



Debunking the “NATURAL” Wine Phenomenon

An Investigation into Wine’s Hottest Trend, Its Pitfalls, Processes, and Pleasures

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Society of Wine Educators
Online mini conference – October 20-21, 2023

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What do we think of when we hear “natural” wine?

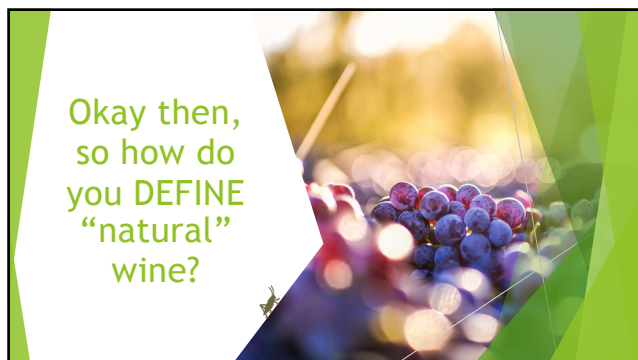
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Is “natural wine”:

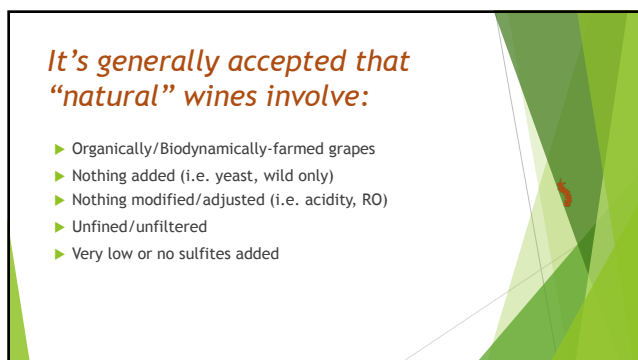
- ▶ Low intervention?
- ▶ Healthier?
- ▶ NATTY i.e. funky with spoilage elements?
- ▶ A purer expression?
- ▶ Tied to organic/biodynamic/sustainable practices?
- ▶ Hippie airy foo-foo nonsense?



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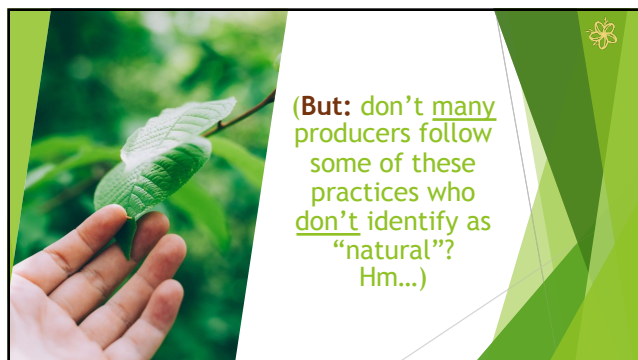
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It's generally accepted that "natural" wines involve:

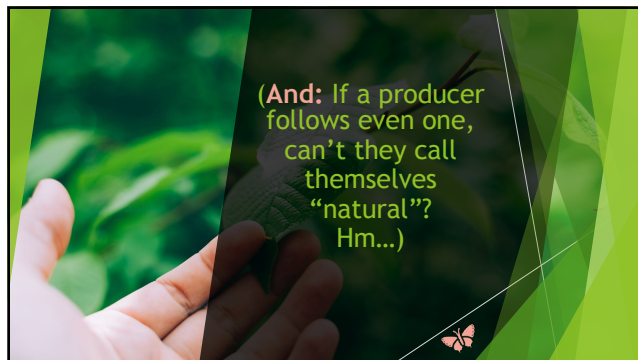
- ▶ Organically/Biodynamically-farmed grapes
- ▶ Nothing added (i.e. yeast, wild only)
- ▶ Nothing modified/adjusted (i.e. acidity, RO)
- ▶ Unfined/unfiltered
- ▶ Very low or no sulfites added

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(But: don't many producers follow some of these practices who don't identify as "natural"? Hm...)

