ENARTIS OAK ALTERNATIVES:

contribution, advantages and choice

For centuries, winemakers have utilized oak barrels for making wine. While today oak barrels are still considered the optimal treatment for high quality wines, using oak barrels imposes some major challenges for winemakers. For this reason alternative methods and tools have been developed which give winemakers greater control and flexibility with oak ageing.

What does oak contribute to the wine?

When released into wine, wood compounds enhance structure and the perceived sweetness of wine, impact the aromatic profile and can help colour stabilization. More specifically,

- **Polyphenols and polysaccharides** increase structure and improve roundness. By reacting with wine polyphenols, they help stabilize wine colour.
- **Aromatic compounds** contribute to the wine the oaky aroma: vanilla, toasted bread, spices, coffee, chocolate, coconut, bourbon etc. etc. Which aromas are produced depends on oak selection to some degree, but primarily on the toasting process. Toasting oak during barrel processing modifies the structure and chemical properties of wood. Increasing temperature and length of toasting will:

- Reduce oak lactone content that contributes to "fresh oak" and coconut aromas.
- Increase "vanilla", "caramel-like" and "roasted coffee" aromas associated with vanillin, furfural, 4-methylfurfural and maltol. At heavy toast levels these compounds are replaced by "spicy" (eugenol, isoeugenol, 4-methylguaiacol) and "smoky" characters (4-methylguaiacol, guaiacol, 2-methylphenol).

Why use barrel alternatives?

There are many reasons to consider oak alternatives:

- **Cost** is the most common reason of using barrel alternatives. Using barrel alternatives reduces 'oak' investment, labour and timing, significantly.
- **Storage space** is considerably reduced when using tanks + oak alternatives to simulate oak ageing instead of barrels.
- **Quality** is more consistent and easier to check.
- **Risk of microbiological contamination** is reduced
- **Ease of Use**: large volumes can be treated in tank, minimising wine movements and handling

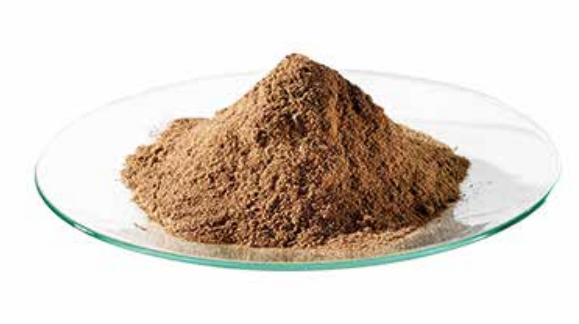
How to find the right oak alternative?

Fermentation
- Incanto N.C.
- Incanto Chips
- Tannin / polysaccharides

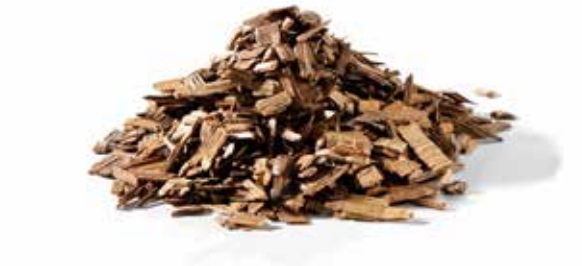
Pre-ML
- Incanto Chips
- Barrel Boost
- Tannin / polysaccharides

