WINES & VINES

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How Green Is Your Packaging?

Suppliers increasingly use carbon credentials to promote their goods

by Suzanne Gannon

Boisset America is bottling its Yellow Jersey Pinot Noir, Chardonnay and Sauvignon Blanc vins de pays in lightweight PET plastic.

HIGHLIGHTS

- Type and weight of wine packaging, and mode of shipment, significantly affect the carbon footprints generated by individual wines.

- Consumers have welcomed alternative packages like bag-in-box and Tetra Pak for their convenience, but not all are aware that alternatives can also be "greener."

- The debate continues over which wine bottle closure is friendliest to the environment.

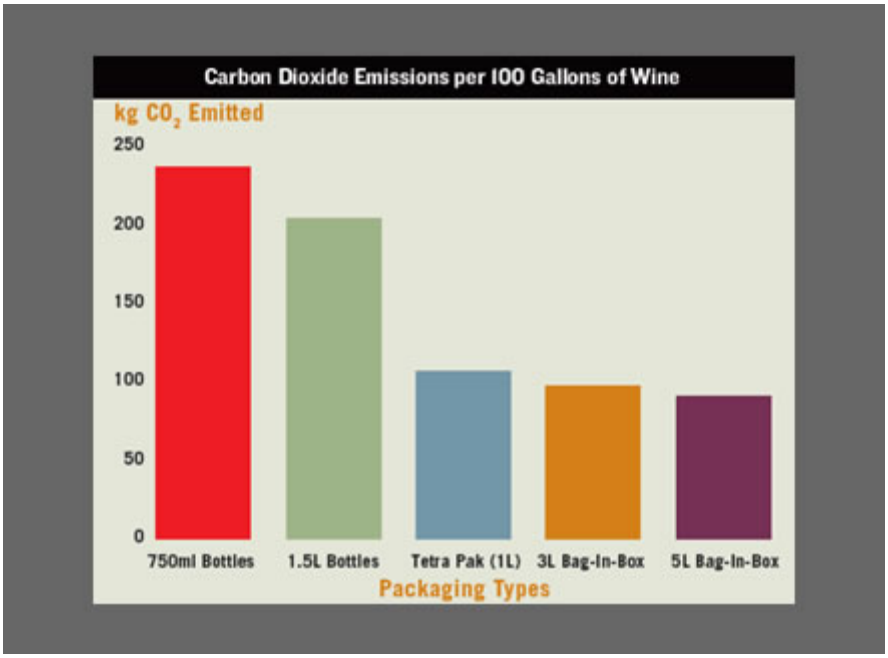
Will wine lovers soon refuse to consume any wines produced beyond a 100-mile radius of where they live? It's not likely, or feasible, in states other than California, Oregon and Washington, among others, but it is a question consumers and producers alike are currently pondering as awareness of CO_2 emissions--and their contribution to global climate change--grows keener.

But when it comes to packaging and closures, the statistics on carbon footprints, if they exist at all, are not clear-cut.

In late October, the American Association of Wine Economists attempted to shed some light on the topic by publishing a working paper entitled "Red, White and 'Green': The Cost of Carbon in the Global Wine Trade." Authored by Tyler Colman, known as Dr. Vino in the wine blogosphere, and Pablo Paster, a sustainability engineer with the URS Group in Oakland, Calif., the study was the first to put forth a calculator for the wine trade that analyzes the carbon life cycle of a bottle of wine, taking into account not only emissions associated with the production of grapes and fermentation, which are relatively low, but those associated with wine transportation.

Bag-in-box packaging like this 3L cask of Killer Juice Cabernet Sauvignon, leaves half the carbon footprint of equivalent glass bottles, and produces 85% less landfill waste.To achieve this, Colman and Paster compared three wines destined for consumption in Chicago: the Australian Yellow Tail, Coulée de Serrant from the Loire, and a hypothetical Napa cult wine produced using sustainable practices and largely sold direct to consumers.

After 33 days of travel in a tightly packed container ship, and additional time in a train or truck to reach Chicago, the total carbon emitted by the bottle of Yellow Tail was 2.2 kilograms for the 750ml bottle and 2 kilograms for the magnum. After an ocean crossing in a container ship and time in a truck traveling from a New Jersey warehouse to Chicago restaurants, the biodynamically farmed Coulée de Serrant yielded 2.12 kilograms of CO_2. But the hypothetical Napa cult wine, bottled in heavyweight glass common among high-end producers--purchased through a mailing list and shipped overnight to the consumer in Chicago--produced an emission of more than double the other two, or 4.5 kilograms. The weight of the glass bottles doubled the per-ounce carbon footprint of the wines inside.



Based on 2001 figures and assuming an average emission of 2 kilograms per liter extrapolated over total global wine consumption, the study concluded that while constituting less than 1% of the 6.3 billion tons in

global greenhouse gas emissions, wine industry carbon output levels are still equivalent to the fossil fuel combustion emissions of 1 million passenger vehicles over the course of a year.
As consumers become more eco-concerned, producers are turning to packaging alternatives with lighter carbon footprints. The weight of traditional glass bottles makes shipping more costly, by both monetary and environmental measurements. Source: Roger Boulton, dept. of enology UC Davis; U.S. Dept. of Energy and Franklin Associates for Tetra Pak data.