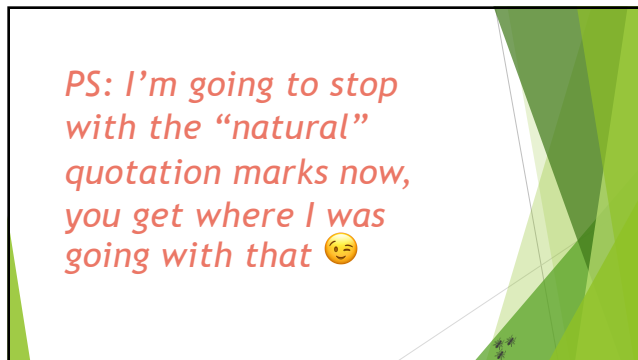
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Regulations/official definitions:

- ▶ None universal!
- ▶ INAO unveiled "Vin Méthode Nature" late 2019>2020
 - ▶ Can't use "natural" after a yogurt labelling issue 😊
 - ▶ After decades of lobbying by the Syndicate for the Defense of Natural Wines
 - ▶ At the end of 3-year trial period, but lots of controversy in EU parliament
- ▶ Hand harvested, certified organically-grown grapes, only indigenous yeast, all additions forbidden, no interventionist practices (RO, flash détente, etc.) No added sulphites, or only up to 30 mg/L. ← two logos, depending on which one

BUT how can you monitor hundreds of producers to confirm and ensure:

- No machine harvesters
- No inoculated yeasts (you can't tell organoleptically)
- No minor interventions
- Etc.




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Also, lots of in-fighting!

- ▶ French Association des Vins Naturels spurred the way more radical Sans Aucun Inérant ni Sulfite.
- ▶ ViniVeri in Italy split, giving rise to Vinnatur and VAN and Vite
- ▶ In Spain, Catalan members of Productores de Vino Naturel were expelled from the association
- ▶ Some natural producers oppose certification, as that would open door for industrial winemakers to take over niche market, or create too much of a bureaucratic burden
 - ▶ "Biggest headache with biodynamic is paperwork" - Bill Sweat, Winderlea OR
- ▶ Greenwashing scandals: finding pesticide residue in French wines marketed as natural
- ▶ Natural vs. (or AND) labelling transparency (but what about processing aids?)



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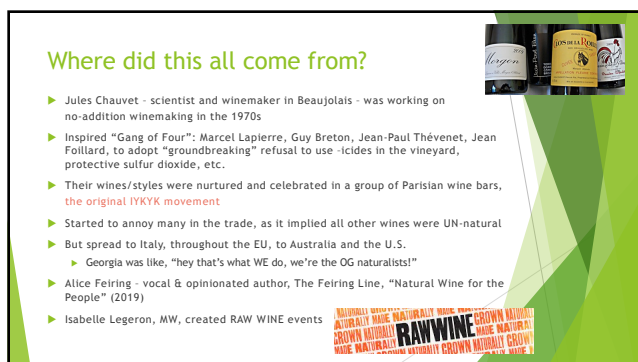
So, already difficulties with defining/regulating... hm.



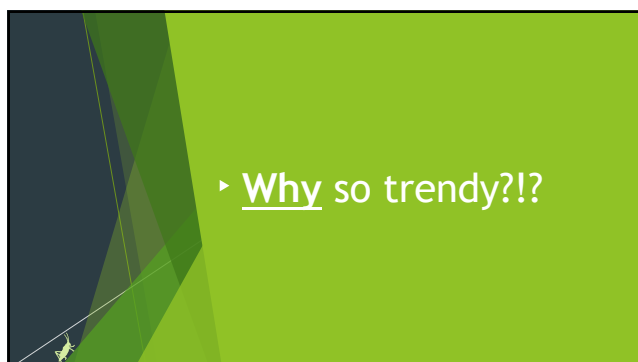
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Health claims:

Natural wine is better for you, because:


- ▶ Less-severe hangovers
- ▶ You won't feel as dehydrated
- ▶ Improvement in gut health



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Myths... BUSTED:

- ▶ MYTH: only natural wines aren't loaded with toxic pesticides




Apologies to the Mythbusters!

