PREFACE

DIY AUTOFLOWERING CANNABIS, *An Easy Way to Grow Your Own*, introduces a brand new plant to gardeners, one that is easy to grow, beautiful, and useful too: Autoflowering *Cannabis*. Why me and why Autoflowering *Cannabis*? I have been writing a newspaper garden column every single week (without fail) for nearly 45 years. If there is one thing I have learned from writing all those columns, it is that gardeners, even the most casual, are always looking for something new and different to grow.

This is why breeding new plants for the home gardener is a huge industry. Every spring, new varieties of roses, pansies, petunias, hydrangeas, and more appear in box stores, greenhouses, and nurseries. For most gardeners, the new plant introductions are the best part of the catalogs that come out each year. However, it isn't often that a *whole new category* of plants becomes available to the home gardener.

Now that *Cannabis* prohibition is ending, you would think there would be lots of interest in growing *Cannabis* in home gardens, and on porches and decks. Unfortunately, there are a number of really big obstacles that prevent regular *Cannabis* from becoming a popular home garden plant.

First, the biggest barrier is that regular *Cannabis* plants are dependent on daylength to bloom. Actually, it is night length, but either way, this is known as photoperiodism. Nights must be more

▶ Flower HAROLD FRAZIER, NEW BREED SEED

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than 12 hours before flowering will start, and it is the flowers that are harvested.

This is not a problem in and of itself, but shortening days are accompanied by cooler weather in most places around the world. In many, frosts kill the plants before they are ready to harvest.

Not so with Autoflowering *Cannabis*! Autoflowers (for short, also called Day-Neutral *Cannabis* and, sometimes, Automatic *Cannabis*) do not flower based on a photoperiod. They can flower anytime, indoors or outdoors, regardless of how long (or short) nights happen to be.

This kind of *Cannabis* evolved in Northern climes where the growing season is extremely short. To survive, plants must grow very fast and produce viable seeds before they are killed by the chill. Over time, some evolved so that genetics trigger timely flowering, not a change in photoperiod.

As a result, home gardeners who grow Autoflowering *Cannabis* don't have to worry about-immature plants being taken down prematurely. I garden in short season Alaska, so I know this firsthand.

Moreover, since Autoflowering *Cannabis* is not triggered into flowering by light or darkness, gardeners don't have to worry, as do regular *Cannabis* growers, about street lights or someone accidently interrupting a dark period by turning on lights.

The second major problem with regular photoperiod *Cannabis* is that these are normally really big plants, some reaching 3 meters (10 feet) or more high (sorry) and just as wide. These are much larger than the casual gardener can handle. They certainly don't fit on an apartment or condo deck.

Once again, Autoflowering *Cannabis* has it covered. These plants are much, much smaller than their cousins. Some are Lilliputian and only get 30 to 45 cm (12 to 18 inches) tall! Others can grow to about 90 cm (3 feet), still a size perfectly suited for growing in containers, outdoors on a deck, or indoors under lights.

Now, photoperiod and smaller plants would be quite enough to convince many to grow Autoflowering *Cannabis*, but there is one more convincing factor. Larger regular varieties of *Cannabis* can

take several months and more to flower. Often seeds started in April don't produce until December or January (or even later). Not only would this try the patience of a home gardener, but as earlier noted, in most cases cold weather would take them down. Growing *Cannabis* is limited to those that have a long enough growing season or an indoor growing area.

Ah, but Autoflowers start flowering after only 2 to 3 weeks and can often be harvested after as little as 7 to 8 weeks. There is no problem getting at least one outdoor crop each summer, and an indoor gardener can grow them anytime of the year.

To add to all of this, Autoflowering *Cannabis* plants have now been bred to produce the same level of chemicals for which commercially grown regular *Cannabis* is famous. This makes it possible for the home gardener to grow useable *Cannabis* instead of buying it.

These plants, minus the chemicals, are surprising similar to tomatoes. In fact, I often compare the two plants, as you will see! The point is, if you can grow tomatoes, you can quickly learn to grow Autoflowering *Cannabis*. (Here is where I should make a lame joke about Autoflowering *Cannabis* as the new stewed tomatoes.)

