



ATLAS SEED

• *Cannabis Bred for Agriculture* •

AUTOFLOWERING GUIDE

— *Bred by Farmers, For Farmers* —

ATLASSEED.COM



COMPANY BACKGROUND

Atlas Seed breeds and produces agronomically oriented day-neutral & fast finishing photoperiod cannabis and hemp varieties for the global production market, focusing primarily on highest yields, mold resistance, and potency. Cannabis Bred for Agriculture.

Atlas Seed was founded by seasoned winegrape, vegetable, and cannabis farmers in Sonoma County, California that were searching for genetics that didn't yet exist: uniform, stable, & vigorous hybrids that would fit into their existing, time tested agricultural model.

Atlas now boasts a state of the art, dedicated breeding program with continuous improvements to inbred parent lines delivering industry leading field adaptability and stability with uniform performance and cannabinoid production. Atlas is actively forming partnerships with nurseries nationwide to make their genetics available in every legal growing state. When you choose Atlas Seed, you're choosing field scale cannabis genetics bred by farmers, for farmers.

— PRODUCTS & SERVICES —

Feminized Autoflowering Seed

At the most competitive prices in the industry, we offer feminized autoflowering seed for planting at field scale. Our catalogue features hybrid strains that show excellent vigor and yields, and can be grown for extraction or finished flower alike. Our current feminization rates begin at 99.99%. Feminization certification available upon request.

Grower Support & Consulting

Our team has an immense amount of experience with production agriculture and cannabis, and is dedicated to helping you succeed at scale. We will work closely and directly with you to give you the best chance possible to pull off game changing harvests.

Contract Splits

We provide our genetics up front to key partners with a percentage split of the total yield after harvest.

Licensing Agreements

We license our genetics to nurseries and arrange royalty splits on a case by case basis. Please get in touch for more information.

Strain Development

For dispensaries and retail brands alike we develop proprietary strains that feature on trend consumer qualities and can be cultivated and priced at the best value possible.

Plant Starts

We have relationships with licensed nursery partners in California and the mid-Atlantic that can deliver plant starts through Metrc. Minimum quantities begin at 1000 seedlings.



Day Neutral Growing Preferences

Day neutral cannabis, scientifically known as *C. ruderalis* or colloquially referred to as “auto-flowering” cannabis, prefers long, dry, and sunny days. During establishment the plant requires regular watering to maintain even moisture. The soil should never drop below 50% of capacity, and on hot days (above 80° F) should stay above 80%. Early applications of a balanced vegetative feeding program are critical to developing a well branched, large plant. The goal is to create as many flowering sites as possible within 3-5 weeks of growth, at which point they will begin to show signs of flowering. At this time it is best to maintain a strong vegetative feeding program and begin to slowly introduce more phosphorus, potassium, and micronutrients to prepare for the plants reproductive (flowering) phase. The plants should continue to grow quickly and stack up flowering sites from weeks 3-8. During Weeks 8-12 the flowering sites will bulk up and become dense, especially at the very end of the cycle.

Plants that grow during the summer when the days are long, warm, and sunny will ripen and be ready to harvest faster than in the winter where the shorter and colder days with less light can add an extra 10-20 days on the time to harvest. These plants have a strong appetite for light! The more light they receive, the faster they grow and come to maturity. True autoflowering plants can come to maturity even under a 24 hour daytime light cycle (no darkness/night). Weak, low watt lighting typically used to keep clone plants “in veg” will not speed up the growth of autoflower plants or prevent them from flowering.

One of the most important parts of growing day-neutral varieties is to minimize transplant shock. Any shock resulting from improper transplanting can contribute significantly to reduced yields. Unlike other agricultural crops, especially vegetables and flowers, day neutral cannabis varieties want to be transplanted as fast as equipment and handling will allow for, or within 10 days of emergence.





BEST TIME TO PLANT

- Fully Outdoors: After last frost date to 12 weeks before first frost date
- Under Hoops: 2 weeks before last frost date to 8 weeks before first frost date

Note: Can use floating row cover outdoors or under hoops when they are young to protect in an emergency

- Night time lows ideally above 45° F
- Soil temps ideally above 64° F

Days to Seed Emergence: 2-5 | Days to Flower: 21-35 | Days to Maturity: 68 (Summer) - 95 (Winter)

Notes on Outcome Variation

The data we present in the guide is what we believe is most representative of what most growers can expect. However, keep in mind that the following variables will affect your outcome:

- Establishment Success: Direct seeding and / or transplanting your plants properly is the single most important factor in establishing a healthy plant that maximizes its vegetative potential
- Environmental Differences: As a grower you will see significant outcome variations with our strains at different latitudes, microclimates, and especially if you are growing indoor versus outdoor. Nighttime air and soil temperatures will affect your vegetative growth second only to establishment success.
- Yield vs. Potency: The maturity times we've listed are for peak season outdoor climates, and for when we think your optimal yield and potency will be. Keep in mind that as your crop ripens past the times listed, you will see increasing yields and possibly decreasing potency. We recommend all growers test for potency often in the final phases of growth

Gummibears

Gummibears offers our best blend of mold resistance, yield, and potency, for those who want to keep botrytis at bay but still throw down a hefty crop. The lineage of this hybrid combines our mold resistant master donor Atlas Star with OG influence from our Mythic OG line. Compact and consistent, finished flowers carry a lemon, parmesan, fuel nose.

Agronomics

Classification	Ruderalis / Autoflowering
Drought + Cold Tolerance	Good
Mold Resistance	Good
Vigor	Excellent
Seed Type	Feminized
Feminization Percentage	99.9% - 99.96
Maturity Time	75 Days
Habit	Semibranching
Yield per Plant	3 - 4 oz
Average Harvest Height	30 in

Genetics

Sativa/Indica %	50/50
Aroma/Nose	Lemon, Parmesan, Fuel
Flower Gestalt	Compact, Round, Dense
Potency (%)	15 - 20

Availability

Available Now



Grease Gun

With nearly table top consistency and excellent yields, Grease Gun is the gassiest auto we have available or know of for that matter. Though it will be slower to mature compared to the rest of our catalog due to its OG, the nose and trichomes will be worth wait and easy to move out the door in the finished flower market.

Agronomics

Classification	Ruderalis / Autoflowering
Drought + Cold Tolerance	Good
Mold Resistance	Fair
Vigor	Excellent
Seed Type	Feminized
Feminization Percentage	99.9% - 99.96
Maturity Time	80 Days
Habit	Branching
Yield per Plant	3.5 - 4.5 oz
Average Harvest Height	36 in

Genetics

Sativa/Indica %	60/40
Aroma/Nose	Chem, Fuel, Citrus, Funk
Flower Gestalt	Large, Sticky, Dense
Potency (%)	17 - 22

Availability

Available Now



TriCross

With gassy sweet aromas of currants and citrus, our TriCross variety has consistent structure in the field, with even lateral branching and internodal spacing. An efficient leaf to bud ratio gives you maximum usable material, winning this hybrid the prize for post-harvest processing champion. Frosty finished nugs and debatably the best nose in our catalogue make this flower an easy to move auto. The TriCross lineage is a triple cross of Mythic OG x Field Cookies x Gravenstein parent lines.

Agronomics

Classification	Ruderalis / Autoflowering
Drought + Cold Tolerance	Good
Mold Resistance	Good
Vigor	Excellent
Seed Type	Feminized
Feminization Percentage	99.9% - 99.96
Maturity Time	75 Days
Habit	Semibranching
Yield per Plant	3 - 4 oz
Average Harvest Height	36 in

Genetics

Sativa/Indica %	30/70
Aroma/Nose	Currants, Candied Citrus, Fuel
Flower Gestalt	Compact, Dense, Frosty, Light Presence Purple Pheno (15-25%)
Potency (%)	15 - 20

Availability

Available Now



Top Gun

A cross of our master donor for mold resistance and our quick finishing auto Cotton Candy, Top Gun is an auto that finishes so fast it will help you outmaneuver botrytis and volatile markets. Our most mold resistant strain, we are recommending this for growers who want to get a crop in and out and sold before the inevitable August per unit price drop. Compact plants keep to themselves but chunk up nicely, allowing for dense plantings and great yields. Get it. Get er' in. Get er' done.

Agronomics

Classification	Ruderalis / Autoflowering
Drought + Cold Tolerance	Good
Mold Resistance	Best in Catalog
Vigor	Excellent
Seed Type	Feminized
Feminization Percentage	99.9% - 99.96
Maturity Time	60 Days
Habit	Single Stem
Yield per Plant	2.5 - 3.5 oz
Average Harvest Height	28 in

Genetics

Sativa/Indica %	50/50
Aroma/Nose	Toasted Nuts, Sugar
Flower Gestalt	Compact, Round, Dense
Potency (%)	16 - 21

Availability

Available Now



Froot by the Foot

Boasting a cotton candy, fuel nose, this variety will give you the best bang for you buck on bulk weight and cannabinoids per square foot of canopy. Hence the name, Froot by the Foot. Finished flower denses up as nice as we've seen with auto's yet for an easy sell with high bag appeal. For those of you who haven't given auto's a shot yet this will be the hybrid that will win you over for good. Lineage influence is our Mythic OG line crossed with our Cotton Candy variety.