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 - ▶ **No scientific proof, though many do have slightly lower abv**



Apologies to the Mythbusters

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Master of Wine Amy Christine wrote:
 "There is research on the link between biogenic amines/histamine causing headaches and the ill effects of alcohol consumption. Sophie Parker-Thompson's Master of Wine research paper showed there is some evidence that **adding SO2 DURING fermentation can reduce the level of biogenic amines**, and therefore potentially the hangover effect. In other words, **exactly the opposite** of what natural wine producers espouse."



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- ▶ MYTH: Sulfites are bad for you
 - ▶ Unless you're tiny % of population actually allergic/intolerant, legally permitted sulfite amounts won't negatively affect your health
 - ▶ PS: No such thing as sulfite-free wine as sulphur dioxide is a by-product of fermentation! Usually up to 10 g/L but can hit 30!



Apologies to the Mythbusters

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There are tons of foods with sulfites - and many with WAY more than wine:

▶ Fruit juices	▶ Baked goods (granola bars)
▶ Lemon/lime juice concentrate	▶ Deli meats, hot dogs, sausages
▶ Jams, jellies	▶ Dressings, gravies, sauces, soups
▶ Molasses	▶ Dehydrated fish, shellfish
▶ Sauerkraut	▶ Noodle and rice mixes
▶ Dried fruit (apricots)	▶ Soy products
▶ Pickled onions	▶ Gelatin
▶ Vinegar	▶ Some medications
▶ Condiments (ketchup, mustard, relishes)	
▶ Tomato paste, tomato puree	
▶ French fries	
▶ Cereal, crackers, cornstarch	



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Legal limits for total SO ₂ in major winemaking nations (in mg/l)			
Country	Wine type (RS)	Limit	Legal Reference/Description
USA	All	350	27 CFR 4.22(b)(1)
AUS	<35 g/l sugars	250	ANZPSC 4.5.1: Clause 5(3)(a)
	>35 g/l sugars	300	
NZ	<35 g/l sugars	250 ¹⁾	
	>35 g/l sugars	400 ²⁾	
EU	white/rosé, <5 g/l red, <5 g/l sugars	200	EC No 606/2009, Annex 1 B
	white/rosé, >5 g/l red, >5 g/l sugars	150	
	white/rosé, >5 g/l red, >5 g/l sugars	250	
	specific wines	200	
	specific wines	300	E.g.: Spätlese (can be dry), Bordeaux Sup., Côte de Bordeaux, C. de Bergerac, Navarra, Penedès, several French VdP and Hungarian and some Greek sweets
	specific wines	350	E.g.: Auslese (can be dry), sweet wines from Romania, Czech Rep., Slovakia and Slovenia
	specific wines	400	E.g.: Beerenauslese, TBA, Eiswein, French sweet wines such as Sauternes, Barsac, etc., sweet Greek with >45 g/l sugars, sweet Eastern European wines
CAN	All	350 ²⁾	Canadian Food & Drug Reg. B.02.100
India	All	450	Prevention of Food Adulteration Act & Rules, Appendix C, Table 3
Japan	All (<1% abv)	350 ²⁾	Japan's Specifications and Standards for Food Additives
RSA	white, <5 g/l sugars	160	Liquor Products Act 60 of 1989 Regulations Regulation 32 (Table 8)
	reds, <5 g/l sugars	150	
	All, >5 g/l sugars	200	
	specific wines	300	E.g.: noble late harvest and naturally dried

¹⁾ unit is mg/kg
²⁾ Canada prescribes a maximum of 70 mg/l free or 350 mg/l combined SO₂

