

# How to Grow Glorious Gladiolus

## Chapter Fourteen

### GROWING CORMELS AND SEED

The principle method of propagating a gladiolus cultivar is to grow cormels. It is a relatively inexpensive method to increase stock of a new cultivar providing you do not mind waiting a year or two for your first blooms. The usual price for cormels of a new cultivar is ten for the price of a large corm; however, an adequate supply of cormels can usually be obtained from your previous year's corms.

I do not know what the big growers do with their cormels. The small grower with a quarter of an acre or less, such as myself, who will need only a few corms each year to keep up his stock, or who has only a few cultivars or seedlings that he wants to propagate, faces an entirely different situation. If he has a dozen cormels of a new seedling or a new cultivar, he will want to give them care which will produce the best germination and growth possible. He can also afford the time required to pamper these small lots throughout the year, which the large commercial growers cannot afford to do.

I like to plant my choicest cormels (usually lots of from one to fifty) in a special bed approximately five feet wide. A five-foot bed is about as wide as you can easily handle from the sides when it comes to seeding or cultivating, which will have to be done by hand. You will not have to do much cultivating, just enough to keep the weeds under control. I find those little three pronged hand cultivators handy for doing the job.

If possible, the cormel bed should be on ground where glads have never been grown before, and where you have never thrown trash from the field, such as old flowers, diseased plants, or debris from cleaning corms. All this material could contain the spores of various gladiolus disease, and could infect the cormels. I do not have any ground like this, thus I have to be satisfied with a corner of my main glad patch. This is on a four-year rotation as far as glads are concerned, which helps, although a six to eight year rotation would be better. The patch is kept as free of disease infection as possible by removing all diseased plants as soon as they appear throughout the year.

The ground is plowed or dug to a depth of six to twelve inches depending upon the nature of the land one is using. After it is plowed, I broadcast a bag of 8-16-16 fertilizer or the equivalent, on the quarter acre, and it is then disked and dragged.

The cormels are planted in rows eight inches or so apart. To make the trenches I use the edge of a thin piece of board about three feet long pressed into the soil and pushed back and forth across the bed until a trench is formed. This is about an inch and a half deep. Two inches is not too much, and if your soil is sandy would probably be better. I plant the cormels about an inch apart if they are choice, or if I only have a few. Otherwise, I plant four or five to the inch. They are covered by pressing in the sides of the trench firmly. You will want to mark each cultivar with some kind of label. I find the plastic stakes to be inexpensive and adequate for my purpose.

Cormels require adequate moisture for germination. Therefore I recommend that they be planted early in the spring while the ground is still moist, in fact, as early as you can work your ground is a good gauge for planting anywhere. Do not be afraid of late frosts. Cormels can stand a lot of freezing. They even live over winter at times and I have heard of cases where they were planted in the fall, and with a light mulch germinated well the next spring. If the weather is dry after they are planted, water is necessary, but be sure that you really soak them thoroughly, do not just wet the surface.

Other methods will aid germination such as cracking the shells. The shell of a cormel is very hard and impervious to moisture. The cormels have to lie in the ground for some time before

moisture can penetrate this shell and get to the kernel to start growth. If you will pinch the cormels just enough to crack the shell, it will enable moisture to reach the kernel much sooner. Care should be taken not to pinch too hard or the kernel inside may be damaged. Some cultivars have natural cracks on many cormels and these usually will germinate very readily with no further cracking. Other cultivars have very soft silky shells on their cormels and these usually germinate well without cracking. As with everything else about glads, laying down a rule that will apply in all cases is difficult. You always have to add the qualifying phrase, depending upon the cultivar.

The cormels of some cultivars will not germinate if they are planted in the spring following harvest. I have one seedling of which I have never known a single bulblet to germinate, if it was planted the spring following harvest, and I have had this seedling thirty years. These cultivars will need to be held over a year and planted the second spring following harvest. You will have to discover these cultivars for yourself.

If you are growing seedlings, this information can be very important to you. If the mother bulb is lost and the cormels do not grow the first year you may lose the whole cultivar. With suspect cultivars, planting half the cormels in the spring following harvest and hold the other half over for another year, is wise.

