

Mothballing Vineyards – Long-Term Minimal Management

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Overview

Vineyard Mothballing can be defined formally as:

Maintaining a non-producing vineyard with minimal, critical inputs to allow for a rapid return to production in the future

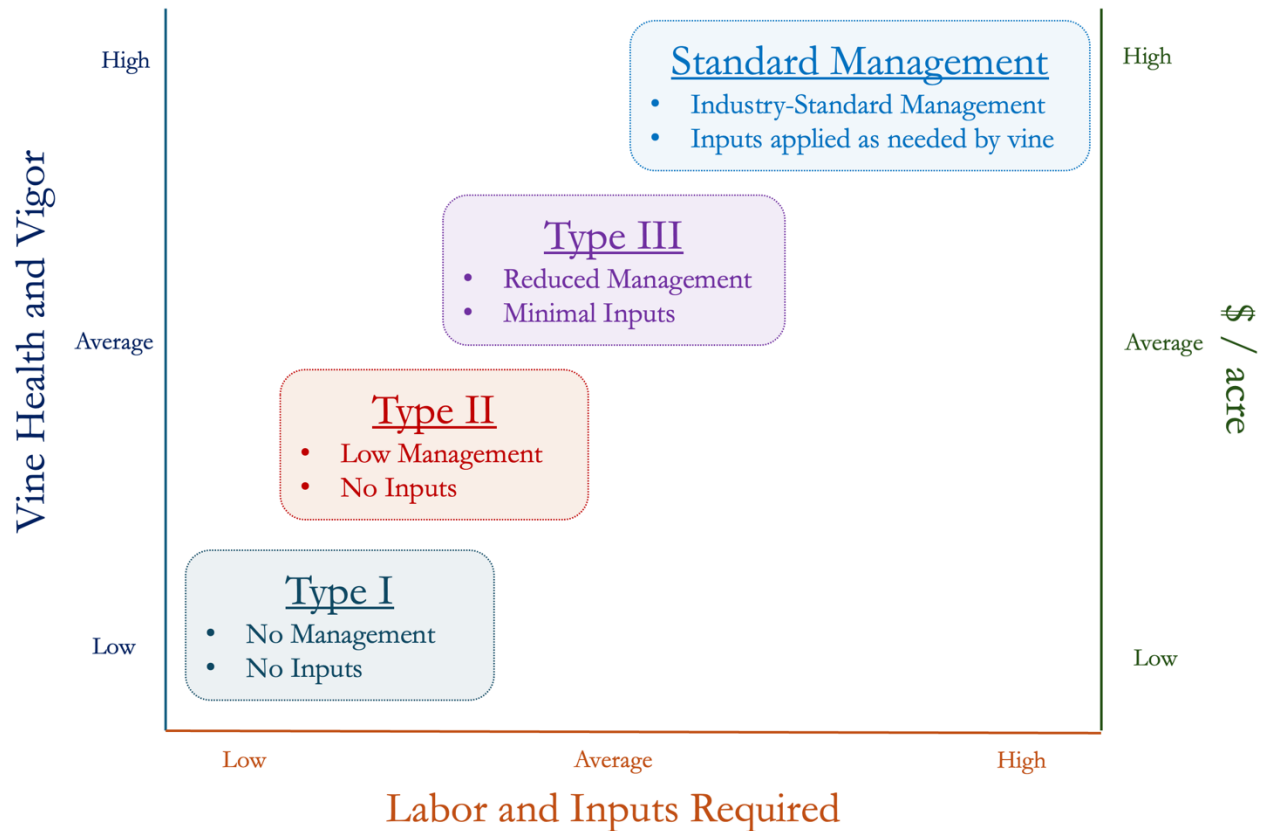
This is a relatively new concept refers to the non-operation of living vineyards and can be easily mistaken for vineyard abandonment. When deciding how to mothball a vineyard, the main considerations are: (1) Objectives during mothballing phase (2) Plans for return to production (3) Reducing per acre management costs and (4) Vine health and recovery.

Objectives During Mothballing Phase

The primary objectives when mothballing a vineyard are: (1) Reduce per-acre costs as much as possible (2) Maintain low pest and disease pressure and risk to neighbors (3) Preserve vine health and reproductive potential. There are various approaches to mothballing to achieve these objectives. The various approaches can be broadly categorized as:

1. **Type I** = No vine management + pest and disease management + no harvest
2. **Type II** = Pruning + pest and disease management + no harvest
3. **Type III** = Minimal farming (reduced intensity of standard practices) + harvest
4. **Standard Practices** = Industry standard practices for viable crop