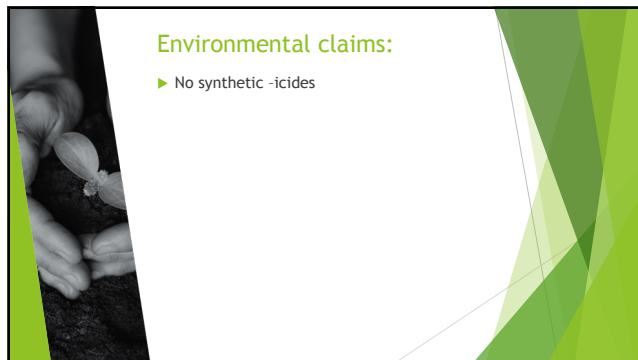
2011 Cornell report

A report regarding dried apricots, peaches, and pears, found an average sulfite level of 2885 mg/kg.

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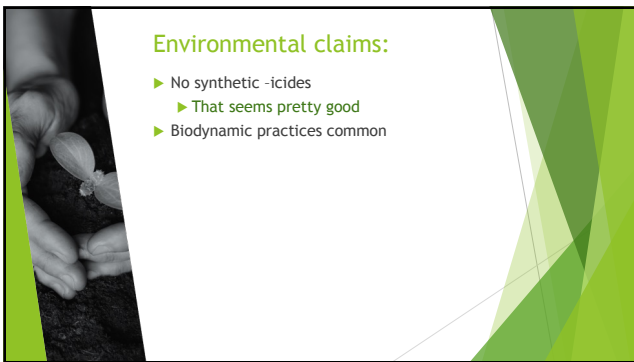
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Environmental claims:

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- ▶ **BUT:** packaging same as conventional (glass bottles, packing materials) so still big carbon footprint...

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<p>ORGANIC</p> <ul style="list-style-type: none"> ▶ Main goal: maintaining optimum soil structure and fertility ▶ Better microbial life ▶ High market benefits ▶ Org vines healthier, longer-lived ▶ More expensive ▶ Lower yields ▶ More frequent copper/sulfur cus no synthetics ▶ Difficult to retain Nitrogen supply ▶ Organic grapes vs Organic wine <p><small>Stephen Carrier, de Fieuzal: they were Org but feels more for marketing, more disease pressure in Bdx. He prefers sustainable.</small></p>	<p>BIODYNAMIC</p> <ul style="list-style-type: none"> ▶ Similar to ORG with more esoteric concepts, treats soil/growth as interrelated system with spiritual/mystical/astrological perspectives. ▶ Treated with 9 mineral-based preparations for nutrition and to help vvd defend itself from pests & diseases ▶ Key tasks (planting, pruning, harvest) timed to rhythms of earth and sky ▶ Vit/Vin standards stricter vs ORG ▶ Hard to quantify ▶ 100+ more man-hours required ▶ Some just pick and choose <p><small>Bill Sweet, Winderlea, OR was able to manage his ownrooted vines vs phylloxera by BIO</small></p>
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YEAST

WILD/INDIGENOUS VS. INOCULATED

WILD/INDIGENOUS

- ▶ Sensitive to SO₂
- ▶ Intolerant of high alcohol
- ▶ Usually active earlier
- ▶ No definable organoleptic character
 - ▶ Kevin Judd, Greywacke NZ says adds "nutty, feral" aromas
- ▶ Controversial concept of "Château terroir"

"We don't inoculate. We don't have stuck fermentations; ours are slower and longer because I want them to be. Maybe one barrel goes vinegar, Brett, but we really have no problems. If there's a little issue, THAT'S terroir!" - Dirk Niepoort

"I've had nothing but problems with indigenous yeast. And I've never understood why something irrelevant besides converting sugar into alcohol is a prime quality determinant." - the late Jim Clendenen, Au Bon Climat

INOCULATED

- ▶ Predictability, smooth fermentations
- ▶ SO₂ tolerance & lower potential to form SO₂
- ▶ Better 2ndary ferm bubbles, flocculant property
- ▶ Not produce acetic/sulfidic off-flavors
- ▶ Yeastical property
- ▶ Improved red wine color
- ▶ Better tolerance of nutrient deficiencies
- ▶ Compatibility with LAB
- ▶ Enhance thiols, other varietal character
- ▶ Lower efficiency (to help with rising abv from climate change)

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Don't forget, inoculated yeast CAME FROM wild yeast!