Another method that speeds up germination on most cultivars is the soak and sun method. This is more practical for larger lots of cormels. They are placed in cloth bags and put to soak in a container of tepid water overnight. In the morning the bags are taken out of the water and placed in the sun. They are turned once or twice during the day so that all sides are exposed to the sun, and at night they are put back to soak again. This is kept up for about a week unless they show signs that they are starting to sprout. They are then dried off enough to handle and planted at once. Another method related to this one, and which can be used on small lots is to leave the cormels uncovered in the trenches for two or three days. This seems to have much the same effect as the soak and sun procedure. Better look out though, if you have any Red Wing Blackbirds, Starlings or Squirrels around, they like to dine on cormels.

Some say that a cold treatment will induce better germination. They recommend that they be placed in the bottom section of the refrigerator and kept as cold as possible without freezing for a period of up to two months before planting. Even a few days of refrigeration is supposed to help. I tried it last spring and got 100% germination on a couple of cultivars, but did not plant unrefrigerated cormels for a check.

Before planting your cormels, I would recommend that you look them over carefully and throw out any that have any indication of disease. Throw out any that appear to have holes burned in the shells or that is dark colored. I do not mean that all dark colored cormels should be thrown out because some cultivars are naturally dark. Cormels obviously darker than the average for the cultivar should be discarded.

If you have plenty of cormels, I would plant only the larger ones. The really small ones, especially the pin heads, either will not grow or if they do, the bulbs will be so small they will either dry up over the winter or only make medium bulbs the next year. To increase your stock at the maximum rate, you will plant everything except diseased cormels.

Cormels will stand a little heavier fertilizing than your bulbs. In addition to that broadcast in the spring, an application of fertilizer applied once or twice during the growing season may help. One of the 100% soluble fertilizers applied with a sprinkling can, will work best. These fertilizers are a little high priced but you will not need much for a few cormels. Do not use too strong an application and stop using it approximately six weeks prior to harvest in order to give the plants a chance to ripen before digging time. The best time to use these fertilizers is while the ground is still moist following a rain.

If you are interested in cormels, you may want to know how to get the greatest number of them from your stock. Your planting stock will produce the most. Large bulbs of some cultivars

will produce well, but many will have very few or maybe none at all.

Developing stock of these cultivars is difficult if you start with large bulbs. Therefore many old growers will buy medium or small bulbs of a new cultivar rather than large ones. Also, for some reason, cormels from your planting stock will germinate better the next year. If you want maximum cormel production, plant your bulbs early and grow as late as possible in the fall without getting into disease problems.

When cormel production is wanted, your plants should not be allowed to produce seed. Glads, like many other plants, especially bulbous plants, will make less vegetable growth if seed is permitted to develop. Cut your spikes at their best or even a day or two before with as short a stem as you can use. Take care to leave as many uninjured leaves on the plant as possible. Seed is grown for a different purpose than cormels. Cormels are grown to increase the number of bulbs of an already established cultivar.

Seed is grown to obtain new cultivars. When a grower eventually decides to grow a few seeds, he does not know it, but from then on his life will never again be the same. He has become the victim of an incurable disease which can only bring pleasure to its victim. There is nothing quite like the thrill of going out into the seedling patch in the early morning to find that those big fat buds have burst into bloom and that you are the first one to see a wonderful new cultivar grown from your seed. Perhaps it will not seem so wonderful a little later, but that first glimpse as the sun comes up over the horizon makes them all seem wonderful. Where and how you sow your seed will depend upon the quantity that you plan to plant and how much attention you want to give them.

Fresh soil for planting cormels is important, but it is much more so for seed. Soil on which glads have never been grown or on which you have never thrown any glad waste is best. The next best would be land that has had six to eight years between glad crops.

No matter how good a new seedling proves to be, if it has already contracted some disease, it has no value. If the ideal soil as outlined above is not available, chemical soil treatments will produce disease free soil.