There are lots of other attributes to Autoflowers that will entice the hobby gardener. However, at the top of the list, Autoflowering *Cannabis* plants are very easy to grow once you become familiar with them. In addition, they are attractive plants that usually have a delightful smell. And, you can breed your own, just as you might develop your own heirloom tomatoes.

So, for gardeners who are looking for something new and different to grow, here it is! Autoflowering *Cannabis* is a brand-new category of plants that are easy for any gardener to grow, from casual to expert.

There are a myriad of *Cannabis* books covering the photoperiod type. Many of these are coffee-table books with fantastic pictures I call bud porn. Others are written for would-be commercial growers. Often they are kept under lock and key at book stores, for some unjustified reason.

This book, however, is a very simple guide to get gardeners started and to lead them into the hobby of growing Autoflowering *Cannabis* at home. The text is predicated on the notion that you are an *organic gardener*.

By gardener, I mean that you know how to water a plant, that it needs proper light, and what to monitor to know when things are not going right. If you have never grown plants, fine, but you might need some very basic growing instructions that I don't provide here.

By organic, I mean you use what nature has given us via soil, not synthetic chemicals. After all, if you are going to grow Autoflowering *Cannabis*, you are probably going to ingest it. For this reason alone, you need to make sure yours is safe to consume. Growing organically is the best way to be sure.

If you are not already an organic gardener, I urgently point you toward a trilogy of books I have written on the subject. Dangerous chemicals have no place in a hobby situation. *Teaming with Microbes: The Organic Gardener's Guide to the Soil Food Web* (Timber Press, 2006) will introduce you to the science of organics and the soil food web. It is crucial to your understanding of how an organic system should work.

Teaming with Fungi: The Organic Grower's Guide to Mycorrhizae (Timber Press, 2017) is about mycorrhizal fungi, which are all-important for feeding plants. And, speaking of feeding plants, *Teaming with Nutrients: The Organic Gardener's Guide to Optimizing Plant Nutrition* (Timber Press, 2013) is all about what plants need to eat, from an organic perspective, and how they use the nutrients.

All three of my books will help you be a better organic gardener. They are used by many commercial *Cannabis* growers all around the globe. They will also help you grow better Autoflowering *Cannabis*.

A word or two about pictures: I wanted to include a million pictures but could not due to page limitations. So I opted to limit bud porn here and left out pictures of obvious supplies, or accents to the history mentioned and the like, as you can easily find these

elsewhere. You can and should resort to the Internet to see what is out there.

Finally, and by all means most important, I want you to realize that growing Autoflowering *Cannabis* plants is just like gardening with any other plant. Nothing more.

We are discussing gardening as a hobby and not as an occupation. As such, it is supposed to be fun and enjoyable, not stressful work. I can assure you that once you start gardening with Autoflowering *Cannabis*, you will soon see what makes them so fascinating to me and why I have come to believe that they will be the home gardener's next tomato.

SOMETHING TOTALLY NEW FOR THE HOME GARDENER

CONGRATULATIONS! YOU ARE embarking on growing something totally new to home gardeners, Autoflowering *Cannabis*. These are special plants developed as a way to improve upon the attributes of its parents, *Cannabis sativa*, *indica,* and *ruderalis*. The history of this development will give you an appreciation of what these plants are, what they can do, and what you should expect. This all adds up to why you should grow them.

Cannabis originated in Central and South Asia where it has grown at least since the Neolithic period, some 10,000 or so years, BC. By 500 BC, Russian, Japanese, and Chinese craftsmen were growing and using *Cannabis* plants to produce cloth as well as rope. These plants were probably not psychoactive, though they were most probably used as medicine.

GROWING *CANNABIS* IS NOT NEW

Somewhere along the way, the plant's psychoactive properties were discovered (and probably increased by breeding methods), though the importance of this was limited to religious ceremonies (and, surely, the occasional farmer who grew a variety that allowed family and close friends to indulge). It was *Cannabis's* ability to be made into rope, cloth, and paper that mattered.

▲ Hemp has many uses as a result of its fibrous nature and can be made into fiber, paper, yarn, textile, and rope. JOEP VOGELS, TEXTIELMUSEUM TILBURG - WIKICOMMONS.