Comparing Mothballing Approaches



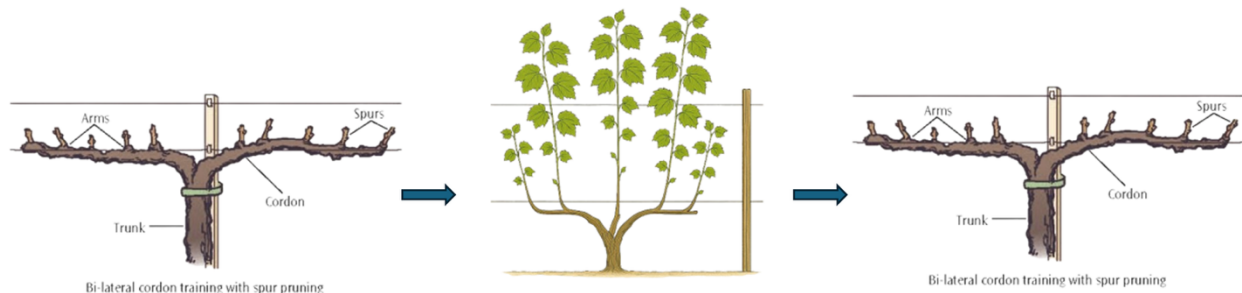
Each approach has a tradeoff between labor hours needed, pest and disease risk, and vine health and potential for recovery during return to production. Management of pests and diseases is an essential component of any mothballing approach. Increased risk of pest and disease spread within and outside of your vineyard can lead to your vineyard being considered “abandoned” where further action can be taken to reduce risk to neighboring sites. Pest and disease management can be costly but can also be effective at lower input levels; for example, the combination of fungicide applications and livestock grazing early in Spring may help limit long term pest pressure throughout the growing season. Different approaches will be needed for different situations.

Plans for Return-to-Production

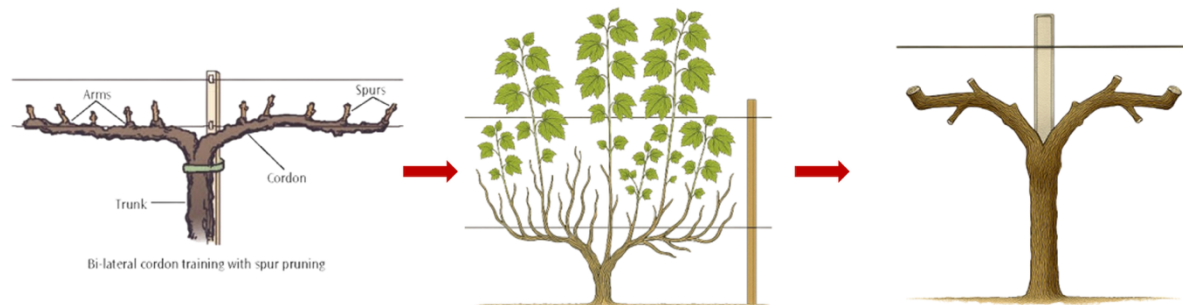
Before transitioning to a mothballed vineyard, it is important to identify your goals for returning to production following the mothball period. In the most extreme scenario

(e.g., Type I Mothballing), return to full production yields could take multiple years. Primary considerations for return-to-production should be: (1) Number of years to return to full crop load (2) Difficulty of reestablishing permanent growing positions (3) Health of the vine.

Normal vine pruning & regrowth



Recovery from Type I Mothballing



Some growers may opt to employ minimal vine management (e.g., pruning and Type II Mothballing) to ease the return-to-production period. Maintaining healthy, < 1 year old dormant buds will increase the likelihood that the vines can be cropped immediately following the mothballing period. Other producers may opt for a more difficult return-to-production in exchange for reduced maintenance costs per acre during the mothballing period (e.g., Type I Mothballing). When pruning is neglected, reestablishing the vine's permanent growing positions would require growth and selection of properly positioned shoots from latent buds; these shoots are often less vigorous, less fruitful, and less well attached to the rest of the vine and increase risk of poor permanent wood development.

Reducing per-acre Management Costs

The primary contributing expense to per acre management costs is labor. Reducing labor significantly would directly decrease cost to maintain a vineyard. Reductions in labor cost will occur on a spectrum and shouldn't be assigned any specific value by mothballing approach or other factors. For example, Type II Mothballing includes pruning grapevines to maintain a reserve of < 1 year old buds; this reserve of healthy buds helps ensure rapid recovery during the return-to-production phase.

However, the method of pruning will significantly affect the labor hours needed to completely prune the vineyard. Spur pruning may be more expensive than a simple approach like “cut to two buds on either side of the vine head”; alternatively, cane pruning can require more labor hours than spur pruning if approached thoughtfully and with respect to long-term health and structure of the grapevine.

When considering Type III Mothballing, this can be compared to a “minimal farming” approach. All standard cultural practices are still applied, but at lower intensity and with fewer working hours. In addition, all extraneous practices are eliminated in a Type III mothballed vineyard to further reduce per-acre costs. Your approach to mothballing should be tailored to your vineyard, your financial objectives, and your plan to return to production following the mothball period.