If you only have a few seeds, you can start them in pots or flats in the house, and then sink the containers in the ground about the last of May. The big advantage of this method is that you will get the best possible germination and can plant a month earlier. Container grown seed does not, as a rule, produce much larger bulbs.

I would not try to take the plants out of their containers and transplant them into the ground. Transplanting has been done successfully by some people, but it is apt to throw the plants into dormancy and you will get very little growth.

If you want to grow a greater amount of seed, this method is hardly practical and an outdoor bed becomes a necessity. I grow some five to ten thousand seeds a year, and I plant in an open bed prepared as for cormels. Others use a cold frame type of bed and may even use an electric heating cable to warm the soil. This arrangement can enable you to plant six weeks or even two months earlier in the spring. One friend of mine plants in a "walk in" type of structure using an "A" type framework of iron with sheets of heavy plastic for covering. The plastic is loosely mounted so that air comes in around the edges. The beds are filled with a sterile growing medium and nutrients are added in the irrigation water, which is supplied as an automatically controlled spray. He has a fan in one end to blow the hot air out in the summertime and can blow a little warm air in if it gets too cold. With this arrangement he can get up to four or five months more growth than I can. Of course, he is some two hundred and fifty-mile further south than I. He harvests mostly No. 1 or No. 2 bulbs and many will bloom in the seed bed. As a result, most of his seedling bulbs give typical bloom the first year after seed and he has no need to grow another year to see what they will do from large bulbs.

My seed is planted in rows across the bed similarly to the way I plant my cormels. The only differences are that I make the rows a little closer together, about six inches, and I do not plant as

deep. About one-half inch is deep enough in heavy soils. However, in lighter soils it may be up to an inch. If you plant too deep, they may not come up, and if too shallow, it is difficult to keep the seed moist enough for germination especially in an open bed. Seeds are planted five or six to an inch.

My friend, with the walk in seed bed, marks out a block of bed where a given lot of seed is to be planted and then broadcasts the seed so that they are an inch and a half to two inches apart in all directions. A half inch of the growing medium is then sifted over the seed. Another friend digs out a trench about three inches wide and an inch deep. This is filled with damp peat moss to about a half inch below the surface. The seed is scattered in a two-inch band with eight to ten seeds to the inch of row. He uses a bottomless box about a foot long and two inches wide which he sets on the band, and he does not have much trouble if the weather is windy. He can even cover the seed before he moves the box ahead. He covers them with another half inch of the damp peat and just a brush of soil over the peat to hold it in place. I find it easier to keep the weeds out of a narrower row and besides this method is too much work to suit me. I can plant all of my seed in half a day while it takes him three days and we plant about the same amount of seed. Of course he may get a little better growth and perhaps cleaner bulbs.

Glad seeds send up a single grass like blade into the light and a single root straight down. When this root is firmly anchored, it starts to contract and draws the base of the young plant down into the soil until it is close to two inches below the surface. If the soil is permitted to dry out before this is accomplished, the plants will probably be lost, so keep the soil moist at all times even if you have to carry water in a sprinkling can. By the time the second leaf appears which should be about three weeks after the first one emerges, the plant will be well established and not as vulnerable to dry conditions. It would be well not to let them dry out too much even then.

You will find it much simpler to maintain this moist condition if you will use some sort of mulch on the bed. I have a favorite which I think few people have thought about. It is just a single thickness of newspaper. If you have ever picked up a piece of paper from the ground, you have always found the soil underneath moist even though that around the outside was quite dry. I put it on over everything, rows and all, and weight it down with stones, which are plentiful in my garden, or weights of any kind can be used. When the seed comes up, I cut a narrow slot above each row and leave the paper on the bed until the end of the season unless it proves to be a wet one. In any case I would remove what is left in early September so that the soil will dry out before it is time to dig. Any mulching material that you may have handy that is not too coarse will do. Many people use grass clippings thinly scattered over the bed. I know two men who use strips of aluminum foil spread between the rows. Some recent research indicated that this may serve a double purpose in keeping aphids away from the bed, in addition to its value as a mulch.

