

Ranunculus Growing Guide for the North

Hotchkiss Flower Farm | www.hotchkissflowerfarm.ca

There are multiple ways to grow ranunculus successfully in the north. On an average year, we technically can grow ranunculus most of the grow season, if soil is cool enough, and plants receive proper light requirements in their first 50 days of growth. This guide outlines methods we use on the Hotchkiss Flower Farm with a successful harvest. It also helps you outline your own guide for an optimal ranunculus schedule.

Key Information

Ranunculus are both temperature and day length sensitive. Our days in the north get very long, very fast. During the optimal temperatures for ranunculus to grow and bloom, the day length can be tricky to navigate in the North. Especially because the ground is still frozen when outdoor light is optimal for ranunculus. Ranunculus that are exposed to more than 13 hours of day length pre-maturely will put energy into producing new corms and less energy into blooming. This results in less flowers the plant will produce. Northern gardeners and flower farmers are generally struggling with a short blooming window, not because of heat, but because the day length triggered corm production. Improper light requirements will also result in a weaker plant that can not take environmental stressors well such as resistance to tarnish plant bugs or temperature swings. To improve plants bloom yields per corm, Ranunculus need less than 13 hours of day length in the first 50 days of growth. Triggering flowering can be induced when day length is increased to 13.5 hours/ day after it has had 50 days of 13 hours or less of light per day. Temperature also greatly matters. Ranunculus thrive when the average day time temperatures are between 15°C and 21°C. Optimal Nighttime temperatures average around 4°C and 10°C.

On March 30th in Manning Alberta (where our farm is) the day length reaches the 13 hour mark. The goal to have optimal yields of blooms from ranunculus is to make sure ranunculus that are 50 days old have only been exposed to a maximum of 13 hours of light per day.

Maximize yield of blooms key notes

- 13 hours or less of day length for the first 50 days of growth
- Daytime temperatures between 15°C and 21°C optimizes bloom yield
- Nighttime temperatures of 4°C and 10°C optimizes bloom yield
- Optimal flowering is induced when day length is 13.5 hours or more
- In the north, day length matters more than temperature

The biggest challenge for growing ranunculus in the north is having optimal day length and optimal temperatures line up. For this reason, we have found growing ranunculus in the shade (from trees or buildings) to be optimal. As the sun becomes higher in the season, ranunculus will eventually reach optimal day length and temperature on an average year in northern Alberta. Soil in the north is much cooler, longer. This plays a huge help in productivity of a ranunculus corm. Shade cloth may also help where no shade is available. Growing them covered outdoors for the first 50 days under shade cloth, and then exposing them to more light after the 50 day old mark will induce optimal blooming and higher yields. 75 to 80% shade cloth is what we use on our farm. For this method, it is recommended to take shade cloth off in the morning at the 50 day old mark, and covering again when they have had 13.5 hours of full light. Doing this for about 3 days will prevent the leaves from being burned. Unless it is overcast, the shade cover can come completely off. Once hardened off to full sun, they can stay completely uncovered.

Growing for high bloom yields

For a head start on ranunculus, pre-sprouting is a fantastic option. Ranunculus typically take 7 to 10 days to sprout roots. When roots are sprouted they are able to be planted out immediately. Alternatively they may be grown in a light and temperature controlled environment for the first 50 days before planting out. In our climate here in the north, having too much green growth and putting out transplants when day length is optimal to trigger blooming can set plants back. Often we get very cold this early in the season which can cause the foliage to die back and have to regrow. This can delay blooming by several weeks or reduce the yields of blooms. Row covers are essential for covering plants that have been grown to foliage stage and planted out early. It often is too risky for new foliage that early, and if the ground gets colder than -5°C, the corms may not recover foliage regrowth very quickly without some protection. They can survive in the ground at that temperature, but rarely will in pots or seedling trays. Planting out later when temperatures are warmer often yields better in our climate, when daylength hours are managed. Planting out corms that have only sprouted roots but have not produced foliage has proven higher yields on our farm when given appropriate day length hours using controls such as shade cloth. We have found warmer temperatures and proper day length requirements result in higher yields vs cold temps and freezing ground. Daylength always being the key factor.

