Sustainable Agriculture

An intensive program of low impact, sustainable agriculture is embraced at Shafer in order to preserve the long-term health of the soil and environment.

Cover Crop Management

During the winter and spring, Shafer cultivates cover crops such as clover, oats and peas among its 208 acres of vineyards. Separate programs of cover crop management are used depending on the specifics of the vineyard, the mix determined by the nutritional needs of each vineyard block.

Red oats, grasses, and peas are planted on the level terraces of the hillside vineyards as well as on the level vineyards in Carneros and the Oak Knoll areas. Once or twice during the spring when the greenery reaches as high as two feet, the crop is mowed and left to decompose into the soil. No discing is necessary, so unwanted soil compaction is prevented. The mowed cover crop breaks down into the soil and thus increases the organic, humus, and nutrient content. This also provides for better soil aeration and drainage.

Another benefit of mowed cover crops is leafhopper control. Mowing is alternated between rows and spaced weeks apart so that half of the cover crop always remains in order to preserve the habitat of insects which prey on unwanted leafhoppers. Several species of anagrous wasps as well as spiders, ladybugs, lacewings, damsel bugs and several flies eat troublesome leafhoppers, mites and thrips. Maintaining the cover crop for "good bugs" reduces the leafhopper population without chemical sprays or insecticides of any kind.

Hillside Vineyards

Wherever the ground is steeply sloped, such as on the "benches" or slopes of the terraced vineyards surrounding the winery, mowing is impractical. For this reason clover is the preferred cover crop because it never needs to be mowed, will not outcompete the vines for moisture and nutrients, and it helps choke out unwanted weeds by depriving them of sunlight and inhibiting seed germination.

Several types of sub-clovers are planted in the fall, each of which captures essential nitrogen from the air and delivers it to the soil. The extra nitrogen offers the vine rich nourishment for the growing season ahead. The enriching effect of the clover multiplies year to year, making the soil more fertile each season.

The lush carpet of clover manages itself. It grows to 12 or 14 inches then goes to seed and dies back in April or May just as the vines begin their annual growth spurt requiring more soil moisture. The timing of this natural cycle fits in with the needs of the vine, eliminating any potential competition for water during the vine's critical stage of bloom and fruit set. The natural dieback also eliminates the need for mowing or discing on the tricky slopes.

Erosion Control

Cover crops, along with state-of-the-art drainage and erosion control techniques, prevent erosion on Shafer's steeply terraced hillside vineyards. During winter rains, cover crops effectively hold the soil in place, protecting the stability of the terraces.

Nesting Boxes and Perches

Because cover crops often attract mice and gophers to feast on the tender roots of newly-planted vines, Shafer constructed nest boxes for barn owls and installed them in suitable locations through the vineyards. After taking up residence in the nest boxes, these nocturnal hunters consume large numbers of rodents without causing any damage to the vines or environment: a pair of nesting owls and their young can consume 1,000 rodents in a single

PHOTO: GREG TATARIAN

nesting season. Similarly, tall man-made perches are placed in the vineyard to offer hawks a perch from which to hunt during the day, affording the vineyards round-the-clock rodent control which has proven extremely

PHOTO: GREG TATARIAN

effective. By inviting these winged hunters into the vineyard, Shafer has reintroduced a natural form of bio-control to the ecosystem.

Mildew Control

To control the growth of mildew in the vineyards, Shafer applies sulfur dust only to the vines. Used sparingly and only when conditions warrant it, sulfur dust is an acceptable organic treatment. Additionally, Shafer discourages mildew by removing excess leaves during the growing season and controlling canopy growth by using only enough water to keep the vines healthy.

Natural Fertilizer

A by-product of the winemaking process, grape pomace is returned to the vineyards as a natural fertilizer. Recycling the grape pomace in the fields adds to the ecological efficiency of winemaking. Spread across the vineyards in the fall, it increases the organic and humus content of the soil, reducing the need for synthetic fertilizers. Essential nutrients are released into the soil gradually. In contrast, commercial fertilizers tend to shock the vines with a heavy dose that cannot be readily absorbed. The application of grape pomace also invigorates the soil microbe population, which is vital to cover crop degradation.

Shafer Natural Farming Glossary

Biodiversity

A heterogeneous mix of plant, animal and insect species naturally occurring in a biologically active environment and encouraged by growers who practice sustainable agriculture.

Biodynamics

Based on the theories set forth by Austrian scientist, artist and educator Rudolph Steiner in the 1920s, biodynamics is a system of farming which incorporates organic practices with a metaphysical approach to agriculture that seeks to connect the grower with the spiritual forces of nature.

Cover Crop

Cover crops may consist of native weeds and grasses or a single or mixed population of selected species such as legumes. Perennial grasses as well as annual plants are used depending on the objective. Cover crops are seeded among the vineyards for several reasons: 1) to prevent erosion on sloping soils 2) to provide a habitat for beneficial insects 3) to choke out unwanted weeds 4) to add nitrogen to the soil 5) to improve the soil by adding natural organic materials.

Integrated Pest Management

The integration of chemical, cultural and biological controls into a practical pest management program. Combines use of limited pesticides with encouragement of beneficial insects.

Natural Farming

Farming by means of a complementary system of low input, organic, sustainable and/or other environmentally sensitive farming practices. The objective is to minimize or eliminate the use of harmful chemicals and encourage biodiversity in the vineyards.

Nesting Boxes

Manmade boxes installed in the vineyards that offer shelter for barn owls, which in turn provide a natural form of rodent control.

Organic Farming

A system of farming without chemical fertilizers, pesticides, herbicides or fungicides, and with cover crops and natural insect and pest control.

Organically-Grown Wine

Wine made from grapes grown organically, but with sulfites added to the wine to act as an anti-oxidant and preservative.

Organic Wine

Wine made from grapes grown organically and processed organically without the addition of sulfites or other preservatives to the must and finished wine.

Sustainable Agriculture

An agricultural system that is environmentally sound, economically viable and socially responsible. Sustainable agriculture makes the most efficient use of non-renewable resources and integrates natural biological controls where appropriate. It minimizes the use of chemicals, which are applied only when absolutely necessary.

Sources: International Symposium on Natural Farming documentation; The Wine News; Wildlife Research Associates; Viticultural Update