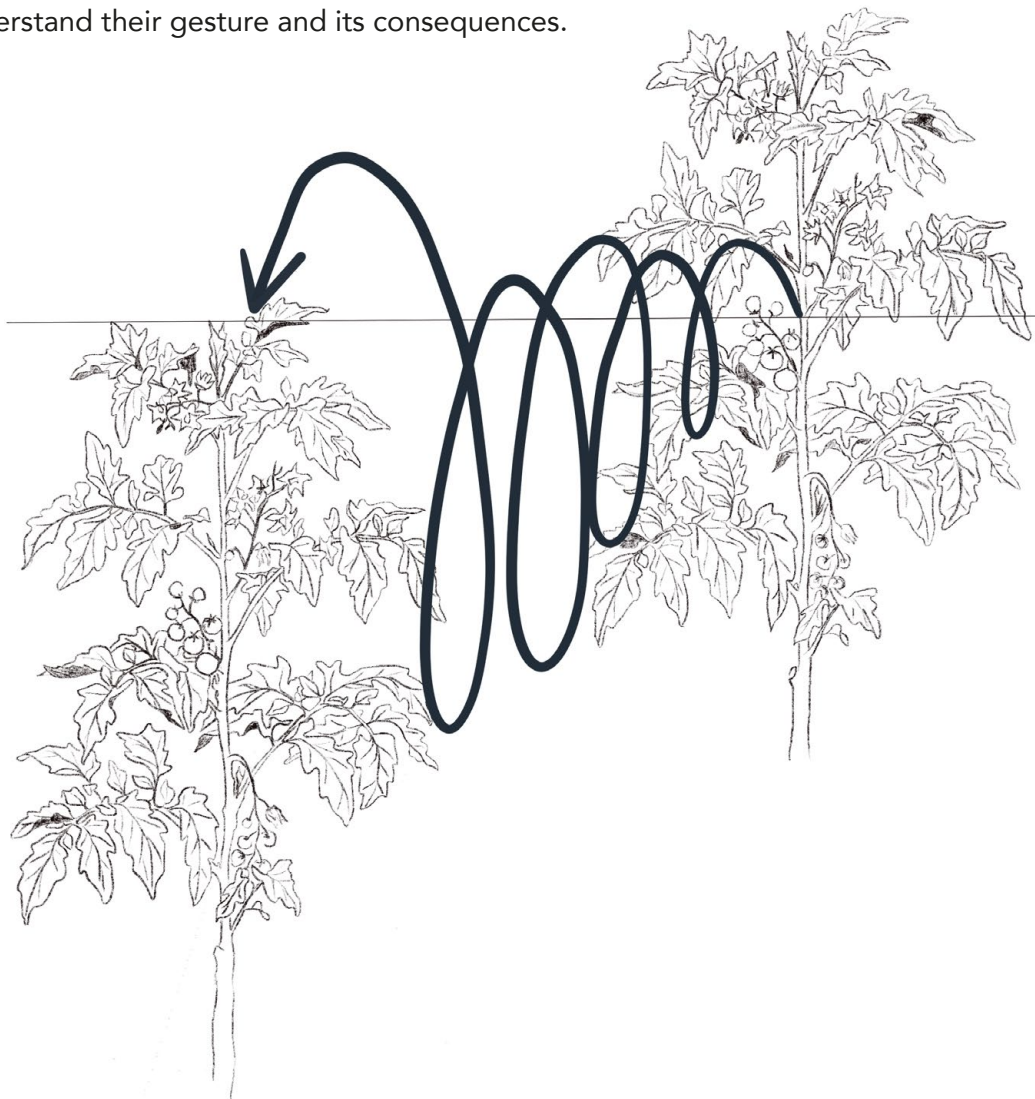
In August, when I arrive, the greenhouse is entirely green and the perspective monotonous. The aisles stretch and repeat themselves. At the back, opaque glass walls seem unreachable. The eye searches for focus points: the red tomatoes, the soil covered in white, a yellow line in the central aisle. It's by raising our heads, by following a vine, that we finally find an exit. The glass roof panels are transparent, open to the sky.

The tomato stems are wound around a (biodegradable) rope, suspended from a cable by an S-shaped hook. The cable is stretched, horizontally, almost to the top of the greenhouse, just before the spot where the sun would burn the leaves.

Some of the workers – exclusively men, I am told – stand on lifting platforms, at the level of the cables. They monitor the growth of the plants daily to bring them down when they become too big. They are called the turners. Their gestures maintain an altitude that is not to be exceeded. They monitor the internal horizon of the greenhouse. They bring the plants down. At the bottom, one metre off the floor, the feet are suspended horizontally so as not to drag on the ground. It is between these two horizons that the gigantism is perceived.