Planting in pots or crates may be a fantastic option, however, the soil will be warmer and harder to maintain at a favorable temp below 10°C. Corms really like to be cool. They really

love the 8°C mark. Warmer soil during the early stages of a ranunculus grow cycle always results in fewer blooms it will produce. However, if the soil is 16°C it will still matter less than if it has improper day length in the first 50 days. Temperature will matter more in pots or crates if temps are reaching the mid 20's. Moving pots or crates into shade can extend bloom time and yields as the temperatures increase. Ranunculus will begin going dormant when daytime temperatures exceed 25°C. At 25°C they trigger to put energy into the corms for next years blooms instead of this years blooms. When 25°C is a consistent temperature they are exposed to, they begin going into dormancy and drying out. They stop taking up water, in preparation to dry out. When this occurs, it is important to stop watering them so they can quickly dry out and they do not rot from too much moisture. They can be dug up, set somewhere dark to completely dry out and cure. Once cured, they can be stored loosely in a paper bag or cardboard box somewhere cool and dark that does not have much humidity.

Pre-sprouting is easy if the corms are exposed to the proper moisture, darkness and temperature. It generally takes 90 days from pre-sprouted corms to first blooms. We have found pre-sprouting to be optimal when corms are soaked for 30-60 minutes, placed in a tray of well hydrated soil that has been amended with worm castings (or Superworm Soil is a pre amended potting soil) and covered with an inch of soil. Ensuring the soil is well hydrated, but not sopping wet. Cover loosely with a black garbage bag and placed somewhere dark, around 4 – 15°C. Warmer temperature speeds up pre-sprout, but is not optimal later. Ideally 4-8°C during pre-sprout will yield in more blooms. While 10-15°C will yield in blooms sooner, but fewer of them and larger corm growth.

- Pre-sprouting takes 7-10 days
- Soaking 30-60 minutes placed in well hydrated soil is optimal
- Darkness is required
- Optimal temp of 4-8°C during pre-sprout will yield in more blooms
- 10-15°C will yield in blooms sooner and larger corm growth, but less flowers overall
- Worm Casting aid in proper hydration & beneficial microbes

On Hotchkiss Flower Farm we find it optimal to plant corms out before foliage growth to maintain cooler optimal root growth temperature for higher bloom yields later. Our soil outside stays cooler, longer here in the north. Planting outside to achieve those early optimal temperatures is much easier than trying to achieve them indoors. We generally do not have an average temperature over 25°C where we are located, so above average temperatures are less worrisome for us than day length.

TIP: We use a living soil by Annelida Soil Solutions to pre-sprout for the microbial benefits. The product is called Superworm Soil. When started in this living soil, the plant begins

establishing a rhizosphere on day one, which can greatly reduce transplant shock and rapidly increase higher yields sooner. Having a rhizosphere in pre-sprout stage saves the plant time when transplanted out as it doesn't need to establish one, it can begin growing and feeding itself near immediately. Using this amended soil has proven to improve heat and cold tolerance on our ranunculus crops about 5°C in above average years. Foliage application of Premium Liquid Extract by Annelida Soil Solutions weekly has also improved bloom quality and plant vigour.

We have also found soaking the corms for less time than generally recommended and putting into well hydrated soil reduces the risk of corm rot. The corms will continue to hydrate from the soil while establishing a rhizosphere in partnership with the beneficial microbes and fungi.

Alternative to Pre Sprouting

Direct sowing corms is possible in our climate. It is not optimal for cut flower production, but is an option for landscape flowers in the home garden. It is recommend to plant somewhere that has strong afternoon shade to optimize this method. Dig a spot 4 inches deep in the garden where there will be afternoon shade. Fill hole with water and drop dry corms in. Once water has drained away arrange corms 4 inches apart and cover with 1 inch of soil. Add more water and then fill in remaining soil. Water in very well. When temperatures increase later in the season, mulch over with 1 inch of dry leaves to help keep soil cool. Amending the Soil with Superworm Soil can improve heat tolerance and environmental stressors.

