

Growing outdoors for beginners.

Start & Growth phase.



PART II



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Getting started with outdoor growing.



Outlook: growing in May, June & July.

The start of the year, from February through April, was the moment to prepare for your outdoor grow. During these months, you could improve your soil, buy the stuff that you're going to need and germinate your seeds. You've made the necessary choices, like whether you're going to grow in pots or open soil, whether you're growing from seed or using cuttings. Now, the time has come to put your choices into practice.



What will the coming months look like?

Throughout the months of May, June and July, your plants will go through the growing phase and at the start of this period they will finally move outside. That will take the necessary preparations, of course.

- **Growing in May.** This is a very important month for the outdoor grower: it's the month in which you will take your young plants outside. From May 11th through 14th are days we call 'the ice saints' in Central Europe. After this period the chance of temperatures dropping below freezing at night becomes practically nil. So, after around the 14th or 15th of May it's safe to start planting outdoors!
- **Growing in June.** This is a month with ideal circumstances for growth. Most plants will enjoy the generally higher temperatures, moist soil and the longest days of the year. They will get more than 16 hours of sunlight now. Your plants are now fully in the growth phase and will form more and more green parts above ground, like stems and leaves, while the roots are forming a wider network. You can help the plant in it's growth with nutrients like Plagron Alga Grow and root stimulants such as Power Roots.
- **Growing in July.** Temperatures are still high generally, so most plants are still growing along nicely. But this month also has it's dangers. There might be long hot periods, where you have to water your plants more. Diseases and plagues like mildew, fungi or phytophthora can rear their heads. These also make your plant more attractive to pests like certain insects. You can protect your plants from disease and pests by keeping them in the best possible state with good nutrients and additives. Pests can be fought or prevented with biological means or natural enemies.



It's clear: your plants will be doing a lot of growing in the following months. Some species might even have an early harvest, but most types of fruit or vegetables will keep you waiting a while longer.

Using the product selector.

Before you take your plants outside, you have already chosen whether you'll be growing in pots or open soil. You'll need to fill pots with a substrate: a peat based soil. Obviously this is not necessary in open soil. But you can improve the soil you want to plant in by mixing in a good substrate. If you want to use Plagron products for these things, you'll have to choose a grow style. There are two grow styles that use soil based substrates: 100% NATURAL and 100% TERRA. But how do you choose the correct products from these styles?



A little help with your choices.

Plagron has a handy Product Selector that can help you to choose the correct substrate. It will present you with several choices that you'll have to answer.

- Will you choose the best quality, smell and taste of your harvest? Or do you think a big harvest is more important? Since this is your first grow, we're assuming you don't have many plants. A large harvest is not as important in that case. So for this first outdoor grow, we'll focus on quality and taste.
- Do you want to grow many plants? If you put a lot of plants in a plot of your garden, the soil needs to be well prepared to handle it. For a first grow, it's probably better to keep things small. So pick the option for fewer plants.

- Finally, you need to choose whether you want to add iron and phosphorus to your substrate. These are two important elements for a plant, with phosphorus being one of three major elements that a plant needs. It's a central part of your plants fuel and plays a big role in most major processes in the plant. Iron on the other hand is essential to photosynthesis: the transformation of sunlight, water and carbon dioxide into oxygen and sugars. Adding these elements in higher doses will improve the taste of your harvest.



For the best start.

If you choose to add more phosphorus and iron in the last step, the Product Selector will advise you to choose Plagron Batmix from the 100% NATURAL grow style. This is an airy substrate with a good water retention capacity. It contains bat guano and is prefertilized for six weeks, which means you won't need additional nutrients for starters. Finally, you don't need to worry about the pH value of the substrate or other values. The soil life will regulate these things for you

When can I move my plants outside?

Your seedlings have grown into young plants or you bought (or were given) cuttings. Now, you want to plant them outside. But it's still early in the year and temperatures can still drop below freezing at night. Besides, the days are not as long as you'd like them to be.

Daylight.

From mid-April days will have gotten long enough to give plants around 14 hours of daylight outside. That's enough to sustain the growth phase. As far as daylight goes, the conditions are now good to move your plants outside. But in April it can still freeze at night in Northern Europe. If this happens and you've already planted your plants, they will most likely freeze. In the best case that will cost them a lot of green material and a clear growth retardation. Most likely however, they'll simply die.

The Ice Saints.