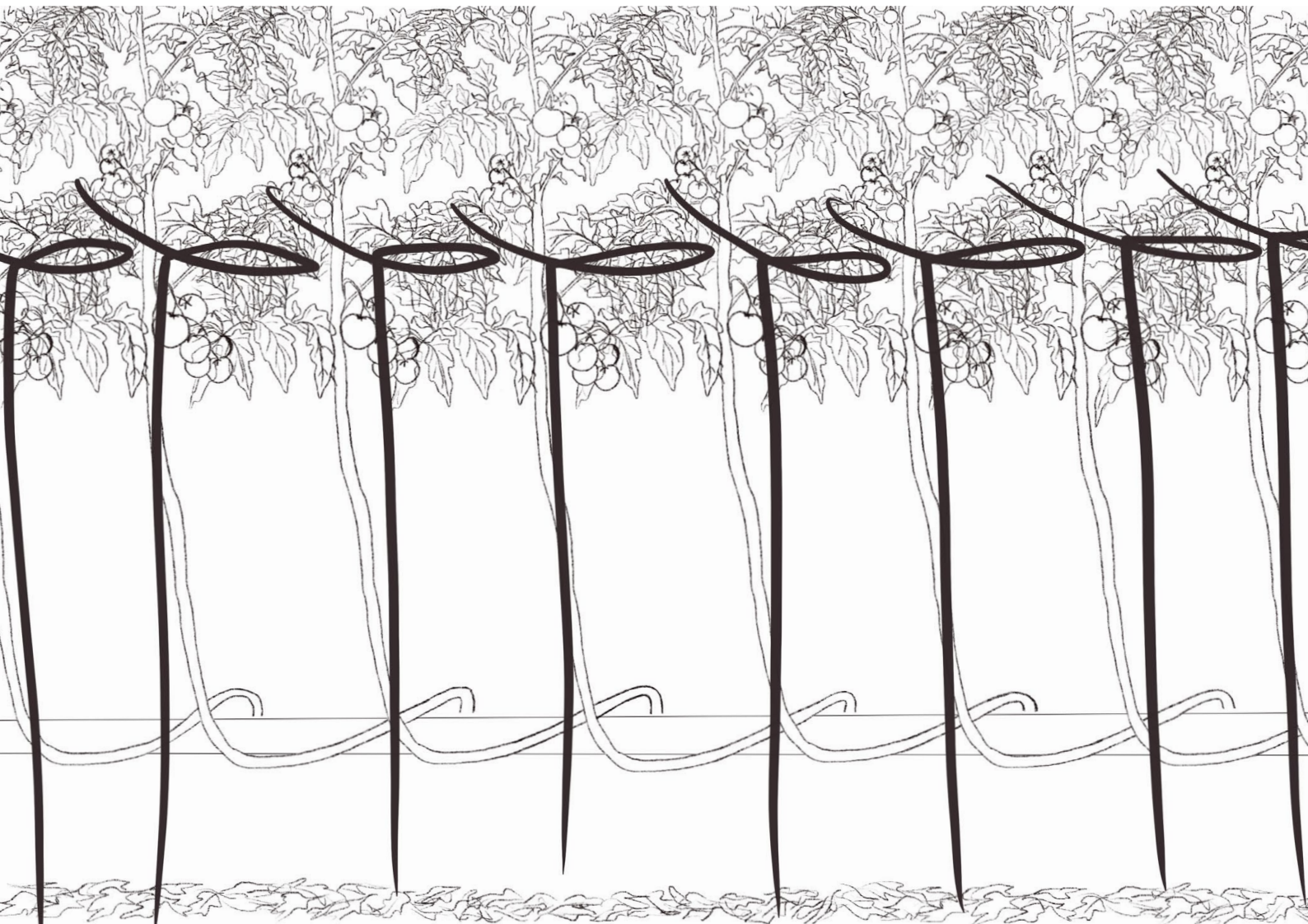
In August, the plants have been growing for seven months, trying to reach the top of the greenhouse, the sky, the light. During the first four months, their growth has been accompanied, supported by ropes. Then the ropes are gone and 'the turners' begin to thwart their ascent, to make them fall back down with each new sucker. With each turn of the hook, the heads are moved about twenty centimetres to the left. They slide horizontally now, sometimes changing row, moving away from their roots, experimenting a crab-like movement. Tirelessly they seek verticality, tirelessly the turners impose this lateral movement on them, this slight shift maintaining the hope of reaching the top while at the same time preventing it. The turners' gestures create diagonals to hold the plants between these parallel horizons.

I try to understand their gesture and its consequences.



This is one of the rare gestures constraining the movement of the plants. It was designed to contain their growth without interrupting it, but more importantly to facilitate the gestures of the other workers. By keeping the head at this height, the ripe tomatoes are always between 1.45 m and 1.60 m above ground level, and so are the leaves to be cut. This way, the cutters and pickers work at a constant and ergonomic height.

The cutters clip some of the foliage off at the level of the reddening tomatoes so the plant has more energy to dedicate to fruit and more direct light. These are the movements I learned on the first day. At the beginning of each row, a pair of clippers and a spray bottle of bleach to clean the blade every twenty metres. Each plant has to be pruned to start the transformation of the bushy plant into a bare vine, because soon, once the tomatoes are picked, the vertical part will become horizontal, interlacing with the other vines. The gesture is simple, the crucial issue is the number of leaves to remove. Some above the tomatoes, every single one below.