Seed normally takes about twenty one days to germinate. A few may start around seventeen days but the most will take a few days longer. Some people claim that they have ways to make it germinate in ten days or even less, but I find the twenty one days about right. Moisture and temperature affect germination. A 68-degree soil temperature is supposed to be optimum. A few seeds will be delayed and may come up at various times throughout the summer. You will often find many that have germinated just before you start to dig. These will not have developed sufficiently to be of any value to you. Germination should be close to 95 when started in flats inside, but outside in an open bed 50 to 75 is average.

Some people de-wing their seed before planting, claiming that they start quicker and that germination is quicker and better. I have found that at best you gain only a day or two. I have never made a test for germination. Dewinging gives you an easy way to separate the good seed from the chaff but I usually do not bother. It is a lot of work for the little you gain and I am a bit lazy. The usual directions are to rub the seed over a bit of window screen or gather a lot of seed into the center of a piece of soft cloth such as a handkerchief and twist it up into a ball. While I hold the twist with one hand, I rub the ball back and forth between the fingers of the other. It is

surprising how quickly the wings can be destroyed. After the wings have broken up, you will have to sift the seeds again to separate them from the chaff, or you can dump them into a shallow pan. With a little judicious shaking, coupled with a gentle blow once in a while, you can separate them easily. The main advantage in dewinging to my mind, is the ease with which you can distinguish the good seed and the fact that dewinged seeds can be planted while the wind blows.

I have recently been asked if two year old seed would lose its germination power as is the case with many other seeds. In the few instances where I have planted old seed, I have thought that it came up earlier and germinated better than fresh seed. Glad seed has an oily coating and if it is stored for two years in an envelope you will find oil spots where the envelope has blotted up this oil from the seed. This removal of the oil from the seed may allow it to absorb moisture easier and may account for the quicker germination.

Most bulbs grown from seed in the northern part of the country at least, will be from one half to three quarters of an inch in diameter. There may be a few larger than that and several will be smaller. Most of these one half inch or more will bloom the next year and you will want to pick a few of these for special trial and propagation the next year. I would recommend that you grow the others another year also. I would not be too critical the first year, as they are often much different the second year when you grow them from large bulbs, and more desirable.

By the late Clark Pickell, from The World of the Gladiolus

## STARTING CORMELS

The late Clark Pickell wrote the preceding portion of this chapter, and it is still used by many today. The information is ageless, but I have found through experience and talking with others, practices have changed. I find there are as many ways to prepare cormels for planting as there are people planting them. I would like to give the process I use, which I find easy and less time consuming.

After drying, my cormels are stored in paper bags and set in trays with the top of the bag open. Each bag is marked with cultivar name. The trays are stored in the same room with my bulbs. Other than this, I do nothing special until I am ready for planting.

About a month before planting, I take my cormels out of storage and prepare for soaking. During the Winter I have collected ladies' pantyhose for this task. They may have a run, but no hole that cormels may escape through. I dump my first sack of cormels down the leg, to the toe of the hose, along with a small plastic tag marked with the cultivar. Any tag will work, as long as the ink is waterproof and will stand rinsing. Making sure the tag and all the cormels are in the toe, I tie a knot in the pantyhose, just above the cormels. This separates one cultivar from the next. I continue with the next cultivar, another knot, etc., until the entire leg is filled. At this time I double knot at the top of the leg and cut the top of the hose off. I will have six to ten small lots in a leg or just one or two large lots

The filled pantyhose are placed in paper sacks, waiting to be soaked before planting. One week before planting, I start the soaking process. At this time I place the prepared cormels in 5 gallon pails of water, adding two tablespoons of vinegar for each gallon of water used. I let them soak during the day, 14 to 16 hours, then I dump the water off and let them set overnight in the bucket. This process allows the cormels to breathe. I don't remove them from the bucket, so they stay damp all night. The water I dump off will be brown and dirty, so in the morning I start the process over again, fresh water and vinegar. The fresh water and vinegar used each day keeps them from getting rancid. I never add water the day I'm going to plant, making the cormels drier and easier to handle. After seven days of this process, the hard shell has softened and makes germination after planting a higher percentage and quicker. If I am in a hurry, I may have time to do this for just three days, but seven days seems best.