Vine Health and Recovery

The recovery of your vine will depend on how you designed and implemented your mothball management. The timeline for recovery to full production will vary from 1 year to 5 years from start of return-to-production. Currently, timelines are not well

defined and will vary based on site conditions, management decisions, resource allocation, and many more factors. However, we can produce a predicted timeline for return to production based on the requirements for vine growth and reproduction.

Example Return-to-Production: Type I Mothballing

Year 1 – Return to Production

- Winter – Heavy pruning back to ideal latent buds
- Spring – Intensive shoot thinning to 2-4 shoots per side
- Spring – Fertilize and irrigate to increase vine vegetative vigor
- Summer – Allow selected latent shoots to grow (remove crop)
- Summer/Fall – Dormant preparatory fertilization

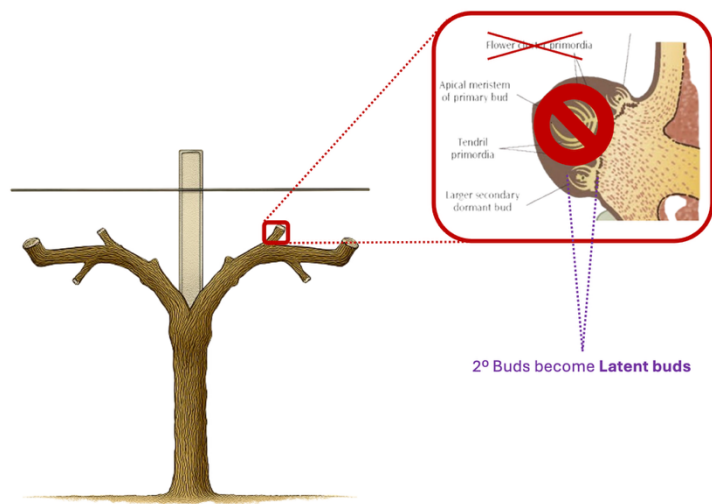
Year 2 – Replace Permanent Growing Positions

- Winter – Prune remaining shoots to two-bud spurs
- Spring – Fertilize/irrigate and train new shoots as cordons
- Summer – New shoots can be allowed to crop (\approx 50% capacity)
- Fall – Proceed as normal for pre-mothballed management

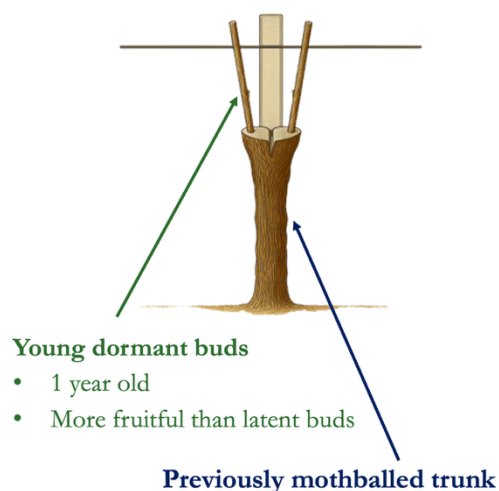
Year 3 – Return to Full and Regular Production

One of the primary factors that impacts return-to-production is what source of dormant buds are used. The notable options are: (1) Latent buds from prior years' growth, (2) Dormant buds from newly grafted wood, or (3) Dormant buds from < 1 year old wood on a pruned vine. Of these situations, the most likely to produce viable vegetative tissues with the potential for crop load in the first year are (2) and (3). Dormant buds that are < 1 year old typically retain their 1° bud which is more vigorous and fruitful than the 2° buds. Latent buds, as in option (1), almost always rely on 2° buds to produce new vegetative growth since the 1° bud has already grown out in previous seasons.

Option 1 – Renewal from Latent Buds



Option 2 – Top working



Summary – Mothballing Vineyards

Vineyard mothballing is a relatively new approach to preserve winegrape vineyards through challenging market conditions. Your approach to mothballing a vineyard will vary along a spectrum and will be determined by your objectives, the target length of time the vineyard will be mothballed, site conditions, vine health, plan for recovery, and many more factors. Before actively pursuing mothballing it is important to have a plan for recovery in mind; this will significantly influence which mothballing approach is most viable for your given situation.

Mothballing can be a risky approach to waiting out bad markets. Current information on the practice does not fully elucidate the risks to long term pest and disease pressure, vine health, vine function, vineyard longevity, and recovery potential. The fine line between mothballing and abandonment should also be considered. If you plan to attempt to mothball your vineyard, it is best to speak with a UC ANR Cooperative Extension Advisor and to inform your neighbors of your plans.

For questions or suggestions please contact:

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