If you want to prevent the danger of freezing nights, you'd better wait a few more weeks. From the middle of May, between the 12th and 14th of May in fact, are several days that are known as the Ice Saints in Central European cultures. These days are well known for sudden changes in temperature and transitions to milder weather. It is said that rain during the Ice Saints is a prediction of a rainy summer. In any case, the chance of temperatures dropping below freezing become almost zero after the Ice Saints. You can never quite rule it out completely, of course. In some years there have been freezing temperatures close to the ground in June. Still, once the Ice Saints are past, you can move your plants outside with confidence. It's time to go outdoors for real!



Growing from cuttings or seeds?

You can start your grow from seeds that you need to germinate, grow, transplant and prepare for the outdoors. But for many plant species you can also make or buy cuttings. What are the advantages and drawbacks of seeds and cuttings? And how do you take cuttings?

Pros and cons of seed.

- **Advantages.** With a seed you have an extensive choice in properties like taste, fruit size, appearance, flowering period and disease resistance. Plants grown from seeds are usually the strongest and produce higher yields more easily. This has to do with the first root that grows from the seed and goes deep into the ground.
- **Drawbacks.** If you start with a seed, you must first complete the germination process. Therefore it takes longer before you get fruit or flowers. In addition, it may happen that not all seeds germinate. Old seeds or seeds kept under the wrong conditions may grow slower.

Pros and cons of cuttings.

- **Advantages.** With cuttings you have a faster start of your cultivation because it's already a little plant. In comparison with seeds, cuttings therefore have a shorter growth period, which generally allows you to harvest quicker. In addition, you are sure that you have a female plant, which is important for the yield of your crop.
- **Drawbacks.** Cuttings are more difficult to obtain if you do not take them off a mother plant because you need to know someone who grows a plant successfully. In addition, often less different types of plant varieties are available. The risk of cuttings carrying diseases and insects is present.

How do I take cuttings?

You've chosen to take cuttings from an existing plant. But how does that work? A cutting is usually a branch or a small plant growing beside the mother plant, still connect to it by roots.

- You remove the cutting from the mother plant. The correct way to do this differs from species to species. Be sure to find out the correct way before you start cutting.
- Cuttings generally already have leaves and other green parts, but they're missing an essential part to become a real plant: roots. To help the cuttings with root formation, you should dip the cutting wound in cloning gel or cloning powder. When you're done, you should put your cuttings in water, where they will form roots. Once you see roots appearing, plant the cuttings in Plagron Seeding & Cutting Soil. This is a fine, even soil with low nutrient values, because young plant roots 'burn' in high nutrient concentrations.
- Plant the cuttings around the rim of a small pot. Four or five cuttings to a pot are fine. The cuttings don't need much water, by the way. If the potted soil gets too moist, the cuttings will rot. Keep the pots with cuttings nice and warm in a propagator with a transparent lid. Keep your cuttings in there until they're well rooted. After that, they get their own pots.

Planting in the outdoors.



Is my soil good enough to plant in?

All the preparations are done. You've got the tools, the plants are big enough, the Ice Saints have passed and the chance of freezing temperatures is small. Time to get to work! But there could be one last thing you need to prepare: the soil you're going to plant in. This needs to have a good structure and it should contain enough (not too much) nutrition.



Improve your soil!

To get started, you need to know what type of soil you're dealing with.

- **Sandy soil** is loose and airy, but it also contains few nutrients and it has a bad water retention capacity. You'll have to help sandy soil a bit by adding nutrients and improving water retention. The easiest way is to mix in a substrate like Plagron Batmix or a soil improver (see below). The big advantage of sandy soil is that it's easy to work with.
- **Clay soil** is exactly the other way around. It has such a heavy, dense structure that there's no place for air and water can't pass through. Improve clay soil by adding rough sand, beside compost or humus.
- **Peat soil** has a bit of the properties of both sandy and clay soils. Generally peat soil is a fine substrate to grow in. It's airy, retains water well and contains nutrients.





Plagron has a range of products to enhance your soil: Bat Guano, Mega Worm, Supermix and Perlite. The latter product won't be very useful in open ground since perlite doesn't degrade and will clutter up your soil. The other substrate complements are suited to specific goals.