"Our results confirm that the carbon inputs of transportation support the finding that distance matters, but mode of transport is still key," Colman wrote. In fact, assuming bottle mass is constant, in New York, he concluded, it is more "green" to drink wine from Bordeaux than from Napa.

Take-along Tetra Paks of French Rabbit won fast track sales for Boisset America.
Are alternatives the answer?

Reducing wine shipment weight is key, as both containers and trucks are packed by weight, not volume. As a result, some environmentally oriented producers have embraced alternatives to glass.

Jim Ferguson, vice president of marketing for DFV Wines, which markets the 3L Bota Box for under $20 in most markets, estimates that on a single truck, he can ship nearly twice as much wine in the recycled cardboard package than he can in glass bottles.

"It cuts greenhouse gas emissions in half, and reduces landfill waste because the box is biodegradable and the plastic bag is biodegradable," he said.

The prototype for the Bota Box was developed in the '90s as a response to Internet wine sales, but was not formally introduced to the market until 2004. In October, it underwent a "green" makeover, consisting of Kraft paper, cornstarch glues and soy-based inks.

DFV is currently considering packaging some of its higher priced Monterey wines in the same container, and selling it for as much as $25 retail, while simultaneously developing a new package with properties similar to the Bota--re-sealability and extended shelf-life after opening--but the look of a conventional bottle package.

"At some point there are thresholds where consumers begin to resist," Ferguson said. "You're not going to put a $150 Lafite in a box."

Patrick Egan, brand manager for Sausalito, Calif.-based Boisset America's French Rabbit (which is sold in Tetra Pak), is overseeing the company's introduction this spring of two additional alternative packages, both chosen for their recyclability.

Mommessin Beaujolais is now packaged in this festive aluminum bottle, featuring Stelvin screwcap. Note the "chill me" dot, which turns blue when the wine is properly cooled.

Mommessin Beaujolais will be sold in a bottle-shaped 750ml aluminum container with a Stelvin screwcap closure, featuring a "cool dot," a temperature-sensitive dot designed to turn blue when the Beaujolais has been chilled to the optimal drinking temperature of 58ºF. The other is Yellow Jersey, a line of Pinot Noir, Chardonnay and Sauvignon Blanc *vins de pays*, that will be the first wine sold in a 750ml PET plastic bottle in the U.S. The PET is equipped with an oxygen-consuming technology called MonOxbar, which Egan said has been tested against glass bottles in a cellar and found to perform just as well over the course of a year. The price on both items is $11.99.

"These packaging alternatives are good for consumer-driven brands, especially when you take transportation into consideration," Egan said. "They're not great if you're producing only 50 cases."

Attuned to the wine industry's vulnerability to so-called carbon criticism, San Francisco's Wine Group recently produced a series of charts featuring data culled from multiple sources, including Roger Boulton at UC Davis, the U.S. Department of Energy, the EPA, the Container Recycling Institute and Franklin Associates that illustrate the differences in both carbon footprints and landfill waste among packaging formats. The company has shared the findings with large retail customers.

The data show that, like the 1L Tetra Pak, the 3L bag-in-box known as the premium wine cask and the 5L bag-in-box, dubbed the wine tap, leave half the carbon footprint of traditional glass packaging, or 92, 8, and 77 kilograms per 100 gallons of wine respectively.

Bag-in-box, and similarly Tetra Pak--embraced by brands such as Bandit and French Rabbit, produce approximately 85% less landfill waste than glass bottles.

"Not only have we as a company been focused on environmental issues in the last few years," said Brian Voss, the Wine Group's chief operating officer. "But major retailers are interested in reducing carbon emissions and waste."

One retailer who has taken note is David Duran, beverage business unit director for San Antonio, Texas-based H.E.B. If presented with two wines identical in quality and price, but packaged in glass and an alternative such as bag-in-box, Duran, who oversees purchasing for the company's 303 stores, said he would be inclined to buy the more environmentally friendly package--provided the supplier committed to educating the consumer.

"You can make statements about what you're doing from a PR perspective, but you really make a difference in what you do with marketing, explaining why we buy what we put on our shelves," he said. "The bag-in-box business has grown not because of its carbon footprint, but because it's a great product in a box. But if you combine that with an environmental message, then you have a more compelling story," he added.