Cannabis was so important that, in 1619, the North American colony of Virginia passed a law requiring all farmers to grow *Cannabis sativa* (L.), the variety of *Cannabis* that is known as hemp. A similar tax law was instituted in the colonies of Massachusetts and then Connecticut. In some colonies, hemp was even accepted as currency. The end result is that the US Constitution was written on hemp paper.

For about 150 years after the US Revolution, hemp was the United States' largest single cash crop. In the early 1800s, in order to stimulate production, the Canadian government started to give

out hemp seed to farmers. These efforts were successful in starting a Canadian hemp industry.

Today there are all manner of stories, most of them true, about the use of *Cannabis* by famous Americans and Canadians. The most famous of these is that as a tax-paying Virginian, George Washington, even while President of the United States, grew *Cannabis*. (Or, rather, the slaves he owned did.)
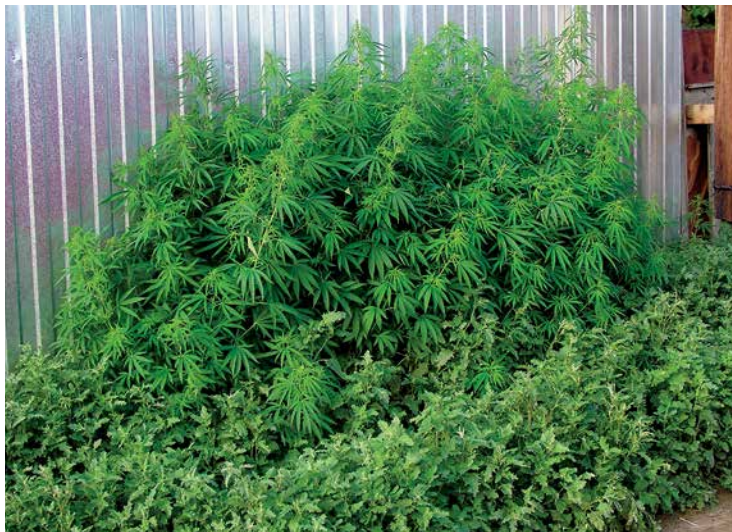
NORTH AMERICA STOPPED GROWING *CANNABIS*

In the early to mid-1900s, *Cannabis* use was stigmatized. In 1923, without a shard of scientific evidence, it was made illegal in Canada, a move precipitated by a lone Federal Narcotics Director who had just returned from a League of Nations session where the issue had been debated.

The change in Canadian law happened almost by accident and very late at night. There is scant record of what happened or why, unlike in the United States. There, a desperate Harry Jacob Anslinger, the head of the US bureau that oversaw alcohol prohibition, created and then conducted a relentless, racially biased campaign against *Cannabis*.

You can look up the rest of the story. Anslinger used racism and fake news (he was one of the best at it) to make the case for prohibition of *Cannabis*. There was absolutely no science involved.

In the 1960s, US President Richard Nixon's administration played a role in *Cannabis* prohibition, again with no science and only politics as support. Even the wife of President Ronald Regan, a few years later, added to the nonsensical treatment of *Cannabis*.

There was even pressure put on border crossings between the United States and Canada. All of a sudden, a lot of people in both countries and the rest of the world were being arrested for possessing a plant, even though there was no scientific reason for such actions.

▲ Maturing wild *Cannabis* plants (*Cannabis sativa* var. *ruderalis* Janisch; syn. *Cannabis ruderalis* Janisch) and *Atriplex tatarica* on a private driveway in Saratov City, Russia. LE.LOUP.GRIS, WIKICOMMONS.

CANNABIS MAKES A COMEBACK

This is a book on how to grow a plant, not a book about politics. It is enough to note that there has been a sea change in attitudes about *Cannabis* in North America and the rest of the world. Hence the ability to publish these words so openly.

It is now legal to grow *Cannabis* in Canada and in many of the United States. More and more states and countries throughout the world are decriminalizing possession of *Cannabis*. As a result of all of this liberalization, a huge commercial *Cannabis* industry is developing.