- **Bat Guano** contains high amounts of, yes, bat droppings. These are rich in phosphorus and potassium. This complement helps a plant to form roots and leads to abundant flowering.
- **Supermix** is a very versatile and well balanced fertilizer, which stimulates a rich soil life.
- For growing outdoor in open soil, your best substrate complement is Mega Worm. This is an organic soil improvement product based on plant compost produced by worms. This worm humus is very beneficial to your plants, because it contains trace elements, enzymes, minerals and good fungi like mycorrhiza and Trichoderma. These fungi enter a cooperation with the roots of your plants and protect them from diseases and pests. Mega Worm also improves the structure and water retention of your soil

Before you start planting, you break open the soil. Then you mix the Mega Worm through the open soil. You'll need 1 liter of Mega Worm to every 4 square meters. Don't add Mega Worm too long before planting! If you leave the opened soil for more than a week, it will dry out and the soil complement will no longer be useful.

Testing your soil.

Curious about the state of your soil? Take a sample and send it to an organization that can test it. There are several organisations that will do this for you, although it will generally cost you a bit of money. You'll get a report about the composition of your soil, so you'll know exactly which nutrients you might be short on.

How do I prepare pots for the plants?

If you're growing in pots, the type and structure of the substrate is up to you. We do however advise a substrate based on peat and not compost for cultivation in pots. Compost based substrates can clog up a pot, which prevents water from draining away. Below you can read more about how to make your plants comfortable.

Getting rid of excess water.

Too much water is not good. Plant roots don't respond well to being submerged in water for long. A certain group of bacteria is very happy in water and most disease spreading bacteria are part of this group. So you want to prevent a lot of stagnant water in your substrate. A good atmosphere for roots is moist but not soaking wet. That's why water needs to be able to pass through the soil in your pots and surplus waters needs to have a way out. We call this 'drainage'. Make sure your pots have some drainage holes in the bottom. You can further improve drainage by adding a layer of 3 to 6 cm of Euro Pebbles, pottery shards or perlite on the bottom of the pot. This prevents the drainage holes from getting clogged with soil

Substrate.

On top of the drainage layer comes a layer of fresh soil. This will be the substrate that you chose earlier, like Plagron Batmix. Don't fill the pot all the way, because you'll need room to cover up your plants. Repeat this for all the pots you want to fill. They're now ready for their new occupants.



Hoe plant ik jonge planten of stekjes?

You've improved your soil or filled your pots. It's warm and light enough outside and your plants have done some growing. Now it's time to plant them for real! But how do you plant a plant? Is it simply a matter of making a hole and dumping a plant in it? Well... almost.

Make a hole.

Putting a plant in the ground really isn't very complicated, but you need to pay attention to a few details. First up: feel how moist the ground is in the little pots your plants are in. If this is a little dry, you need to dunk your plants in water to moisten the earth around the root ball. Now you can get to work.

- **Make a hole.** You dig a hole in the place where you want your plant to grow. It needs to be bigger than the root ball and you need to loosen up de soil at the bottom of the hole.
- **Put the plant in the hole.** Set your plant in the hole at the correct depth. The top of the root ball should be even with the top level of the soil or maybe a little lower. If you leave the plant too high, the top of the root ball may dry out and you don't want that.



- **Press it in.** Press down the soil around the root ball so that the roots have good contact with it. Remember: roots can't take up nutrients from air. Don't press too hard though.
- **Watering.** Now all that's left is a good round of watering. If you're planting in a long hot period you'll need to repeat watering until the roots have established themselves.

Later: repotting your plant.

As your plants grow, their pots will have to size up as well. This sounds easy, but there are some details to keep track of.

- Be careful to repot in a temperate weather period. Don't do it when it's hot and dry or very cold for a longer period. Repotting is an intensive process and it is always wise to do so when the plant is strong and can recover.
- Fill the pot in the same way as the original one: first a layer of Euro Pebbles for drainage and then a layer of substrate. When this bottom layer is ready, you can put the plant in. It is wise to remove a small part of the rootball. Not too rigorous, but a little bit so that the plant needs to work. Put the plant in the pot and place the remaining soil around the plant. Press the soil in a bit so that the plant has a stable base.
- Add a little water and Power Roots, so the plant can spread its roots throughout the new pot.



The growth phase in outdoor growing.



How to make a nutrient solution.

Strictly speaking, a plant doesn't need more than nature can give it. Most plants in nature grow in forests, moors and other unfertilized areas and they're doing fine. But you'd like to have a good harvest this summer, so want to shorten the growing phase. To speed things up, you can help with basic nutrients.



A balanced diet.

Plants can use a whole list of elements that positively influence their growth, the generation of chlorophyll and other important processes. In the growth phase, a plant needs these elements in other ratios than during bloom. Luckily you don't need to worry about this if you have good basic nutrients. Plagron's Alga Grow is a good example: it's tuned to the requirements of a plant in its growth phase. Basic nutrition is available in all kinds of forms and content sizes. Plagron's products are liquid and pretty concentrated. In other words: you need to mix it with water before giving it to your plants.