Planting Tips for the North

- Plant 4 inches deep (keeps corms cooler longer for higher bloom yields)
- Cover with leaf mulch when daytime temperatures increase
- Keep well hydrated
- Spraying with Premium Liquid Extract on leaves prevents tarnished plant bug damage
- Shade early in plant development increases yields
- Day length of 13.5 hours or more on plants 50 days old will trigger blooming
- Keep the soil as cool as possible to extend the duration of bloom time and yields
- Pre-sprouted corms/ plants can be planted out when night time temperatures are consistently 1°C and warmer. Ranunculus can handle -4°C (cover recommended)

Simplified Most successful method in the north

We have found the best option for growing ranunculus outdoors in the north is to plant pre-sprout corms anywhere between April 15th and May 1st Depending on the year and temperature. They can be planted out when night time temps are around 1°C or higher consistently. Plant outside 4 inches deep cover with frost cloth if forecast has below freezing temps. Cover with shade cloth until the plant has reached 50 days old. This can be determined by counting from the day you started the pre-sprout by adding 7 days (to sprout) with 50 days (to grow) and counting a total of 57 days from the day you started the pre sprout. Once 50 days has been met, remove shade cloth to induce blooming by exposing to longer day length. If it is an above average year for temperatures, cover the soil around the plants with 1 inch of leaf mulch to help keep the corm cooler and blooming longer. The cooler the soil, the better the yield.

Calculating a schedule, knowing your day length schedule and average temperature estimated days, it helps tremendously. Calculating 90 days back from optimal temperatures date can help establish a timeframe for growing and harvest possibilities in your area. The average dates can be found online on websites such as Weather Spark to see temperature averages for your area. Day length can be found on websites such as Sunrise Sunset. Finding these dates can help optimize a schedule and a plan to have the highest yields possible as soon as possible for that area.

Plant out window is pretty well fixed within a 3 to 4 week window for optimal bloom yields in the north, based on average temps. What can be altered is how many days you want to grow ranunculus indoors under controlled temperatures, and whether you need to grow them under shade outdoors. Ranunculus can be planted out later in the north, most definitely. Even up to the end of May! However, the number of blooms will be reduced, and more energy will be put into the corm for next years blooms. Instead of 10 blooms, you may only get 3 or 4 from a corm. Planting out later than optimal window will also speed up the blooming process, just be prepared to have fewer blooms than if grown at optimal temperatures.

Below are some key points of information that is crucial to know when optimising your ranunculus crop. Especially here in the north where days get rapidly longer.

- Day length date to determine if you need to cover plant with shade cloth

- Average optimal temperature dates to determine when you can plant them out
- Average optimal temperature dates to determine when blooming will trigger
- Calculate how many days are required to grow indoors under controlled conditions
- Calculate when you need to pre-sprout
- Determine when your area exceeds 25°C. Temp ranunculus is triggered to dormancy
- Determine what target window works best for you and customize it

EXAMPLE of our farm dates for Spring Temperatures

My day length reaches 13.5 hours on this date _____ April 5th

My Soonest possible plant out target date is estimated to be _____ April 1st

My Latest plant out target date is estimated to be _____ May 1st

My Average plant out target date is estimated to be _____ April 15th

My average day temperature exceeds 25°C on this date _____ N/A in Manning

My optimal outdoor rooting/ growing temps are between _____ April 1st and May 1st

Dates where average daytime temps are between 4 and 15°C

My optimal outdoor blooming temps are between _____ May 1st and June 25th

Dates where average daytime temps are between 15 and 21°C

Target optimal growing window for Manning

My average night time temperature reaches 1°C on this date _____ May 1st

My average day temperature reaches 15°C on this date _____ May 1st

90 days back from (date above) average day temperature date _____ March 5th

7 days back from (date above) when I need to pre-sprout corms _____ February 26th