Planting beds are fine, but if you wish to use modern tillers, cultivators and garden tractors, I find planting cormels in 40" rows the same as my large bulbs, a better process. This procedure makes it easy to cultivate, hoe, weed and hill. I make a furrow one and a half inch to two inches deep, with whatever tool that makes this task easiest. Plastic trickle irrigation is then laid in the bottom of the trench. I am ready to start planting. I then pull from the pail, a string of cormels in panty hose, held over the pan I plan to plant from, and cut out the toe with a scissors. The cormels and tag will spill into the pan. Mark your planting stake with the cultivar, place it in the row, and you're ready to plant. I may plant as few as six per foot on cultivars that I know will bloom first year from cormels, such as, **Shiloh**, **Antique Rose**, and **Lavender Masterpiece**. I will plant as many as twenty to thirty per foot, on cultivars that I just want to increase my planting stock. The space you have available will determine this. I continue with the next cultivar, cutting the next knot off the hose until I have finished planting. On windy or sunny days I cover the cormels with soil as I'm planting, so the cormels will not become too dry. Soil can be pulled into the furrows with a rake or any mechanical means that does not displace the cormels. I have seen cormels germinate and grow from a depth of eight inches that were plowed under from the previous year. I prefer planting an inch and a half deep and even more shallow if the cormels are extremely small. I would like to contribute a few words on weed control and watering. Cormels need more water to get started than bulbs. For this reason I recommend a soaker hose, subsurface trickle irrigation or sprinkler system. As the soil dries, it should be

soaked once a week to the planting depth. Possibly more often if your soil is sandy or crusty and temperatures are hot and windy. Taking into consideration rainfall, soil at cormel depth should always be moist and only saturated right after watering.

I have learned this trick on weeding. Cormels take two to three weeks to break the soil surface, where, grasses, nutsedge, morning glories and other undesirables are up and growing in no time. Once again check with your County Extension Office or local garden center for herbicides approved for use on gladiolus and read the label for proper use. Other than this, all your cormels need for rapid growth is food, light, water, air and a healthy environment. If you have any doubts on weed or insect control, your County Extension agent garden center, or Glad Society, will be excellent sources of information. Cormels are always more subject to chemical damage than large corms. Many growers use lower rates or half rates on cormels. As this book will be in print over a long period of time, and most chemicals are up for review periodically, I suggest that you check the current labels on all herbicides used. NOTE, it is illegal to use chemicals on crops or at rates not listed on their label. Please request ornamental label when purchasing the product.

A few last tips. When my only concern is corm production, I do break off spikes when they show enough color to tell if they are true to the tag marker in the row. Besides the normal fertilizer, I like to side dress my cormels with calcium nitrate twice during the growing season, with a rate of three to six pounds per hundred feet of row. Your soil type, organic matter, and rainfall could make this rate vary for your area. I do this the sixth or seventh week after planting and again the twelfth or thirteenth week after planting.

Last of all, I would like to mention heat treating cormels. I do not heat treat my stock, but will explain the process so readers will know that the process exists and why. Heat treating is used by commercial growers to make their corm stock as disease free as possible. This is accomplished by dipping the cormels in strictly controlled heated water for 30 minutes. If you get the water too hot, the cormels will die and not grow. Unfortunately you will not know this until they are planted and nothing comes up. If the water is not hot enough and disease pathogens are not killed, your time and effort were wasted. Sounds tricky, yes, it is. If done correctly, it works well, producing a higher quality, healthier planting stock. You should know that cormels can withstand higher temperatures than corms. The following temperatures are in Fahrenheit, and are the top temperatures that cormels can stand. By those using this method, it is agreed that it will slow germination, but the healthier cormels will catch up half way through the growing season.