Ratios.

Alga Grow has a concentration of 1:250. This means you need to add 1 ml of nutrients to 250 ml of water. If you translate this to a litre of water you need to add a maximum of 4 ml of Alga Grow. With every additional litre of water you add another 4 ml.

- Start with the amount of water you need. Most buckets or watering cans have an indicator of how much water is in them.
- Add the correct amount of Alga Grow to the water. (For example: 12 ml to 3 litres of water.) Stir the mixture with a wooden stirring tool.

Once you've mixed the nutrition and water well, you can give the nutrient solution to your plants.



On prefertilized substrates.

Of course, if you are using a prefertilized substrate in a pot, like Batmix, you don't need to add grow nutrients for the first six weeks. After this period you might notice a color change in the leaves. If these start to yellow a little bit, you need to start with the basic nutrition

What does a plant need during the growth phase?

Plants can be little whiners! They have different requirements in every new phase of their lives. As they get taller, they can also use a little of support and they will want to grow into all kinds of shapes you don't want. So that means, feeding, supporting and pruning.

Nutrients to grow on.

There are two big elements that are true building block for your plants: nitrogen (N) and phosphorus (P). Both of these are present in higher doses in Alga Grow basic nutrients for the growth phase.

- **Nitrogen** is essential for the formation of green parts and plant based proteins. It also plays a big role in the formation of chlorophyll, which a plant needs to get energy from sunlight. Plants take up nitrogen in the form of nitrate, ammonium and amino acids in the soil, but you can help them along with good nutrient products.
- **Phosphorus** stimulates root formation and forms an important component of the plants' genetic material. It will ensure the good formation of new branches. In nature, plants gain this element from phosphates in the soil.
- **Potassium** is not a building block in and of itself, but it is essential for moisture uptake and the transportation of moisture and other elements throughout the plant. In the end, it is a major influence on the taste, smell and even color of your harvest. A prefertilized substrate like Plagron's Batmix contains these building blocks in good doses. The basic nutrient Alga Grow has an NPK ratio of 4-2-4, which means there's four percent nitrogen, two percent phosphorus and four percent of potassium in it. That means your plant will have enough of these important elements to sustain fast growth.



Support.

Many fruit and vegetable plants will start to bend down as they get taller and heavier. You can help them by putting a stick in the ground next to them and fixing the plant to the stick with stretchable string. You can also use zip ties, but be careful not to tighten them too much. If the ties are too tight, the thickening plant stem will grow around the ties and might get a wound in that spot.

Pruning.

There are some pruning techniques that control the growth direction of your plant and help it to focus.

- **Removing shoots.** You don't want your plant to create too many little branches. This would only result in a big bush of a plant without fruit or vegetables. Your plant has to focus on a few big branches. During the growth phase, small new shoots will appear at the points where the big branch grows from the stem. Remove these with your fingers. If you do this regularly, the shoots won't leave large wounds and the chance of infection will stay low.
- **Topping.** You can top some species, like tomatoes. This means you'll cut off the top of the plant above the last branch point. The plant will replace the lost top with new smaller tops that will grow to the same size as the first top. The result is a bigger harvest later on.



Problems and dangers in the growth phase.

Your plants are in the outdoors soil and they're getting free light and moisture. That's awesome, but that same free air also has some dangers. You can't constantly protect your plants from pests, for example. And they could run into nutrient deficiencies. For the bigger elements that's unlikely, especially if you're adding basic nutrients. But smaller elements could be a problem. Sometimes they're simply not present in the soil or your soil or substrate has the wrong pH-value for the plant to take up a specific element.

Deficiency symptoms.

How do you recognize if a plant is missing a certain element? Each deficiency has its own symptoms. If you know what to look for, it's easy to keep track of things. Below, we'll describe the symptoms for deficiencies of the biggest elements.

- **Nitrogen deficiency.** This is quickly recognized by yellowing leaves. The chlorophyll disappears from the leaves, starting with the older leaves at the bottom.
- **Phosphorus deficiency.** The first sign of a lack of phosphorus is a sudden growth stop. Roots will stop their development and leaves will no longer grow. The leaves might also develop a reddish glow



- **Potassium deficiency.** Plants with shortage of potassium are smaller and a lot weaker. Their leaves look unhealthy with yellowing or brownish veins and brown spots as well as a dry rim. There are a lot of smaller elements and macro elements, so it's not possible to describe all the deficiency symptoms in detail. A good rule of thumb is the following: if your plant has growth problems, discolorations or if leaves are drying up, it's best to look up these symptoms and find out which deficiency fits. Google is your friend.