Agronomics

Classification	Ruderalis / Autoflowering
Drought + Cold Tolerance	Good
Mold Resistance	Good
Vigor	Excellent
Seed Type	Feminized
Feminization Percentage	99.9% - 99.96
Maturity Time	70 Days
Habit	Semibranching
Yield per Plant	3.5 - 4 oz
Average Harvest Height	36 in

Genetics

Sativa/Indica %	40/60
Aroma/Nose	Cotton Candy, Fuel
Flower Gestalt	Large, Dense, Frosty
Potency (%)	18 - 23

Availability

Available Now



Fog Dog

Fruit and sugar forward with a hint of fuel, this strain boasts excellent consistency in the field, with uniform lateral branching, comfortable internodal spacing, and over overall compact size. This is our second fast finishing strain outdoors, finishing between 65 - 70 days. It is also the best strain we have available for denser plantings, in the 20-25k plants per acre range. The finished flower has excellent bag appeal, and the lineage influence is primarily Cotton Candy crossed with our Gravenstein variety.

Agronomics

Classification	Ruderalis / Autoflowering
Drought + Cold Tolerance	Good
Mold Resistance	Excellent
Vigor	Excellent
Seed Type	Feminized
Feminization Percentage	99.9% - 99.96
Maturity Time	65 Days
Habit	Single Stem
Yield per Plant	2.5 - 3.5 oz
Average Harvest Height	36 in

Genetics

Sativa/Indica %	20/80
Aroma/Nose	Sweet Fruit, Sugar, Fuel
Flowering Gestalt	Compact, Dense, Super Frosty, Stronger Presence Purple Pheno (40% - 60%)
Potency (%)	15 - 20

Availability

Available Now



Propagation Guide

Successful greenhouse propagation requires careful attention to detail and consideration of many factors. Unless your farm already has a successful seedling propagation program in place, we recommend you purchase plants, especially for larger orders where the stakes are higher.

Below we have made a list of things for you to consider before you sow your seeds.

Our recommendations are made based on many years of experience.

Sizing Trays

We recommend a 128 cell tray if you have access to elle pots or grow coons. Otherwise, pick a tray that you have locally available and fits with your medium of choice. Consider how much greenhouse space you have when making this decision, as the 128 cell trays are 2.5x more space efficient than the 50 cell trays.

Rooting Medium

There are a ton of options out there. The most important thing is to use a floating medium, or a material that allows you to pull the plants out of the trays before they are rootbound. If you are using grow coons be sure to utilize a sterile potting mix and tamp down your seed bed firmly.

Recommended Solutions

- Grow Coons
- Elle Pots
- Root Riot Cubes
- Rapid Rooter

Planting

Plant at roughly $\frac{1}{4}$ " & gently cover seeds with soil.

Watering

When first planting the seeds, water them in heavily, though not to the point of leaving standing water in your cell tray. Keep them on the spectrum from moist to wet (not soaked or soggy!) prior to emergence. After emergence water anywhere from 1-3x day depending on your medium and temperatures. They enjoy a wet to dry swing, so don't keep them wet at all times. Conversely, never allow them to dry down completely.

Days to Emergence

The seeds should germinate for 48-72 hours and should be finished emerging after 6 days.

Temperature

We have found ideal germination temperature range to be 78-80° F. Heat mats are extremely helpful in uniform and quick germination. Depending on your climate and season, a heat mat on during the day could be too hot. However, night temperatures may be too cold. Therefore, we put heat mats on a timer so they come on at 6 pm and go off at 8 am.

Days to Transplant

Transplant as early as your equipment, labor, and the physical condition of the plants allow. If you let the plants sit in their containers too long, it can stress them into early flower, which can significantly reduce yields.

We recommend planting at 9-14 days from sowing. If you have to let the plants sit in trays for longer than is ideal, make sure they are getting watered and fertilized appropriately.

Light

Add supplemental light if it is convenient. Up to 18 hours a day of total light is appropriate when possible.

Avoiding Shock

Avoid letting your starts become rootbound. Additionally if the root ball (exposed roots) are excessively exposed to light or handling, this can shock your plants. Transplant in cool weather.



Fertility

Feed with mycorrhizae after 72 hours. Begin feeding daily at emergence, increasing the strength of the feeding daily. Feed mycorrhiza again the day of transplant.

Planting Overages

If you need 10,000 plants in the field, sow 13,500 seeds. ie. sow 35% extra.

