

These are general guidelines. Each grower should analyze costs for each recommendation on each management unit of the farm. For example, late water is great for reducing costs if you have abundant, high quality water that can be applied via gravity or with minimal pumping cost. This could be a very costly option if you have to repeatedly pump water to maintain the flood.

General management - savings tips when producing a crop

Late Water

This practice has the potential to reduce costs by reducing requirements for frost protection, fertilizer, fungicide, and insecticide applications. There is potential for minor to major crop reduction and that should be part of your decision tree for this practice as should your cost to apply and maintain the flood.

Research has shown that holding LW for the full 4 weeks eliminates all overwintering cranberry fruitworm (CFW) from the bed. Therefore, on isolated LW beds it may be possible to eliminate CFW sprays. The LW practice is well discussed in the Chart Book. More information on LW can also be found at this link:

http://scholarworks.umass.edu/cranberry_community_presentations/1/

Fertilizer

Analyze all your costs related to fertilizer. For example, a single application of controlled release fertilizer (CRF, aka slow release) applied with a ground rig in the spring could provide savings in application cost. The CRF may be more expensive but you should be able to reduce the N rate by up to 50% depending on the vine health and crop goals.

Using a ground rig even when new growth is present can be a lower cost option, any minor damage from driving on the vines may be tolerable for the cost saving.

If you plan to produce no crop (bloom flooding), N rate can be reduced up to 60-70%. If you use LW and plan to crop, fertilizer N rate should be reduced ~30%. If you plan to mow your bog, fertilizer needs for recovery will be in the range of 40-50 lb/acre N (less for native cultivars).

Decide on your fertilizer needs now and if you have the ability to take delivery and store the fertilizer, talk to you dealer now and order in the next month or so. Note – the local dealer cannot store everybody’s orders and the manufacturer will not take a pre-payment for later deliver – you pay and have to take delivery then. However, this can result in significant savings. As of the end of 2013, fertilizer prices were *down 12-13%*. BUT – once spring planting and buying in the Midwest starts, all bets are off – prices historically have been seen to rise 2-3% every two weeks. So meet with your dealer and have the conversation NOW.

To quote a local dealer: “In my own opinion the month of February will be the best time to purchase fertilizer. If growers would make it a practice of coming in and discussing their

individual fertilizer needs, and the best way to approach purchasing their fertilizer, it would benefit them tremendously. However, to get the very best prices you must be prepared to buy and take the product as soon as it is available. This also guarantees availability of just what it is the grower wants, not just what might be available. Raw ingredient costs, costs for storage space, and costs of inventory are the three main reasons for prices that might be higher [when you wait].”

Pest management (producing a crop)

- Consider late water.
- Do not cut back so far on scouting to the point that outbreaks are missed.
- Evaluate everything in an IPM approach (benefit vs cost).
- If you have a history of cranberry fruitworm (CFW), particularly if you have large area of Howes in proximity to other cultivars, apply two sprays and then check for eggs. If you have light CFW pressure history, apply the first spray and then check for eggs as the basis for any additional spraying.
- Control dodder and other weeds to prevent rampant infestations.
- Use the lowest cost fungicides for fruit rot control and apply based on keeping quality forecast, rot history, and wet vs dry harvest. Fungicide use can be eliminated on process beds that have been held LW.
- Use cultural management (improve drainage) for Phytophthora.

Irrigation and frost management

Irrigate so that the plants are preserved. Use a tensiometer or water level float for scheduling. Take the opportunity to manage the water table so that rooting depth is increased. Production of deeper roots takes energy from other plant processes such as fruit production, but when crop is eliminated or maximum production is not your primary goal, this is not a problem. With deeper roots, the bed should be more productive in subsequent years.

If you have the capability, the use of cycling in frost management is strongly recommended to save pumping costs. Several growers have shared their set points for cycling. The consensus is to use a start trigger of 2-3°F above tolerance and a stop trigger in the range of 31-31.7°F. One grower mentioned that he raised his start trigger temperature by 1-2°F after the first cycle. The lack of negative impact of cycling is supported by grower testimonials and the research conducted by Peter Jeranyama’s group.

Producing no crop - management tips

If you are considering this option and are under a handler contract, please discuss not cropping with your handler before proceeding.

There are three alternatives if you choose not to grow a crop on a bog:

1. Flooding to eliminate flowers (short or long flood in the summer);
2. Mowing to remove all flower buds;
3. Bog renovation (while costly, this is an opportunity to replant to a more productive cultivar).

If considering any of these options, winter management can be somewhat relaxed. For example, a modest amount of oxygen deficiency injury should be no problem – you are planning for no crop and the vines will recover. So a grower might consider a single winter flood held through a warm spell in January rather than a two flood cycle. Skipping the winter flood altogether could result in winterkill injury or yellow-headed fireworm infestation, but if you are planning to mow in the spring, this may not be an issue.