Date my ranunculus are 50 days old (count 50 days from 90 days date) _____ April 24th

Plant out target date _____ April 15th

Number of Days grown indoors at 8°C with 13hr light _____ 48 days

Count between pre-sprout date and plant out date

Number of Days Shade Cloth required _____ 9 days

Count number of days between plant out target and 50 day old date

Target optimal blooming window for Manning

My average night time temperature reaches 10°C on this date _____ July 1st

My average day temperature reaches 21°C on this date _____ July 1st

90 days back from (date above) average day temperature date _____ April 2nd

7 days back from (date above) when I need to pre-sprout corms _____ March 26th

Date my ranunculus are 50 days old (add 50 days to 90 days date) _____ May 22nd

Plant out target date _____ April 15th

Number of Days grown indoors at 8°C with 13hr light _____ 20 days

Count between pre-sprout date and plant out date

Number of Days Shade Cloth required _____ 37 days

Count number of days between plant out target and 50 day old date

Schedule example from above data for optimal bloom yield

Pre-sprout: **Mar 26th**

Plant out target date: **April 15th**

Date shade cloth can come off: **May 22nd**

To summarize, to increase bloom yields the soonest as possible, the Target Bloom time target window is optimal for what works for us here in Manning Alberta.

Growing ranunculus indoors at those optimal requirements of 8°C and 13 hours of light for 50 days can be tricky and require a lot of space. Because our soil here is very cold for a long period of time, growing at these optimal temperatures can be reduced by 2 weeks based on our soil temps. This means we can bump back our pre-sprout and plant out dates by 2 weeks. I can do this by planting ranunculus corms 4 inches deep, when just rooted, no foliage has grown. Covering with 1 inch of leaf mulch will also greatly help hold those optimal temperatures for higher yields. The optimal growing temps will extend into the optimal blooming window, but both will be achieved. It is kind of a sweet spot for ranunculus corms. It is crucial to ensure the right light requirements are met up to that 50 day mark to achieve

higher yields. In the north, we do not need to worry as much about warm temperature, we need to turn our attention to day length. Unless it is an above average year.

When you live somewhere that does not normally have an average high temperature exceeding 25°C, the known general ranunculus rules and growing guidelines do not apply to you. We make our own rules 😊

Ranunculus Schedule

Fill in your information

My day length reaches 13.5 hours on this date _____

My Soonest possible plant out target date is estimated to be _____

My Latest plant out target date is estimated to be _____

My Average plant out target date is estimated to be _____

My average day temperature exceeds 25°C on this date _____

My optimal outdoor rooting/ growing temps are between _____

Dates where average daytime temps are between 4 and 15°C

My optimal outdoor blooming temps are between _____

Dates where average daytime temps are between 15 and 21°C

Target optimal growing window

My average night time temperature reaches 1°C on this date _____

My average day temperature reaches 15°C on this date _____

90 days back from (date above) average day temperature date _____

7 days back from (date above) when I need to pre-sprout corms _____

Date my ranunculus are 50 days old (count 50 days from 90 days date) _____

Plant out target date _____

Number of Days grown indoors at 8°C with 13hr light _____

Count between pre-sprout date and plant out date

Number of Days Shade Cloth required _____

Count number of days between plant out target and 50 day old date

Target optimal blooming window

My average night time temperature reaches 10°C on this date _____

My average day temperature reaches 21°C on this date _____

90 days back from (date above) average day temperature date _____

7 days back from (date above) when I need to pre-sprout corms _____

Date my ranunculus are 50 days old (add 50 days to 90 days date) _____

Plant out target date _____

Number of Days grown indoors at 8°C with 13hr light _____

Count between pre-sprout date and plant out date

Number of Days Shade Cloth required _____

Count number of days between plant out target and 50 day old date

My Schedule from above data for optimal bloom yield

Pre-sprout: _____

Plant out target date: _____

Date shade cloth comes off: _____