Pests.

There are a number of insects and fungi that are very fond of plant leaves, roots and other plant parts. They use plants as food or as places to lay their eggs. It's fine that nature's being nature, but we'd really like to protect our plants and harvest. But before we can deal with the beasties, you need to know what you're dealing with. Read our grow topics on [plagron.com](https://www.plagron.com) for more information on common types of pests.



Protecting your plants from pests.

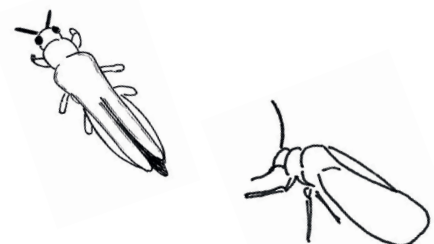
Check your plants for pests every day. The quicker you spot them, the better. If pests are already present on your plant, you'll have to fight them in an environmentally friendly way. We don't want chemicals on our plants, so we need a solid alternative. In some cases, you can do a lot with a non-toxic solution. But it's better to introduce a natural enemy of the pests.

Snails.

Snails really love green leaves. What they really don't love is garlic, and they're not alone. Copper wire is also a good physical barrier to snails, but won't keep out other insects. Another option is coffee grounds: break open used coffee pads or get the grounds out of filter bags and disperse it around your plants. Snails will avoid crawling through the coffee. You can also buy nematodes: little creatures that prey on snails.

Thrips.

Thrips (thysanoptera) are small, slender insects with fringed wings. The females lay their eggs in the plant tissue. To do this, they make an opening in the plant tissue in which they lay the kidney-shaped egg. The larvae start eating as soon as they have hatched. Thrips are difficult to fight. The adult bugs don't have many natural enemies, but you can buy predatory mites that prey on larvae and chrysalis stages. The predatory Orius bug also eats other insects, but their bites can be quite nasty.



Spider mites.

Mites (tetranychidae) measure between 0.2 and 0.5 millimetres and are difficult to see without a magnifying glass. Mites generally like warm, dry surroundings which is why they mostly target plants weakened by drought. You can spray your plants with a solution of water and rapeseed oil. Spider mites also have natural enemies that you can buy and release, like the predatory mite *Amblyseius californicus* and the larvae of the *Feltiella*. The Orius bug is another option.

Aphids

Aphids are small plant eating insects that look for the growth point in a plant, such as the top of a young stem. They suck the nutrients and sap out of green plants. Every time that an aphid bites into the plant, it forces saliva into the plant cell. This infects the plant with viruses and weakens it. The result is that the leaves discolor, wilt or become sticky. There are natural enemies, like ladybugs, that love to snack on aphids. You can also spray them with a non-toxic spray. Well known recipes are liquid detergent and water or a mixture of 20 ml of methylated spirit, 20 ml of liquid soap and a liter of water. An extract or infusion of onions can work, but this will likely have an effect on the taste and smell of your harvest.

And finally...

Most insects hate aromatic herbs like lavender, hyssop or garlic. Plant these in your garden or spread dried forms throughout your yard.



Ready for the flowering phase?

Depending on the plant species and how long your plants have grown before planting outdoors, your plants will keep growing for another couple of weeks. Now it's time for the flowering phase.

Shortening days...

For most plants the shortening days are the starting signal to start flowering. In nature, this is a reproductive mechanism. Shortening days mean that fall is approaching and the plant going to form flowers and fruit to spread seeds. Fructification requires different nutrients than forming green parts during the growth phase. As a grower, you want firm fruit of a good quality.

Are you ready?

You don't need to do much in preparation for the flowering phase. The plants do most of the work. But it is important that you are able to recognize when the flowering phase begins. The visual cues for this are different between species and we don't need to cover that in detail right now. What you will need to prepare is the nutrition for the flowering phase. In Plagron's nutrients for peat based substrates, that would be Alga Bloom or Terra Bloom.



100% NATURAL.

Are you a beginning grower and looking for a perfect combination of substrate and basic nutrients?

Alga Grow, Alga Bloom and Batmix form the perfect combination for your first outdoor grow. The products from the 100% NATURAL growstyle deliver the best taste and smell of your end product and they are easy to use.

Use our Shoplocator to find a store where you can get Alga Grow, Alga Bloom and Batmix!