For the most part (setting aside exact genetic science for a simpler explanation), plants used by commercial *Cannabis* growers are of the two main types, *Cannabis sativa* and *Cannabis indica*. The former evolved to grow in equatorial areas. These are slow growers that get very tall. The latter originated in the Indian subcontinent. These are shorter and flower just a bit earlier.

The first time I saw an Autoflowering *Cannabis* plant was in the late 1970s. It was my first Lowryder, the successful result of early crosses between regular *Cannabis* and *Cannabis ruderalis*. It was a dream come true for hobby growers.

The diminutive size of this new form of *Cannabis* was of great interest. It could be grown safely hidden in the tiniest and least likely of places to be discovered. And the speed with which the plant developed was astounding! Seven weeks from seed to harvest was simply a dream. The odds of some authority like your parents stumbling onto your crop were greatly reduced.

Add to all of this, completing the dream, no photoperiod required! This was freedom from seasonality. It almost didn't matter that the THC content of this plant was not as high as experienced with the *sativas* and *indicas* of the day.

Cannabis Indica	Cannabis Sativa	Cannabis Ruderalis
Best for cooler climates	Best for warmer climates	Probably everywhere, especially in northern latitudes
Short, stocky plants (1.8-2.1 meters, 6-7 feet)	Tall plants, (2.4-3.6 meters, 8-12 feet)	Shortest plants
Wide light green leaves	Narrow dark green leaves	Varied leaves
Branch nodes closer	Branch nodes further apart	Low THC
Produces more and denser flowers	Produces fewer flowers	
Shorter grow cycle	Long grow cycle	
Usually more sedative effects	Usually more energetic effects	

Sativa versus Indica versus Ruderalis Cannabis

▲ Illustration of the three main types of *Cannabis*. WINNIE CASACOP.

Fortunately, both of these photoperiod *Cannabis* plants can cross with a third type, *Cannabis ruderalis*. The word *ruderalis* is an adjectival form of the Latin word for rubble. These plants are found in previously disturbed poor soil. The original plants are the evolved offspring of *Cannabis sativa* that developed in high-altitude regions of Russia where the growing season is very short.

Cannabis ruderalis plants are day-neutral, naturally autoflowering. They are low in psychoactive chemicals but can cross with *Cannabis sativa* and *Cannabis indica*. Resultant seed can have *Cannabis ruderalis's* ability to flower based solely on genetic maturity and not daylength. They can also have the higher potency mix of chemicals for which the bigger plants are grown.

DEVELOPMENT OF AUTOFLOWERING *CANNABIS*

Add together the diminutive size of *ruderalis* plants plus their fast-growing characteristics, and all of a sudden you have bred a new plant variety that can be easily grown at home! It grows fast in any photoperiod, doesn't need great soil, and is small in size when it comes to *Cannabis*.

Breeding efforts continued to bear fruit (actually, seeds), resulting in smaller plants, 60 cm (2 feet) or less, which could be grown from seed to harvest in only 7 to 9 weeks. They are perfect for growing at home, on a deck, or indoors.

A second type of plant was developed, known as, loosely, Super Autoflowering *Cannabis*. These are slightly larger plants that produce a higher (oops, better use larger) yield but can take 100 days to grow, which is still very short for *Cannabis*.

While their relatively larger size may discourage a few indoor home gardeners who don't have as much room in which to grow them, Super Autoflowers are fine for outdoor garden or deck gardeners. In fact, more and more commercial growers are using them because at least they don't have to worry about daylength and frosts.

There are advantages to growing either type of Autoflowering *Cannabis*. If you lack space entirely, consider the smaller kind. If you want more yield, go with the Supers.

GROWING AUTOFLOWERING *CANNABIS* REALLY IS A LOT LIKE GROWING TOMATOES

From my experience, growing Autoflowering *Cannabis* is very much like growing tomatoes. I don't make this comparison lightly. As with

▲ Unlike their cousins, Autoflowering *Cannabis,* foreground, are small plants. However, breeding efforts have resulted in larger Super Autoflowering *Cannabis* plants like the taller ones here. SEBRING FREHNER.

tomatoes, Autoflowering *Cannabis* plants are really easy to germinate and grow. The plant does almost all of the work. The harvest is useable and enjoyable and one which you will probably never become tired of, unlike with zucchini or kale.