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SO₂

ADDING VS. NO ADDITIONS

ADDING

- ▶ Antioxidant (combines with O₂ to reduce oxidizing capability)
- ▶ Antiseptic (inhibits development of bacteria, fungi, spoilage microbes)
- ▶ Antioxidasic (anti-enzymatic; inhibits tyrosinase & laccase)
- ▶ Refresher (combines with acetaldehyde to form non-volatile compounds, boosting aroma/flavor)
- ▶ Can bleach brownness from oxidation
- ▶ Keeps bottle variation in check

But too much SO₂:

- Smells of struck match
- Can burn/prickle
- Subdue primary fruit
- Bleach color

Clark Smith (Postmodern Wine) finds sulfites "...express pure, direct flavors of place." And they "short-circuit the wine's natural immune system," like with modern pharmaceuticals that hamper these wines' actually have great staying power once opened.

NO ADDITIONS

- ▶ Wine can oxidize, turn brown, lose primary aromas and flavors
- ▶ Wine can be affected by brett, acetobacter (> vinegar)
- ▶ Can become flat, dull, stale, tired, lifeless
- ▶ Storage big issue, needs to stay below 57F throughout supply chain


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Fault/No fault



Brett

- ▶ *Brettanomyces bruxellensis* / Dekkera
- ▶ Forms ethyl phenols
 - ▶ Vary according to variety, temperature, oxygen availability, wine composition
- ▶ 4-ethyl phenol (4EP) plastic, barnyard
- ▶ 4-ethyl guaiacol (4EG) medicinal, spicy, smoky, cloves, bacon
- ▶ Also reduces primary fruit flavor and intensity
- ▶ Quite tolerant of SO2 actually

Mousiness



- ▶ Fault caused by strains of *oenococcus* (maybe also brett)
- ▶ Detected as aftertaste, after few seconds' delay, as mouse droppings/urine (not volatile)
- ▶ Easily controlled by SO2
- ▶ Prevented with good hygiene
- ▶ Not possible to treat affected wines
- ▶ [LAB (lactic acid bacteria) can also contribute to geranium taint in presence of sorbic acid]


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Can these be considered a complexor at low levels... or is any presence ALWAYS a fault?

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Grey




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Vessels


- ▶ Concrete eggs/tanks - light oxygen exchange, possible mineral leaching, eggs have convection but usu lined
- ▶ Clay amphorae, qevri etc. - historic, possible mineral leaching, ancient practice of burying in the ground, lots of variation & large labor requirement
- ▶ Ceramic - thinner walls vs. concrete, different temperature parameters
- ▶ Granite eggs - naturally cold, saline char
- ▶ Or new/used oak, small/large... and why not stainless steel?



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Does the choice of vessel really make a difference, all else being equal? Or is it simply more of a theoretical element?

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But how far do you want to go...

- Stop grafting rootstocks?
- Stop training vines?
- Stop managing cover crops?
- Stop measuring Brix?
- Stop sorting?
- Stop crushing/destemming?
- Stop monitoring fermentation?
- Stop cooling?
- Stop extended maturation?
- Stop lab analysis?

Wine is, to SOME extent, by nature a manipulated product, so where the heck do you draw the line???

Many say, no such thing as natural wine, because with ZERO intervention, vinegar!

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SO... what do natural wines TASTE like?

Maybe imperceptible from conventional wines!
 Some find tang like cider or kombucha
 Might be oxidized, yeasty, bretty, mousy, VA
 Could be easy drinking "glou-glou" or "vin de soif"
 If skin contact and/or lots of particulates, can have phenolic edge (I get "ginger ale" in many orange wines)
 Perhaps a stony, dusty note from amphorae/ qvevri aging

I once had a southern French orange wine I described to a customer as "Parmesan rind sitting in a saline footbath outside for three weeks during a heat wave." One of the funkier wines I'd ever had, it fascinated me... but even I had trouble finishing that last glass!

