



Sheep grazing at Bonterra Organic Estates in Hopland, CA.

Soil to Sip

DONUM ESTATE AND BONTERRA ORGANIC ESTATES EXPLORE THE LINK BETWEEN REGENERATIVE FARMING AND WINE QUALITY

by Stacy Briscoe

“REGENERATIVE ORGANIC IS THE gold standard of regenerative certifications,” says Joseph Brinkley, senior director of regenerative organic farming at Bonterra Organic Estates in Mendocino, California. “Those of us going through these practices are really committed to a relational form of farming—‘relational’ meaning connecting below-ground with above-ground life. And for us, given our scale and distribution, having a third-party verification to back up our claims is very important.”

Meanwhile, in Sonoma’s Carneros AVA, Tony Chapman, senior director of wine-growing at Donum Estate, asks, “How do

we increase our soil health? How do we increase vine health? How do we make better, more exciting, more terroir-driven wines?” The answer to all these questions, he believes, lies with regenerative farming.

These two seemingly disparate operations—one a large-scale winery with wide commercial availability, the other a boutique brand focused predominantly on direct-to-consumer sales—actually have a lot in common: a passion for and focus on the holistic philosophy and practices that define regenerative organic viticulture. This motivated them to obtain certification through the Regenerative Organic Alliance (ROA) as well as to

form partnerships with predictive ag company Agrology, which accumulates data showcasing how regenerative viticulture positively impacts both the vine and the wine.

Biology Is the Vehicle

Wind, rainfall, fog, growing degree days: These abiotic elements are, arguably, the factors of terroir most easily understood by industry and consumers alike. But, Chapman argues, it’s the biology below ground that truly captures the essence of a place.

Those familiar with regenerative agriculture are aware that the first pillar

of the practice involves soil rejuvenation and vitality. It's the nuances of a healthy microbiome that lead to successful vine growth cycles, fruit development, and the ability to express terroir: "The industry talks a lot about soil structure in reference to the top 10 inches, but anyone who farms winegrapes knows that the more important components are found at depth," says Chapman. For roots to dig deep, form a firm foundation, and build a life cycle of longevity, a combination of soil aggregation and aeration is needed to promote root integration, water and nutrient infiltration and retention, and carbon cycling.

A fundamental first step is the elimination of synthetic inputs. "Fifty [percent] to 80% of soil organic matter is dead micro-

vintages, Donum has seen as high as a 1,047% increase in total fungi in one of its blocks. The benefit: "Certain fungi, like trichoderma, bacillus, [and] pseudomonas, can act as biocontrol agents, outcompeting or inhibiting pathogens like eutypa and botrytis," says Chapman.

Data also proves that year-round cover cropping—sans tillage—is especially successful in maintaining healthy fungal communities. "Soil aggregate needs to constantly be replenished—the average lifespan is only 21–27 days," explains Dubbe. "Here [at Donum], they consistently feed and build biology through permanent cover crop, which is cycling nutrients, increasing water holding, and, as a result, helping the resilience of the vine

Taste Test-Approved

"Soil health lends itself to measurable nutritional density compared to conventional counterparts," explained Chapman while introducing me to a comparative tasting of Pinot Noirs that were conventionally farmed, farmed with minimal tillage, and farmed without tillage, respectively. "Density of phytonutrients only occurs when vines are getting good nutrition through the soil microbiome. [These] secondary metabolites, the same compounds that help defend against stressors, also create elevated textures, aromas, and flavors in the wine."

Success with regenerative methods has informed winemaking decisions at Donum. "We're doing all these things in the vineyard, but if you bring it into the winery and treat it with conventional winemaking—meaning sulfur at the crusher, inoculating commercial yeast strains, whatever it may be—you're losing what you're building up," says the winery's vice president of winemaking and vineyards, Dan Fishman. It's in the lag phase, he comments, between 0% and 5% alcohol when complexity from terroir is built into the wine. "A lot of really interesting things happen before *saccharomyces* takes over," he says. During this time, beneficial fungi, or so-called "native yeasts" that are not responsible for alcohol conversion,

release aromatic compounds, flavonoids, and glycerol, adding depth and complexity.

Tasting through the wines, I couldn't escape their sheer physical transition: The regeneratively farmed grapes achieved full flavor and phenolic ripeness earlier in the season, meaning the wines are lower in alcohol, carry brighter acidity, and have a lighter body with more delicately layered flavors.

"It takes a long time for adaptation to evolve," says Chapman. "But once a plant has, it's inheritable and gets passed on indefinitely. It's a huge motivation to keep these vines in the ground, keep them healthy, keep them adapting, keep them producing more and more profound wines." *sj*

Owls are beneficial predators in vineyards, feeding on pests.

PHOTO: BOB BERG



Cover crops in Donum Estate's Carneros vineyard.

bial bodies," explains Agrology's head of regenerative partnerships, Charlie Dubbe. "If you're trying to increase organic matter and water-holding capacity, it's imperative to increase the microbial biomass." Donum achieves this by making its own compost teas to spray in vital phases of the growing season—at budbreak, during flowering, and immediately following harvest. "This is really to feed the fungal matter. In agriculture, typically, soils are bacterial-driven. Grapevines prefer fungal-dominant soils; our goal is to restore the fungus-to-bacteria ratio naturally," says Chapman, explaining ideal ratios are site-dependent but that he aims for three to one or higher. Over the course of three

against stressors like heat, pest, and disease."

There's a common misconception that vines are more stressed by competition from cover crops, but throughout the growing season, data showed the opposite: They experienced less water stress in the untilled sections of the vineyard versus those that underwent minimal tillage. However, there was a shift in the weeks leading up to harvest: "Stress during this time of the season incentivizes the plant to produce secondary metabolites—phenolics, terpenes, thiols, all these flavor compounds right before picking," says Chapman. "From a winemaking and wine quality perspective, that's what we want."



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