At the same height, but in different rows, the pickers harvest the bunches and fill the trays. These are exclusively female gestures. The manager of the greenhouse explained to me that women are, from experience, more delicate and therefore make better pickers. This is what I do on the fourth day. Every step counts, starting with how to stack the empty boxes on the cart. The foreman gives me a demonstration. The goal of these manipulations is to carry only empty crates. I'm impressed but don't remember the sequence and spend some time in the middle of my aisle trying to figure out how not to carry one of the crates I've filled. I'm much slower than the other pickers anyway and I'm putting too many cherry tomatoes in the trays. This will slow down the workers at the packing line.

The work of the pickers is closely linked to those working in the packing hangar. They master each gesture perfectly. One hand holding the bunch while the other cuts the stem close to the vine. A quarter turn to the left to put the bunch in a tray. And already the hand is holding the next bunch. They do not hesitate about the level of maturity of the fruit, nor about the number of bunches to put in a tray, and even less about the movement of the crates. They move along the row almost without stopping, their cart always in motion, their chest rotating. A quarter turn to the right towards the plants, a quarter turn to the left towards the crates, one step forward, a loop at the end of the line to start again.



In one row, sometimes less, the twenty-four boxes on the cart are full and sent back to the central aisle. There, robots take over. A small yellow robot pulls the carts to the shed. It follows a yellow line which guides it from one end of the six hectares to the other. It pulls up to ten carts behind it. Once it's at the right dock, a robotic system collects the full crates, weighs them and sends them on a conveyor belt to another robot that stacks the boxes on pallets to be taken to the cold room. The robot that drives the carts does not leave immediately. It waits for another robot system involving arms, conveyor belts, etc. to unfold new crates, put empty plastic trays in them and place twenty-four crates on each cart. Only then does it go back to the greenhouse. There, the pickers take a cart each and continue their work.

At the entrance of each row, they have to clock in. And each cart is weighed when it arrives in the hangar. This way, the employers can see who has filled which one and get an idea of the productivity of each picker. This doesn't stop the breaks at the back of the lines, the tomato tastings and the stash of bunches in the sleeves of vests. I found it odd, entering the greenhouse with a vest on the arm. It's when I finally reached the end of my 150 metres of picking that I understood the value of this accessory. It serves as a basket. At the end of the day, the vests camouflage a few bunches of tomatoes and almost nobody helps themselves to the self-service trays at the exit of the sheds. Tomatoes taste better when you pick them yourself. And these vest tomatoes are ultimately the only ones that will be carried by humans in this greenhouse. They are nestled in the crooks of arms, hidden in the folds of fabric and held in hands whereas the others, the official bunches, are rushed from plant to tray. Barely touched before being handed over to the robots.

I need some time, the whole fifth day, to observe this chain of robots and untangle their different functions, the different noises. What is an alarm and what is just the sound of a machine running? The hangar contrasts loudly with the greenhouse. On a few square metres, all this mechanical and electronic machinery unloads, weighs, packs, labels and stacks tons of cherry tomatoes every day. As much as the greenhouse slowed down my gestures because of the heat and silence, this hangar makes me focus on the noise and micro-gestures accomplished simultaneously. Here, the flows are dictated by the outside, the comings and goings of the trucks on the loading dock. The tomatoes are invisible, in the cold room, waiting to be desired.

In the greenhouse, everything revolves around the plant. I see it in contrast to this space. All the machinery, all the architecture of the greenhouse is designed to serve the tomatoes. Pipes provide the right amount of each nutrient for optimal growth. Other pipes diffuse water vapour to maintain the right level of humidity. Another one diffuses CO<sub>2</sub> because there is not enough inside the greenhouse. The substrate fulfils its role of mechanical support and for the transfer of nutrients to the roots. Hives of bumblebees are delivered weekly to pollinate the flowers. Auxiliary insects are ordered on a regular basis to control the pests observed on the yellow sticky strips. All these insects come from the Netherlands. Pheromone traps are set randomly to disrupt pest reproduction.

Everything that enters the greenhouse is at the service of these giant plants, their health and productivity. They themselves serve a huge consumption of cherry tomatoes in all seasons. These six hectares provide 25 per cent of annual consumption in Switzerland.

Only the sun does not play along this game of consistency. Because artificial lighting is forbidden, the greenhouse still depends on the sun, on its cycle and on a nearby mountain, east of the greenhouse, which delays its rising every day. A mountain close enough to make the greenhouse, its rhythms and gestures, stop for two months every year.

The extreme care devoted to these plants during ten months led me to question what becomes of them. What happens to the 320,000 tomato plants after they are uprooted? Could we imagine gestures to prolong our collaboration with these plants, to value them beyond their fruits? And what would they be? I think about the gestures of basketry to extend their use, to turn productive plants into receiving ones.

