

Going Beyond Glass

How different types of wine packaging stack up / By Dana Nigro

If you've ever hoisted a case of wine up a flight of stairs, you know how heavy all those glass bottles are. Now think about how much energy was expended to move the roughly 3 billion cases' worth of wine produced globally in 2011. All those wines travel by trucks, trains, planes, ships or cars—usually with stops en route at distributors, importer-exporters or retailers—before they reach restaurants and consumers' homes.

Transporting wine remains one of the industry's biggest contributions to greenhouse gas emissions, according to two recent studies published in the *Journal of Wine Research*. No wonder eco-minded wine producers are switching to lighter-weight, more affordable, streamlined packages that can be easily compacted, widely recycled or even reused.

"By cutting down on the total weight of the package, you start reducing the overall carbon footprint of the product," says ecoVINO owner Chris Large, who sells organically grown wines in plastic pouches.

For wines meant for early consumption, glass doesn't always make the most sense. "Glass is designed as a multiple-use container, and in wine it's a throwaway, for single use. In America, most glass ends up in a landfill," says Charles Bieler, co-founder

of Three Thieves and The Gotham Project. (See the chart on page 75 for U.S. recycling rates.)

No one is giving up on glass just yet. Manufacturers have introduced lighter bottles that are as little as half the weight of their traditional counterparts. But in the past decade, producers have also put quality wines into kegs, mini-barrels, bag-in-the-box, plastic or aluminum bottles, cartons and pouches—offering convenience for by-the-glass pours or when glass is too heavy or inappropriate. Some wineries offer refillable jugs, snap-top bottles or stainless-steel canteens for customers who live in easy travel distance.

One drawback for many alternative packages is the shorter shelf life, often only a year or less before wine quality starts to deteriorate. And earning customer acceptance takes time, says Bieler, who sells wine in kegs and Tetra Pak cartons. While alternative packages intrigue people, he says, that's "followed by needing more info to help them wrap their heads around it."

To help readers get a handle on some of the more popular packages, as well as newer products, we break down their benefits and drawbacks. We've grouped the packages roughly in order of level of current usage for retail consumers plus future interest, followed by a bulk option for restaurants and a look at the possible future of packaging.

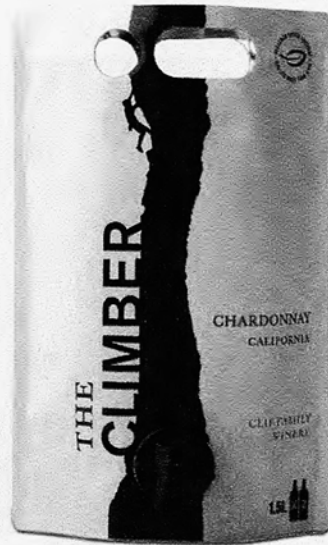
WINE PACKAGING, BY THE NUMBERS

We've indicated that packages are renewable if at least two-thirds of the material meets that criteria, and are recyclable or biodegradable if those materials are easily separated from any portions that are not. In addition, recyclable indicates the material is commonly recycled in North America; for materials that can be recycled but are not part of most community recycling programs or that require extra effort, we've marked "Maybe." Packages are marked as reusable if some producers are doing so on a commercial basis.

	RENEWABLE	RECYCLABLE	REUSABLE	BIODEGRADABLE	PACKAGING WEIGHT OF MATERIALS*
GLASS BOTTLES	N	Y	Y	N	3.6kg to 10.8kg for 9L case
BOXES & BARRELS	Y	Y	N	Y	68.5g for bag refill to 450g for 9L case equivalent
TETRA PAK CARTONS	Y	M	N	M	302g to 404g
ASTRAPOUCH	N	M	N	N	288g
PLASTIC PET BOTTLES	N	Y	N	N	540g
ALUMINUM	N	Y	N	N	432g; FLASQ, 953g
KEGS	N	S	Y	N	4.5kg for 10L keg
PAPER	Y	Y	N	Y	660g

● Yes ● No ● Maybe/Sometimes, depending on local programs and/or manufacturer

* Bars represent weight of material compared to a 9L case of heaviest glass bottles



While boxes are often affiliated with mediocre wine, that perception is being overcome as more producers package better-quality wines in more attractive boxes, such as Wine Cube, Black Box and Bota Box.