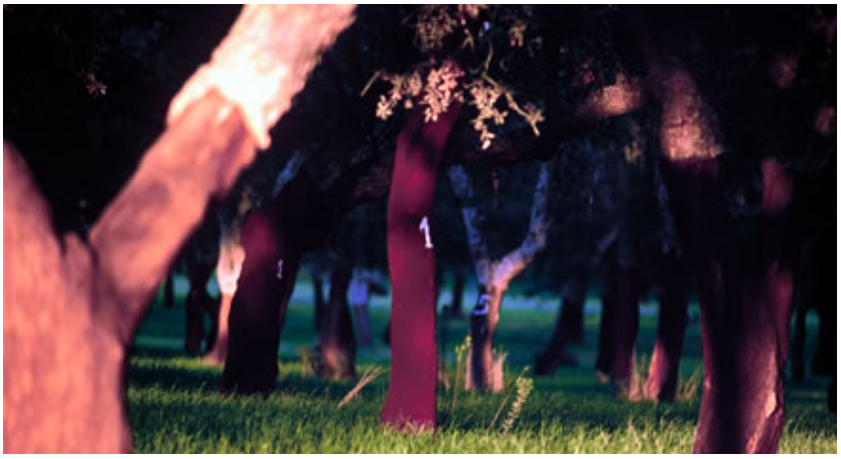
Parducci's chlorine-free cartons, made from recycled paper and printed with soy-based inks, contributed to parent Mendocino Wine Company's recent receipt of the Governor's Environmental and Economic Leadership Award.

Last spring, the Parducci Winery in Ukiah, Calif., achieved carbon neutrality, a qualification it attained by embracing both mitigation--reducing and eliminating carbon emissions through energy-saving measures such as the installation of solar panels, harnessing wind power, fueling tractors and trucks with biodiesel, and swapping incandescent bulbs for florescent ones--and offsets, investments in enterprises dedicated to green energy production and methane and bio-gas capture. The winery is scheduled to receive its official certification early this year.

According to Tom Thornhill, a partner in the Mendocino Wine Company, which owns Parducci, the company has also made several changes to "green" its packaging, opting to use both post-consumer recycled paper and tree-free (Kenaf) paper made from bamboo and other plants. The company prints with soy-based inks, ships in chlorine-free cartons made from recycled paper, and has eliminated metallics from the packaging process.

"When you embrace this idea of sustainability, you start to find that everything is connected, from vineyard to package," Thornhill said.

As for swapping glass for an alternative, he said, "In our price-point, I don't think the Tetra or bag-in-box is the right positioning. The consumer isn't quite there yet." He added, "If I could sell my production within 100 miles, I would be very happy to do so."



Rich Bouwer, general manager of Saxco-Demptos's California Glass in Oakland, Calif., said that in the last six months, his wine clients' interest in lighter weight glass has "intensified greatly," and that many have already made the switch to Kraft shipping cartons. While the majority have not yet begun purchasing bottles in lighter weights, his company does sell 10 different weight classes of glass, and is pushing ahead in researching additional formulations to be prepared for the demand he believes is imminent.

Portuguese cork producers maintain that cork is the most sustainable link in the wine packaging chain. Cork trees can live hundreds of years and their bark is harvested every nine years; the codes on these trunks indicate some were harvested in 2001 and one in 2005.

Closure contributions

And how do closures stack up? Amorim, a leading supplier of cork based in Mozelos, Portugal, released its 2006 Sustainability Report, a comprehensive study. Akin to an annual report, it maps out the status of cork as the most sustain ably minded link in the wine packaging chain, due to the natural carbon-retention properties of cork trees, which on average live to be 200 years old and can be harvested for their bark every nine years.

"Thirty percent of our volume creates 70% of the value," said Carlos DeJesus, director of marketing and communications for the company, which has waged a battle against TCA. He added that in addition to retaining CO_2, cork forests provide a natural habitat for a diverse array of wildlife species, while sustaining whole communities that depend on the crop for an income equivalent to 90 euros per day during harvest in some cases, far more than the rates other agricultural workers are paid.

To date, the primary concern of synthetic stopper buyers, according to Glenn Kellow of Bainbridge Island, Wash.-based Beltappo, Inc., has been how they perform in the bottling line and in the bottle, rather than the effect their production--or handling after use--may have on the environment.

Kellow explained that because manufacturing takes place within very small contained chambers, the industry is very clean. Technically speaking, the synthetic stoppers are recyclable, classified with D4 plastic recyclables, designating them for shredding, mulching and re-use.

Thornhill of the Mendocino Wine Company currently uses both cork and screwcaps for his company's wines, and said the management team is currently debating the benefits of each.

"The Stelvin is a superior closure, but the engineering of the screwcap at this time requires new aluminum," he said. "It's recyclable, but it isn't made from recycled aluminum."

But Bruno De Saizieu, vice president of sales and marketing for Alcan Packaging Capsules, which produces and markets the Stelvin screwcap, disagrees. He said that depending on where the caps are made, they are produced from a combination of new and recycled aluminum, and that globally, 35% of all aluminum is recycled. He added that his company has reduced its carbon footprint by 20% in the last five years, and intends to further reduce it by 10% in the next five years.

Indeed, the battle among wine packagers over the right to claim the smallest carbon footprint has begun. Odds are, it will continue for much time to come, and if consumers have any say, the industry may wind up adopting a new word to articulate, in definitive terms, the virtues of carbon neutrality. After all, the *New Oxford American Dictionary* in November chose "locavore" as the 2007 Word of the Year.

"Locavinophile," anyone?

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