

THE ELEGANCE OF EXPELLER PRESSED.

From the Oil Experts at Bunge.

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Simply put: today's consumers want food, simply. Shoppers are choosing products with fewer ingredients, products with fewer artificial ingredients, and products that are closer to the fresh foods they know. People didn't come out of the recession penny-pinchers, but they did come out demanding more value from every product.

Correspondingly, more and more restaurants and food formulators are asking for artisan oils—those that carry the premium expeller pressed, cold pressed, or virgin label. People associate these attributes with quality, and, with more discretionary income in their pockets, they aren't afraid to indulge in good value from trustworthy companies that bring passion into crafting their finished products.

Beyond the demand for a tasteful, finished oil product, there's another driver behind the growth in the expeller pressed oil market: consumers see the brands they support as extensions of themselves. This is particularly true of the social media-savvy millennial generation (ages 19-35).



Shopping for food or visiting a favorite restaurant with friends and family is about quality nourishment, but it's also a reflection of values. One of those values is "authenticity"—namely, reconnecting to origins, to what got us here, to what will last. One answer to that call for authenticity is the expeller press, which is deeply ingrained in America's agricultural heritage. Consumers want to be a part of that.

THE EXPELLER PRESS: AN AMERICAN INVENTION

America is a country where we make things, elegant things: the cotton gin, the steam engine, the tractor, and rubber tires. In 1876, an enterprising young man from Ohio saw a paper printing press at the Chicago Centennial Exposition. His name was Valerius Anderson, and 10 years later he would go on to invent the world's first continuous screw expeller press to extract oil from crop seeds.

The expeller press was incredibly successful: in the early 1900s, 60 to 80 percent of the soybean crush was done this way. It was the most efficient method at the time, recovering up to 70 percent of the oil.

Then, in 1941, Germany invented a new method for extracting oil from seeds using solvents. Solvent extraction is more efficient than expeller, yielding up to 99 percent of the oil, and can operate at higher capacities.

But like bell-bottoms and baseball season, good things come back around. The sales of

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expeller pressed cooking oils have jumped nearly 300 percent since 2011, according to Nielsen data. Consumers associate the expeller pressed label with premium products, and there's a high correlation between expeller pressed oils and oils that are also labeled non-GMO. With discretionary spending on the rise, consumers are demanding premium products—like expeller pressed oils and oil ingredients—and are increasingly able to pay for them.

EXPELLER PRESSED OIL TODAY

Consumers who buy expeller pressed oils appreciate coming home with a product that's more gently processed, and one that may retain more of the delicate flavor and fatty acids of the original oilseeds. Over half of today's consumers pay close attention to the ingredients used in the products they buy, according to Dataline, and with a world of information at their fingertips, they know more about food ingredients and manufacturing than at any time in history.

Livestock farmers have also been enjoying the benefits of expeller press methods: the meal left behind after the oilseeds are pressed has a higher fat and protein content and is highly desired for the cow-calf and similar feed markets. Sunflower meal after mechanical pressing has a fat content of 13 percent—versus after-solvent extraction, where it may have fat content of only 1 percent, according to the National Sunflower Association.

Whole Harvest was the first company to offer an expeller pressed line of culinary oils for commercial applications (wholeharvest.com), and they were recently acquired by Bunge. “We see more of our customers asking for the expeller pressed label or

looking for minimally processed oils,” says Brian Anderson of Bunge. “So we're really pleased to expand our capacity to provide expeller pressed oils and, in turn, to bring our expertise and extensive network and logistics capacity to Whole Harvest products.”

Whole Harvest oils are already used in many quality food applications and, like other Bunge oils, have a reputation for a long fry life and great texture and taste.

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*- BRIAN ANDERSON
VP OF MARKETING AND INNOVATION*

OIL EXTRACTION METHODS: BUNGE OIL EXPERTS EXPLAIN

- **Solvent Extraction:** Oil heated to high temperature (400°F or higher) and extracted with a solvent; recovers about 99 percent of the oil.
- **Expeller Press:** Heavy pressure is continuously applied to seeds by tightening screw, until oil seeps out; recovers about 65-70 percent of oil (also called Screw Press or Mechanical Press).
- **Cold Press:** Oil kept at low temperature during mechanical extraction; in Europe, regulated to be below 80-120°F, depending on source.
- **Virgin and Extra Virgin:** Cold-pressed and from the first pressing (hence the name “virgin”); extra virgin olive oil has 1% acid, virgin olive oil has 3% and is less sensitive to heat.
- **Refined Oil:** Oil is heated and more thoroughly processed to remove additional resins, pigments, gums, waxes, and/or odors; more stable for storage and good choice for high-heat cooking.
- **Unrefined Oil:** Oil is only lightly filtered; retains more flavor, is highly sensitive to heat, and has limited shelf life.