You can grow Autoflowers from germination to harvest in as little as 7 to 8 weeks. That is about the time you can get first early tomatoes. Autoflowering *Cannabis* plants have tomatoes beat, however, as they start to flower after only 2 or 3 weeks. This makes them easy, easy, easy to grow, while tomatoes are just easy, easy.

The analogy to tomatoes breaks down when it comes to the goal of growing *Cannabis*. It is the production of flowers that contain medicinal and recreational qualities for which *Cannabis* is known. With tomatoes, it is the fruit formed *after* the flowers.

However, to get back on track with comparing both plants, a gardener can easily end up growing the proverbial 40-dollar tomato. A lot of money can be wasted growing a plant that produces poorly. There is an Autoflowering *Cannabis* equivalent, but that is only if you don't know what you are doing, which is what this book is for.

And, just as the tomato can be grown for its contribution to nutritional health (in part because of the interesting chemistry of the lycopene it contains), there are medicinal values to Autoflowering *Cannabis* plants as a result of equally interesting chemistry. As more research is completed as a result of legalization, more health benefits are being discovered or confirmed.

Finally, home gardeners can produce homegrown Autoflowering seeds, just as we do with tomatoes (though there is a difference explained later). You can develop your own strains of Autoflowering *Cannabis* just as you can develop your own heritage or heirloom tomatoes. This makes growing Autoflowering *Cannabis* a really multifaceted horticultural hobby.

EASY TO GROW ONCE YOU KNOW THE ROPES

Once again (and it won't be the last reminder), growing Autoflowering *Cannabis,* like growing tomatoes, is easy. With both, you stick a

seed into damp soil, and you most probably get a plant, even if you do nothing else but water. You may not get *good* tomatoes or *many Cannabis* flowers, but you will have some harvest unless you kill the plant.

Ah, but who wants just a plant? If you are a gardener, you want the best plant you can grow. In short, as my Dad taught me (though he did not approve of *Cannabis*, that is for sure!), there is vast difference between growing an easy plant and growing an easy plant properly. This is where *DIY AutoFlowering Cannabis: An Easy Way to Grow Your Own* comes in.

If you want lots of flavorful tomatoes, you need to prune and feed properly, stake correctly, and make sure there is effective pollination. Still, there is not a lot of work involved. The same goes with successfully growing Autoflowering *Cannabis* plants. However, they grow so fast that it isn't enough to just know what the plants need; you need to know when they need it as well.

They are new to you now, but Autoflowering *Cannabis* plants are simply plants, and like any plant, getting the cultural information you need and growing it is all it takes. Once you finish the next chapters, you will be on your way.

LEGALITY

Cannabis legalization doesn't mean growing *Cannabis,* even the autoflowering kind, is free of restrictions. Your jurisdiction may limit the number of plants you can grow at one time. Or you may be limited to the amount of *Cannabis* in general that you are allowed to possess at any given time.

The bottom line, if you are going to grow Autoflowering *Cannabis*, make sure you know what the rules are in your jurisdiction. Obey them.

ROAD MAP

This book will first cover a bit of the special chemistry and botany associated with all *Cannabis* plants. This will be simple and

broad-brushed and is included because I need to make sure we are using the same terms and you know what (and where) to look as the plant develops.

Autoflowering *Cannabis* produce special chemicals which are most probably the reasons you are growing the plant. Psychoactivity, medicinal qualities, flavor, and smell are as important to Autoflowering *Cannabis* harvests as taste is to a harvest of ripe tomatoes. These are covered.

Next is a look at the supplies needed to grow Autoflowering *Cannabis* at home. We are not doing a commercial grow. Most of the stuff can be collected from things you already use, but Autoflowers may need some special things you don't already have.

This is followed by how to specifically grow Autoflowering *Cannabis* plants. And, once you do, how and when to harvest, cure, and store your harvest.

After an introduction to breeding your own Autoflowering *Cannabis* (remember, this is a very simple guide), I cover some of the Landrace and special strains which are the basis of most seed you can purchase today. This is capped off by some predictions for the future development of this brand-new category of hobby plants.