Carved Out of the Land

MARY MAHER

Everything in agriculture starts with the land, and the land at Harlan Estate is unique. The vineyard is horseshoe-shaped, on the hillsides, with multiple exposures and soils that change dramatically from slope to slope, from vineyard block to vineyard block, from row to row, and within rows. All of these conditions informed the decisions made when the first twenty-four acres of vineyard were planted in 1986 and 1987, with eighteen acres on one slope and six on another. In the early 1990s, the estate planted another fourteen or so acres. In 1999, an outbreak of phylloxera necessitated the replanting of those first six acres, which were on vulnerable rootstock; fortunately the other eighteen acres planted in the early days were on resistant rootstock.

California viticulture is actually New World viticulture: it uses rootstocks with distinct growing patterns. Harlan Estate uses a handful of the newer rootstocks, those introduced over the last sixteen or eighteen years, which best match its soil types, the lay of the land, the aspect, and our sense of how the vines grow on the different areas of the site. Some of these rootstocks are more drought-tolerant, some are very small-growing, and some have a shorter growing season. Depending on where it's planted, the same combination of grape and clone and rootstock produces fruit of widely varied character; that differentiation is due to the exposure, the aspect of the slope, and the soil composition. The majority of the estate's forty acres of vineyards is planted to cabernet, the backbone of its wines, with the balance in cabernet franc, merlot, and petit verdot.

Like the various rootstocks, each varietal grows in its own way. Cabernet is a workhorse: it thrives in many different soil types, and expresses itself differently in each. Merlot is more sensitive: it will swoon in the heat, when a cabernet block on the same soil and rootstock won't. Cabernet franc is extremely site specific, not as adaptable as cabernet but not nearly as finicky as merlot. Petit verdot has a wild, recognizable look, with long internodes, lots of big leaves, and tendrils.

The first Harlan Estate plantings were laid out on hillside terraces. As the vineyards have expanded, the layout continues to honor the slope, although the blocks and rows are organized quite differently. That evolution in planning and planting is partly a matter of terrain, partly a matter of such farming issues as tractor safety, and partly due to restrictions imposed on hillside vineyards by the County of Napa. In one area of the vineyard, the terraces are set quite close together. In another, the rows of vines follow the contour line and are perfectly level. The more recent plantings, in 1992 and 2002, follow the fall line and are tightly spaced up and down the hill.

The terraced eastern slope of cabernet sauvignon, after clearing and before planting, in 1985

Managing the vines as the row direction changes is difficult: we spend the entire year tending the differences from vine to vine and row to row in each part of the vineyard. We work to achieve as much uniformity as possible, which means we have to observe where those differences exist and what each requires. This is not simply from one grape variety to another, but from spot to spot, from the tops of rows to the bottoms of rows as they go down the hill.

The trellis style used at Harlan Estate is called vertical trellis or vertical positioning, and it traps a very narrow curtain of foliage between wires. Because the ideal layout for vertical trellises runs north to south, the vines can be finicky in a climate as warm as this. So the north-south rows here have a slight northeast/southwest cant, for protection from the afternoon sun. The rows with an east-west orientation are exposed to direct sun on one side of the canopy all day long, which makes the fruit vulnerable to incidents of sunburn. In those areas of the vineyard, we spread the canopy to protect the fruit better.

Soil types change across the hill, which necessitates irrigating across the hill rather than in blocks or up and down. In the terraced areas on the slope, the row of vines on the outside of each deck tends to have more topsoil than the row on the inside of each deck because the cuts used to create the terraces move the topsoil out onto the deck shoulder. That difference in soils means that the inside and outside rows should be managed separately; here, it's accomplished with separate irrigation systems for each row and separate farming techniques as well.

The Harlan Estate crew is very much "eyes on," because the vineyard takes a lot of care and close watching. The crew's long-term experience with the property helps to make everything happen, as does its clear understanding of our parameters for quality. The crew walks the vineyards every day, season after season, year after year, and we rely on what they see. Our vineyard foreman has been here from the beginning, and has a deep, intuitive sense about this ranch. He knows by feel where the transitions occur between each area, and he understands how we want to manage each.