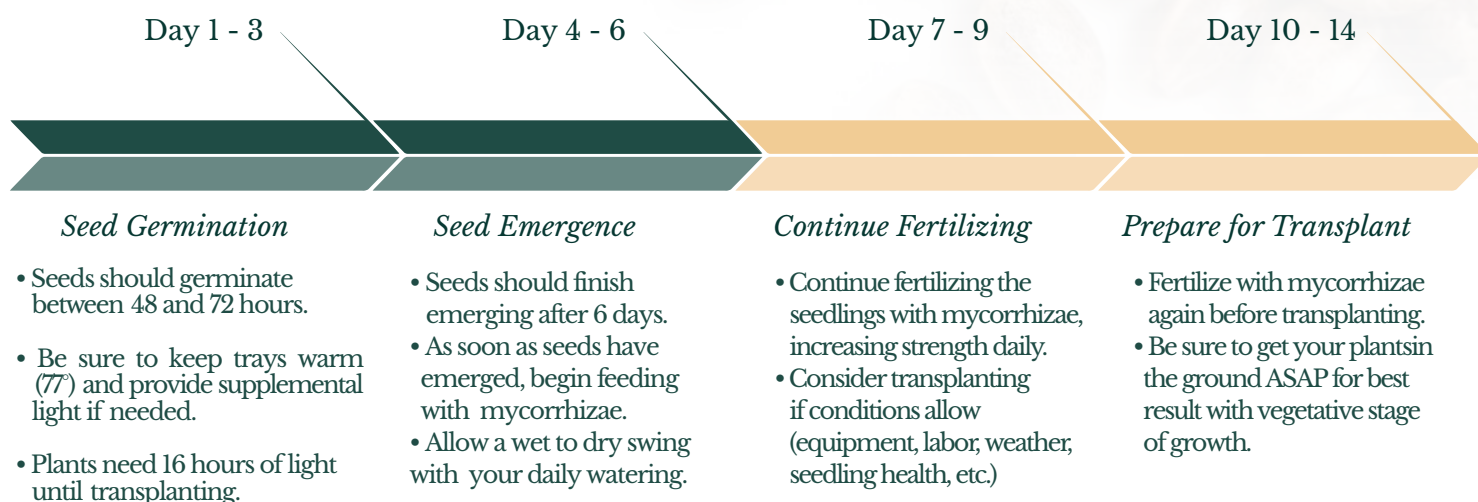
Remember, you will lose plants in three different ways:

1. Some seeds will not germinate.
2. Some plants will lack vigor after germination.
3. Some plants will break during transplanting.

Greenhouse Pests & Diseases

Seeds have distinct advantages to clones, in that pests cannot be transmitted on seeds. If you have clones in the same area as seedlings, be conscious of pest transmission. We suggest applying RootShield to seedlings to control damping off. Additionally, avoid overwatering seedlings, as this can lead to damping off.

Timeline





Plant Spacing

Recommended Plants per:

- Acre - 11,000-18,000 plants
- 10,000 square feet - 3,400 - 4,600 plants

Common Plant Spacing:

- Field planted (spacing is based on center to center -> tractor wheel spacing)
 - 1 row on a 30" bed
 - 12" apart in row -> 17,424 plants per acre
 - 16" apart in a row -> 13,068 plants per acre
 - 18" apart in a row -> 11,606 plants per acre
- 3 rows on a 60" bed
 - 12" apart in row -> 26,136 plants per acre
 - 18" apart in row -> 17,424 plants per acre
- 2 rows on a 60" bed
 - 12" apart in row -> 17,424 plants per acre
 - 16" apart in a row -> 13,068 plants per acre
 - 18" apart in a row -> 11,606 plants per acre
- Raised Garden bed or greenhouse planted in pots
 - 18" on center (offset planting)
 - On a 100' X 5' bed that would be ~222 plants

Pricing Guide



Feminized, Autoflowering Cannabis Seeds

Atlas Seed is a feminized, day neutral cannabis seed company servicing medium to large scale farmers. Our genetics are hand selected for field scale applications.

Amount	Price Per Seed	Price Per Seedling*
1,000 - 2,000	\$2.10	\$2.70
2,000 - 5,000	\$1.70	\$2.30
5,000 - 20,000	\$1.30	\$1.90
20,000 - 80,000	\$1.05	\$1.65
80,000 - 200,000	\$0.95	\$1.55
200,000+	Custom Pricing	Custom Pricing

Seedlings*:

Started plants are available for delivery to qualifying California partners within our delivery radius. Please inquire for more information

Order Info:

To place an order, email Sales@AtlasSeed.com or call 707.277.1709



ATLAS SEED

• *Cannabis Bred for Agriculture* •

 @AtlasSeed

 [linkedin.com/company/atlas-seed](https://www.linkedin.com/company/atlas-seed)

WWW.ATLASSEED.COM | SALES@ATLASSEED.COM | 707-277-1709