For a more upscale approach, Boisset Family Estates introduced a "barrel-to-barrel" program for restaurant by-the-glass service and plans to offer it for home use this year. Its Raymond Cabernet Sauvignon and DeLoach Pinot Noir come in real oak barrels, in 3L or 10L sizes; when empty, only the thin refill bag (in a basic brown paper box for easy shipping) needs to be replaced. For a 10L bag, the weight works out to about 1 gram per glass. "It's 99 times less surface-to-volume," says president Jean-Charles Boisset. "We feel this is probably the best innovation after the Tetra Pak."

Tetra Pak Cartons

Renewable: **Yes**
 Recyclable: **Maybe**
 Reusable: **No**
 Biodegradable: **Maybe**
 Packaging weight: **302 grams to 404 grams/9L case equivalent**

Tetra Pak touts stats such as a 96-to-4 product-to-packaging ratio (a wine bottle is about 60-40) for its cartons, which are typically found in 1L and 500ml

sizes for wine. Since they can pack flat, one truck of empty Tetra Pak cartons equals 26 trucks of empty bottles.

Tetra Pak cartons—already familiar to shoppers for soup, juice and shelf-stable milk—stand out among alternative packaging for their rapid growth after first being introduced to the United States for wine in 2004. Brands such as Bandit, French Rabbit and Yellow + Blue are sold exclusively in cartons. Boisset, whose company has also tried aluminum and plastic bottles, says, "This is really the best of the best for wine."

The resealable cartons are made of about 70 percent paper, of which an expected 50 percent will come from Forest Stewardship Council-certified sources in 2012. Layers of aluminum foil and polyethylene plastic make the package liquid-tight and provide barriers against air, light and contamination; Bieler recommends a shelf life for wine of 12 to 18 months. These layers also make separating out the individual materials for recycling more difficult. However, the cartons should be accepted anywhere that takes milk cartons, and Tetra Pak is working to increase recycling rates. (The Carton Council lists communities with carton recycling and information on how to mail in cartons for recycling at www.recyclecartons.com.)

AstraPouch

Renewable: **No**
 Recyclable: **Maybe**
 Reusable: **No**
 Biodegradable: **No**
 Packaging weight: **288 grams/9L case**

Looking like a giant Capri Sun juice pouch for a kid's lunch, the AstraPouch is a sturdy bag-without-the-box that stands up on its own. Like boxed wines, it comes in sizes from 1 to 3 liters, with the same one-way nozzle to keep out oxygen, and the same shelf life. But since the pouch is flexible, durable and quick-chilling, it's convenient for beaches, poolside lounging, hiking and camping. Launched in 2008 and introduced to the U.S. in 2010, it's now used by eight premium wine brands, including ecoVINO and Clif Family Winery's The Climber in the 1.5L size, as well as for ready-to-drink cocktails.

AstraPouch's main eco-advantage is its ultralight weight: "A full, 9L case of our wine weighs 23.6 pounds, significantly lighter than your average bottled case at 35 to 40 pounds," says ecoVINO owner Chris Large. And it's thin; 10 pouches take up the space of one glass bottle in a landfill. The BPA-free plastic—layers of food-grade polyethylene and PET—can be recycled with #7-labeled mixed plastics in communities that accept that type.

Plastic PET Bottles

Renewable: **No**
 Recyclable: **Yes**
 Reusable: **No**
 Biodegradable: **No**
 Packaging weight: **540 grams/9L case**

Though at quick glance on a store shelf, a PET (polyethylene terephthalate) bottle can look much like an ordinary wine bottle, plastic has image problems. "The technology is brilliant," says Boisset, whose company tried PET for three brands but has since switched those to lightweight glass. "But the consumer and the trade haven't been bullish on it." Plastic can look and feel cheap—as if wine is no different than an everyday bottle of water.

Most PET is petroleum-based and doesn't biodegrade. But the production process uses less energy and results in lower greenhouse gas emissions than that for glass, and the #1-labeled plastic is widely recyclable, used to make bottles, fleece and carpet.

Though it's nonreactive, PET lets in more oxygen than glass, so it's not ideal for protecting wine. Shelf-life claims range from six months to two years before oxidation becomes noticeable. However, Sutter Home uses bottles with an ultrathin glass lining