Post-ML Maturation
- Incanto Chips
- Barrel Boost
- Tannin / polysaccharides

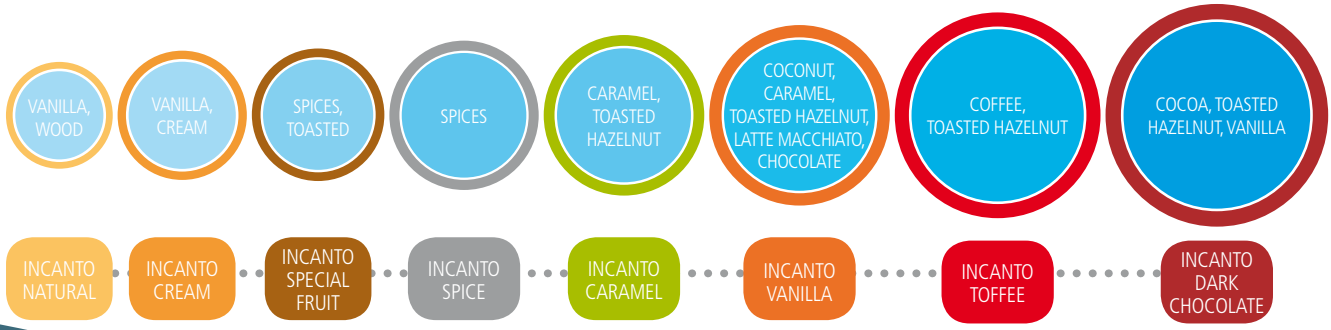
Bottling
- Tannin / polysaccharides

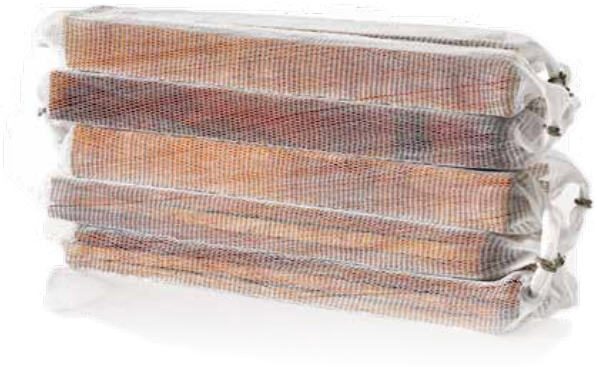


IncantoN.C.:
The Incanto N.C. products are completely soluble formulations just containing tannins extracted mainly from toasted oak and yeast polysaccharides. They mimic the effect of oak dust in fermentation while offering a few advantages: absence of solids that could damage the mechanical parts of harvest machinery, dosages 10 times smaller than the usual oak powder ones, zero loss of colour by solids absorption, reduce waste.



Incanto Chips:
Produced from selected wood of French and American oak, Incanto chips are toasted using a unique and original process that employs a progressive heating scheme that results in a deep and homogenous toast. Their size is about 2-4 mm and they give the best results after 4-6 weeks contact. Incanto chips are available with different toasting. Their names are evocative of the expected aroma.





Ministaves:

Incanto Ministaves are produced with the same process adopted for the chips. They are used for mimicking the effect of barrel ageing: same aromatic complexity and longevity, same soft structure. Their size is approx. 25 cm length, 2.5-5 cm width and 0.9 cm thickness. Suggested contact time is 4 – 6 months. Dosages can vary from 1 to 5 g/hL. Incanto ministaves are available with Cream, Special Fruit, Vanilla, Caramel, Toffee and Dark Chocolate toasting.

Barrel Boost:

Incanto Barrel Boost consists of 24 ministaves in infusion-bag chain, designed to extend barrel life. One chain per barrel equates to the addition of 25% new toasted oak. The optimum contact time is from 4 to 6 months.

Tannin:

The Enartis Tan range includes quite a few tannins extracted from oak that can be used to refine the wine all-long the maturation phase until pre-bottling. They are produced from the same oak wood used for oak barrels. After seasoning and toasting, tannins are extracted, concentrated and spray-dried to maintain the aromatic and sensory properties of oak. The combined use of yeast polysaccharides completes the "oak ageing" effect of tannins.

THE ENARTIS TAN RANGE

	Structure	Astringency	Softness	Aroma Intensity	Aroma description
Tan SLI	2	1	4	4	Oak, coconut, vanilla
Tan Extra	2	1	4	5	Vanilla, caramel, cocoa, coffee
Tan Superoak	2	1	2	2	Vanilla, caramel, tobacco
Tan Elevage	3	3	2	3	Toasted oak, caramel
Tan Napa	3	1	4	5	Coconut, vanilla, cocoa
Tan Cœur de Chêne	2	2	3	4	Vanilla, caramel, spices, medium toasted oak
Tan Vanilla	2	2	3	5	Vanilla, butterscotch, coconut, almond
Tan Toffee	2	2	3	4	Toffee, vanilla, caramel, hazelnut
Tan Dark Chocolate	3	1	4	5	Cocoa, toasted almond, hazelnut
Unico #1	4	1	4	6	Vanilla, caramel, spices, medium toasted oak

A wide range of Oak Alternatives

The extraction of oak compounds as well as the sensory impact on wine depends on many variables including the physiochemical characteristics of wine (pH, alcohol, titratable acidity, volatile acidity and SO2), wine buffer capacity, storage temperature, contact time, etc. When deciding which oak alternative to use, we always recommend setting up trials. This way, winemakers can base their oak derivatives decision on accurate data and tasting.

CHIPS AND MINISTAVES

- Use a 1.5 L wine bag or 750 mL bottle.
- Weigh the selected oak chips (dosages recommended for trials = 2-5 g/L).
- Add chips to bag or bottle.
- Write the date, wine lot, oak chips name and dosage on the label. Also prepare a control sample, without oak chips.
- Fill bag/bottle with wine. Be cautious of the oxygen input during filling and head space. We suggest an addition of 5 ppm SO2 at filling to protect wine against oxidation.

Taste after three weeks of contact time

TANNIN AND INCANTO N.C.

- Dissolve 1 g product in 100 mL neutral alcohol-water solution (~ 13%v/v).
- Label each sample. Include one untreated sample as a control.
- Fill samples with wine up to 80% of final volume, leaving space for the addition.
- Add the treatment solution: 0.1 mL of solution in 100 mL of wine correspond to the addition of 1g of tannin or polysaccharide in 1 hL of wine.

Tasting can be done immediately after addition