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The Whole Harvest line includes expeller pressed frying oils, pan sprays, and liquid butter alternatives that are free from artificial preservatives. They're also free from cholesterol and trans fats and offer non-GMO cooking oil and pan coating options. With a range of oilseeds—canola, cottonseed, and soy—Whole Harvest speaks to a wide range of customer needs and preferences.

heat-free, preservative- and additive-free, and pressed from #1 grade quality seeds.

By adding new oils and ingredients to Bunge's portfolio, food brands have additional options to support the growth of their business with the exceptional flavors, performance, and customizable features they've come to expect from Bunge.

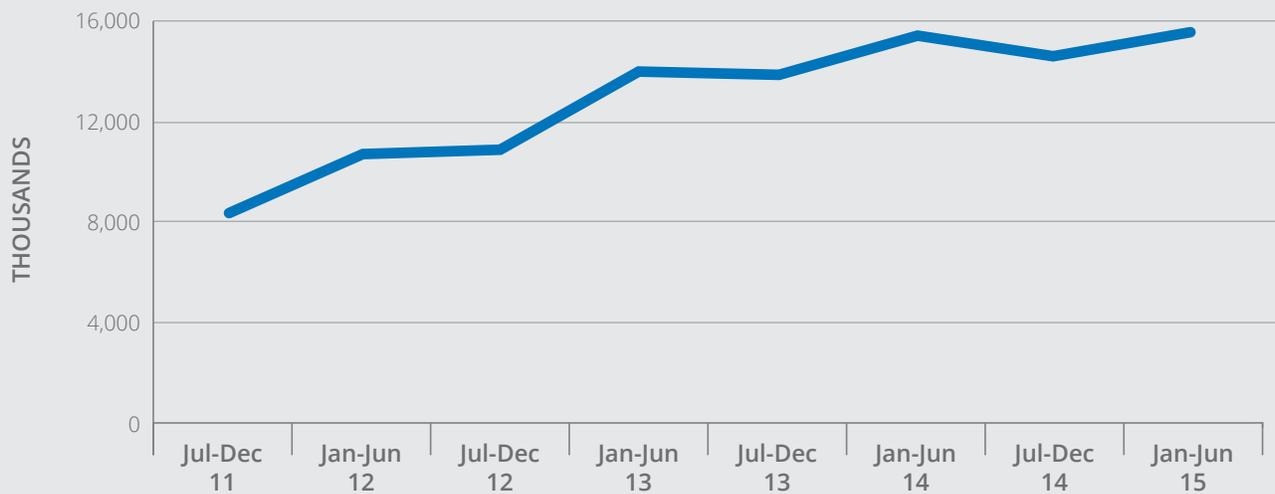
"IN ADDITION TO ANSWERING THE RISING DEMAND FOR EXPELLER PRESSED OILS, OUR WHOLE HARVEST OILS ARE ALSO MADE RIGHT HERE IN THE UNITED STATES, WITH FACILITIES IN BOTH NORTH CAROLINA AND NEVADA."

- BRIAN ANDERSON
VP OF MARKETING AND INNOVATION

The Whole Harvest line extends the virgin, cold-pressed soybean, sunflower, and canola oils Bunge has already been offering to U.S. restaurants through a partnership with Pristine Gourmet (virginoils.com), which is operated by fourth-generation Canadian farmer Jason Persall. All of Persall's extra virgin oils are cold-pressed,



BOTTLES OF EXPELLER PRESSED OIL SOLD IN US



PREMIUM PRODUCTS RELY ON PREMIUM INGREDIENTS

It's no coincidence that the expeller press market is expanding at the same time as more and more companies are bringing transparency to all the ingredients they use, from where they're grown to how they're processed to how they reach people's tables. In using expeller pressed oil, a company conveys its willingness to apply an even more critical eye toward the detailed steps that go into crafting quality foods.

At Bunge, we recently renewed our commitments to nourishing a growing population in a way that's sustainable for people and for ecosystems (bunge.com/citizenship). We've always been proud of who we are as a company, and we're excited to be able to share our culture, our practices, and most importantly our food ingredients with our customers.

Visit BungeOilExperts.com to learn more about expeller pressed oils from the oil experts at Bunge.

THE JOURNEY: FROM AN OILSEED TO A BUNGE EXPELLER PRESSED OIL

01

Raw soy, canola, or sunflower oilseeds

02

Expeller pressed at low heat (200°F/93°C)

03

Meal is separated from oil

04

Physical refining of oil

05

A mild citric acid (a natural preservative also found in citrus fruits) removes the phospholipids (solid fat matter, or "gums"), trace metals, and other impurities from the oil*

06

Natural minerals may be used to absorb color pigments

07

Steam may be used to remove odors, free fatty acids, and other readily evaporated compounds

08

Oil is ready to be bottled and packaged

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* In Bunge's gentle, proprietary process, this is done without the use of phosphoric acid or sodium hydroxide, which other physical refineries sometimes use to degum expeller pressed oils.