Heat treating with hot water, no chemicals added, at 125 degrees Fahrenheit, is considered maximum, this means no hot spots. Personally, to be safe, I would stay a few degrees under this "magic" temperature. With certain chemicals added, which I will not mention because I understand they are under review, the safe temperature is 131 degrees Fahrenheit, making the cormels as clean as possible. If you are considering using this process, please talk to an experienced grower for all the details. I'm sure even he will have a few horror stories to tell of his experiences with heat treating. Learn from his experience and mistakes. I hope you are all still game to give it a try, but don't put all your eggs in one basket.

By: Cliff Hartline

## GERMINATING CORMELS

Soaking cormels in a heavy solution of Clorox also improves germination. When I'm in a Clorox soaking mode, I use a four-gallon pail, filled half full of water, to which I add one cup of Clorox. I think you could even add more, without doing any damage.

After mixing this solution, I place my planting stock in the liquid. You may want to experiment, but I think you could go as far as one-third solution of Clorox. Your condition and dormancy of corms may vary this solution.

You don't have to soak a long time when using Clorox. I figure anywhere from half an hour and up is adequate. After all, Clorox is about as good a dip as you can find. It is murder on fungus and softens the hull on the cormels for quick germination.

Add nothing with this solution. Use only water and good ventilation in the area. Soaking cormels without Clorox may take days to achieve the same results. After all, your goal is quick germination. I can state that germination with the Clorox dip is definitely quicker and a higher percentage. NOTE: Clorox may bleach out writing on tags or disintegrate bagging material.

By: Alex Summerville

## TIME TABLE FOR EMERGENCE OF CORMELS

	Emergence Time
1. Untreated cormels	5-7 weeks
2. Untreated cormels with soaker hose	4 1/2 - 6 weeks
3. Cormels soaked 7 days	3 1/2 - 4 1/2 weeks
4. Cormels warmed to 70-80 degrees for two months, (may be less) 70 humidity	3 1/2 - 4 1/2 weeks
5. Cormels soaked and aerated in warm water	3-4 weeks
6. Cormels treated 1/2 hr. with bleach - 1 pt. 5% bleach to 4 (may be less) pt. water	3-4 weeks

These results are based on cormels that are dug in September or October in a northern latitude, such as the State of Ohio, and replanted in the spring after treatment at the depth of 1 1/2 to 2 inches. Understand these time estimates can be affected by regular irrigation, rainfall, soil and air temperatures, sun heat units and planting depth.

By: James Martin



## STARTING SEED

We will continue with more about starting seed early. With the invention of gro-lights and small home greenhouses, more people are starting their seed ahead of time, months before weather will allow them to be started outdoors. This manner gives you a head start and the possibility of getting number one corms and blooms the very first year. I myself have tried two ways, but will discuss three ways.

The first discussion will be on gro-lights. In the past I purchased the expensive gro-light florescent tubes. After visiting Ohio State University labs and discussing their methods with them, I discovered cool white tubes give you the spectrum of light necessary to grow green foliage. I have my gro-lights set eight to twelve inches above the seed trays. I understand they can be on for twenty-four hours, but I prefer a timer turning the lights on for sixteen hours a day. Along with this, I have an oscillating fan that blows over the seedling trays when the lights are on. This fan hardens the young seedlings to wind and lowers fungus attacks. Watering more is frequently necessary, because the fan dries the soil quicker.

I plant my seed one half inch deep in sterilized soil or medium. I plant the seed eight to ten weeks before they are to be set outdoors. This may vary depending on the temperature of the room that you are starting them in.

I found if the plants had too much growth, some would go dormant when transplanting outdoors. If enough protection is used when transplanting, this may not happen. Whether you have a lot of growth or not, the seedlings have to be protected from wind and bright sun. They are tender plants and are easily burned by the sun and even twisted off at the ground by the wind. They look like a single blade of grass at this stage. Usually they are three to five inches tall and some may be shooting their second leaf, at this time.