Bloom flood to eliminate crop production:

A short 2-4 day flood during peak bloom (late June-early July) can be used to suffocate the flowers. No fruit will be set but vines are not injured.

If using this method, do not protect from frost in the spring unless a so-called 'black frost' (temperature at least 5° below tolerance, rapid temperature drop, low dew point) is predicted. This may eliminate some flower buds (depending on how the frost season goes). Time the flood to begin when most flowers have opened or are at the pinhead stage (unopened pods will survive the flood) – approximately 80% out of bloom. Hold a deep flood for up to 7 days (minimum 4 days) – if very warm lean towards shorter time. New tender growth may be damaged.

Depending on how well bloom is synchronized, you may need to repeat this flood up to a total of three rounds, especially if the floods are only 2-3 days. Avoid this by using late water to synchronize bloom if financially feasible.

Management to maintain a healthy stand of vines during this fallow period:

- Spring frost protection can be virtually eliminated unless extreme cold is forecast at roughneck or later (that could damage new growth) – more than 5° F below tolerance or a 'black frost' forecast.
- Irrigate enough to avoid vine damage (see above).
- Normal maintenance of ditches, dikes, and water control structures - the infrastructure of the system should be maintained.
- Weed control as for a producing bog. If weeds are not managed, they will take over the planting during the fallow period. This may be an opportunity to aggressively manage dodder with either short floods, late casoron applications or quinclorac (since you have no fruit to deliver, handler restrictions should not be in play).
- Pest management – this could be an opportunity to try short floods for dodder and/or black headed fireworm depending on how much cost is associated. A single fungicide should suffice, none if late water is used. Scout for leaf feeding insects and treat to protect foliage as needed. No CFW management will be needed if there are no fruit present on the bog.
- Fertilizer applications at a reduced rate (approximately 1/3 of that for a producing bog). Some fertilizer use will be required to maintain the vine density if this is a long-term plan or to support bud development if planning for only one year of crop elimination.

More extreme measures

Long-term flooding during the summer

This flood will also control soil insects and briars and provide at least partial control of dewberry. Keep the bog well drained in the early spring. Flood on May 12 -- remove the flood

on July 20. This flood is very tough on the vines and will likely reduce crop next year as well. Long-term floods are considered pretty risky by most - one grower who held a summer flood on a marginal bog reported 3-4 years to bring it back afterwards. If you do not need to control the target pests, this flood is NOT recommended. Scout carefully for large cutworms after the flood. Use no fertilizer in the year of the summer flood.

A super long summer flood (months) can be used to kill the vines as a prelude to renovation.

Mowing

Mowing will eliminate all crop this year. The new growth that follows mowing is vegetative and may set bud poorly so next year's crop will also be reduced. A good crop in the third year should be expected. Fertilizer will be required to support the vine regrowth. An advantage of mowing is that it removes old wood in the bottom of the canopy and thus can eliminate a cycle of sanding.

Given current conditions, there may be no 'home' for the mowed vines. How to deal with the mowing will be a consideration.

Even if there is no use for the mowed vine, this practice can have some advantages when used as a crop eliminator. Vines tend to come back in a very even stand after mowing, and this would facilitate converting from wet to dry harvest in the following crop year (if one wants to do that). Stevens, especially those that have become rank, benefit greatly from mowing, generally having a decent crop in the following year and an excellent crop in the second year out. In the mowing year, the only expenditures would be for the mowing, frost protection (only if cold enough to damage the new growth), spraying for any scouted leaf-feeding insects, and fertilizer similar to that applied on a production bed [use of controlled release material could allow for a single application]. Some growers leave up to 2 inches of stubble when mowing, others have mowed 'to the ground'. Some recommend sand application right after mowing but this is an added cost. The consensus was that the mowing should be done in the last two weeks of April. One grower speculated that a 5-year cycle of mowing on Stevens might make sense - this has been reported in previous years when growers were engaged in renovation programs and needed the Stevens vines. A grower with experience of mowing Howes indicated that he mowed to stubble, applied SulPoMag and had vines back to full production after two years. As an additional cost-saving, the idea of not holding a winter flood if planning to mow is a possibility - cranberries are quite hardy and if winterkill burn did occur, that tissue would be mowed off anyway.

Regulatory implications

In order to remain classified as a farm for purposes of property taxes (Chapter 61A) and to qualify for the agricultural exemption for certain management activities, it is crucial that your operation not become classified as an abandoned bog. Normal and continued maintenance activities associated with preserving the beds for future production should suffice to keep an agricultural classification. However, a property must generate some gross income from farming in order to qualify for Chapter 61A classification. For further information on Chapter 61A issues, contact CCCGA or Massachusetts Farm Bureau.

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