The work of farming goes on all year long. Pruning begins in late January, when the vines are dormant. There's an eye and an art to pruning. The practice here is to cut back the buds of each plant to a set number, generally between twelve and twenty, depending on the vigor of the site, the length of the cord, and the arm structure. In the shallower soils the vines tend to be closer together, and smaller, because there's not much rooting area. In some of the richer soils, they can explore and grow a bit more. A smaller vine may have twelve buds, or six positions that produce shoots, and a larger vine may have eight or nine. The precise number varies from site to site, and within blocks as well. The members of the crew are so familiar with the individual vines and their particular strengths, weaknesses, and idiosyncrasies that they know how to adjust the pruning. If a vine had a weak spot the previous year, for example, they'll leave one bud in that spot as opposed to the usual two. The first pruning pass cleans out the big brush, which we mulch or chip. A second pass happens closer to bud break, and the final pruning takes place in late March. Through those first three months of the year, the crew is also combing through the vineyard and tying the vines tight to the trellis system, making sure everything is ready for the upcoming season.

As the shoots start to grow in late March and early April, mildew protection begins. Grape vines are very susceptible to powdery mildew, which copper, sulphur, and other sprays throughout the growing season help prevent. The weather determines the spraying cycle, as it does so much else. Spraying happens at night here, when it's cooler and less windy.

Over the next month our succoring occurs, which involves removing the surfeit of the bud. Grapes are like roses and other very advantageous species: regardless of how closely they're pruned, they tend to push out excess plant matter. The crew goes through the blocks to remove the extraneous buds, leaving two good shoots with their two cluster primordia. That process gives us an idea of the year's fruitfulness, and a sense of what may happen in the vineyard as the seasons progress.

Grapes self-pollinate. They flower in early June, and if half the flowers of each cluster set into berries, it's a good year. This is when you really hope for good weather. The small BBs of berries start expanding while the shoots continue to grow, and the trellis system trains the shoots upward so the fruit has optimal exposure to the sun for ripening and to the breeze for disease control. Leaf tissue samples taken during flowering help

us assess the vines' general health; the analysis alerts us to any possible fertility issues, and to whether the vines are in need of supplements, such as boron or magnesium, or any nutrients.

As the fruit sizes up, the crew combs through the vineyard sampling the blocks at random to determine the average number and size of clusters, and to get a general idea of whether the year's crop is light or heavy. On average, the tally is one to one and a half clusters per shoot per vine, but some years it's less. The amount of sunshine the previous summer determines how fruitful the next year's buds become.

Once we have a general idea of the crop size, we start the thinning process. Harlan Estate is adamant about low yields, so the first thinning reduces the crop to about ten clusters per vine. Trial and error over the years has taught us the best crop load per vine for the quality desired in the winery. Depending on the spacing and the density of the vineyard, the yield should be two to two and a half tons per acre, which is not a lot. The vines could easily produce as much as three and a half to four and a half tons per acre.

After the fruit sets and we complete that primary pass, the fruit starts to mature. As it does, we irrigate and fertilize, mostly with organic fertilizers. Grapevines, like olives, are fairly hardy in many ways: they don't need much input, but they may need supplements at times. If they do, we add potassium or magnesium with the irrigation to individual blocks as necessary. We also use compostees throughout the year for organic matter.

In late July and August, *véraison* occurs: from bud break to that point, the vines concentrate on growth, but as they color the fruit, they begin to change physiologically. That's the survival mode of the plant kingdom: ripening the fruit makes it attractive enough so the birds will take it and disperse the seed. Should the crop level seem high at that point, we'll reduce it again. And as *véraison* comes to an end, we go through the vineyard one more time to remove any remaining outlying green clusters. For evenness of ripeness at harvest, two thinnings at *véraison* is standard vineyard practice at Harlan Estate, even in a year with a low crop.

The fall is harvest season. Due to the steepness of the terrain, the crews start handpicking the grapes at sunrise or just a little before. They'll stop by 8:30 a.m. or 9 a.m. so we can deliver the fruit cold to the winery, which is how the winemaking team likes to receive it.

When the harvest is complete, we start to winterize the vineyards, planting a variety of cover crops because of the erosion potential on the hillsides. Certain weaker blocks get what are called soil builders: legumes, Austrian winter peas, barley. We also plant rose clover and crimson clover, as well as various grasses and seed to suit individual sites and the terrain. The late fall involves post-harvest composting, fertilizing, trellis repair, and other projects—putting things to bed for the winter.

The older the vines get, the easier they seem to become, and the vineyards planted in 1999 are just now starting to mature. Young vines, vines five to seven years old, are like children and teenagers: they have massive amounts of energy and throw off enormous amounts of fruit that they cannot possibly ripen, much less support. Older vines are still exuberant, but they handle the highs and lows of stress better than younger vines thanks to well-established root systems: instead of major ebbs and flows, there are minor ups and downs. When vines fail at Harlan Estate, they are always replaced, then tended carefully, and watered and fertilized by hand, year in and year out. Eventually the young vines get caught up in the scheme of things, and even though they will never be the same age, they start behaving just like the other, surrounding vines.