Glad started from seed hate to be transplanted. For this reason start the seed in paper or peat pots that can be placed directly into the soil. Glad seedlings have very little root system and any disturbance causes them to fail. I started thousands one year in one inch small compartmented plastic trays. Only a couple dozen survived the transplanting. Even in this small amount of space, there was not enough root growth to hold the soil together. It fell apart as I tried to remove them from the trays, disrupting the seedlings so much they died. Depending on the size of your peat or paper pots, you could plant four or more seeds per pot. Whether paper or peat pots, I do recommend putting a hole in the bottom, making it easier for the roots to grow deeper. My paper pots are two by two by three inches deep with no bottom. They are placed in a plastic tray and filled with soil. I place four seeds in each pot, usually three will grow.

When transplanting outdoors, I plant the pots six inches apart. I then put hoops over the rows and clear plastic over the hoops, making a tunnel of plastic, to protect the tender shoots. There are commercially sold hoops to hold plastic, but they can be made of anything that will hold the plastic off the ground to allow enough room for plant growth and air movement. The number of hoops and placement will depend on your location and number of seedlings planted. Wind seems to be the most destructive element. If you are not in a protected area, bricks or something to hold the clear plastic in place will be necessary. I cut small slits in the plastic to permit heat to escape, and as the weather warms, I cut five inch round holes every four feet. This permits more wind and air to the glads, which will help harden them. During the day, the holes in the plastic prevent the seedlings from over heating. I place a soaker hose or trickle irrigation down the center of the tunnel. If you do not have this type of watering system, you can water through the holes in the plastic. Early in the season, I usually pull the plastic back to hand weed, then replace it. If you have the time or patience to put peat moss around each plant, weeding is usually not necessary and the soil will stay moist much longer. I remove the plastic permanently after five or six weeks. By then the seedlings are acclimatized to the sun and are large enough to

withstand the wind.

The next method to discuss is that of planting the seed in plastic trays. I use the eleven by twenty-one-inch, non divided trays you get plants in at most nurseries. I use the plastic trays, with large holes in the sides and bottom. If your trays have solid bottoms, you must cut or drill three rows of one inch holes (seven to ten holes to a row) across the bottom of the tray. The holes in the tray are so large that the soil will fall through. For this reason, I place the tray with the large holes into a plastic tray with the usual small holes, which will contain the soil. I then fill the top tray with sterile soil or mix, leaving one quarter inch at the top, making it easy to water. Using a pencil, I make holes and plant my seed one half inch deep, twenty-four to thirty-six seeds to a tray. The ease of this idea is great. All the above practices with gro-lights will be the same. When planting outdoors, carefully remove the bottom tray and plant the top tray directly into the garden where they are to be grown. Bury it so the soil in the tray is the same level as the soil surrounding it. This will place the edge of the tray above the ground level, making it easy to water. Since the seedlings have to grow through the holes in the bottom of the tray to get to moist soil, it is necessary to water a little heavier, until this occurs, usually in one or two weeks. I find there is less weeding, because the soil in the trays was sterilized and there is no transplanting shock, which causes dormancy. I irrigate and put them under plastic protectors, as stated above. In the fall, I cut the tops off and jerk the trays up. All the new corms will be formed in the soil in the tray. The roots that have grown through the tray bottom, can be trimmed off. I store these indoors, where they can't freeze, separating them from the soil as soon as I have the opportunity. Your corms from seeds will be the last thing to dig in the Fall. They are usually still growing until a killing frost stops them. In the South, they can be harvested when the top starts to turn brown.

The third concept may be the newest and most radical. Some growers are experimenting with growing the seed in pots, only a month or two after seed harvest. In November or December they start the young glad seed in greenhouses, growing for four months, usually with the aid of gro-lights. After this time period, the plants are only six to ten inches tall and the corms formed will be about the size of a nickel or dime. In early March, water is withheld to make removal easy. Although the tops are still green, they separate the corms from the soil and the tops from the corm. The corms are stored at cool temperatures to break dormancy and planted outdoors in May. At least four weeks at cool temperatures are needed to break dormancy. When the corms are planted outdoors in May, they start their growth again. I have given you some suggestions and ideas on starting seed. Any of these ideas may work for you and give you an idea of where to start. All of these practices will give you some blooms from seed the very first year.

By: Cliff Hartline