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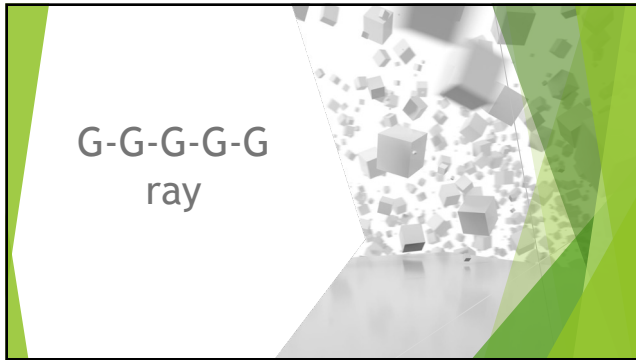
BUT...

- I semi-blind tasted the 2017 Marguet Oger Grand Cru and the 2017 Marguet Verzenay Grand Cru SPECIFICALLY to try and compare terroir.
 - Both 100% Chardonnay (BdB), both biodynamic, native yeasts, low SO2, aged in barrique, unfiltered-unfiltered, ~\$100
 - Oger showed lean, sour fruit, and a "weird estery" note, I noted I did not get quality, "think it was covered by natty style"
 - Verzenay did have an "apple-y ox-y thing", but again, I did not get quality because "lost depth mid-palate, feels natty."

Some other recent blind/semi-blind tasting notes:

- Testalonga Cortez SA CB: "strange - natty"
- Herdade do Rocim red Alentejo: "herbal, natty, tangy"
- Halcyon Days Syrah Hawkes Bay: "Clearly natty/mousy :("

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**CONSUMER PREFERENCES:
STYLISTIC SHIFTS in general**

- ▶ Extracted, high-octane, jammy reds, lots of new oak
- ▶ Reds at all!
- ▶ Explosion of orange wine category
- ▶ Rosé for summer
- ▶ Large House Champagnes
 - ▶ Brut
- ▶ Less-extracted, lighter color, nuanced, larger format/neutral oak, more delicate reds
- ▶ White wine (esp. restaurants)
- ▶ Chillable reds
- ▶ Fewer, higher quality, more elegant skin contact wines
- ▶ Rosé year-round (hooray)
- ▶ Grower Champagne, regions like Franciacorta/England
 - ▶ No dosage

Natural wines certainly fit in.

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So: IS there a great deal of nuance in these wines, ARE they generally more enjoyable, CAN you taste the difference, ARE there defining characteristics...?

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Are you tasting along?

- ▶ Type in the chat some brief key info: region, grape(s), producer... & a word or two on how you find it.
- ▶ Mine: 2021 Gotsa Chinuri Pet-Nat - 531
- ▶ Gotsa: first Georgian Winery certified bio Demeter, wmkv Beka Gotsadze in Ausreti
- ▶ Chinuri: indigenous Georgian W, high acid, oft spk (bl Mtsvane + /or Aligoté)
- ▶ Base wine ferm on skins in qvevri
- ▶ Tropical pineapple, guava, apricot, ginger, kiwi, hazelnut, lil earthy funk, great phenolics
- ▶ breakfast wine

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How are you able to know a wine is natural when you walk into a store?

(Sounds like the beginning of a dad joke.)

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In spite of all the grey areas, maybe natural wine as an **insider, niche product** is fading...

...and low-intervention, terroir-reflective, thoughtful, less-manipulated winemaking is becoming more mainstream?

Don't forget its association with sustainable, environmentally friendly practices. 👍

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But what about the elephant in the room...
the big brands?



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But what about the elephant in the room...
the big brands?

- HUGE volume
- Need consistent products



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But what about the elephant in the room...
the big brands?

Example:
Jacob's Creek: as large volume, use big SS, but they have lots of convection through chimney so even if all cooled, have to use lots of SO2 cus it gets chewed up!



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But what about the elephant in the room...
the big brands?

HOW WILL THEY ENTER THE DISCUSSION?



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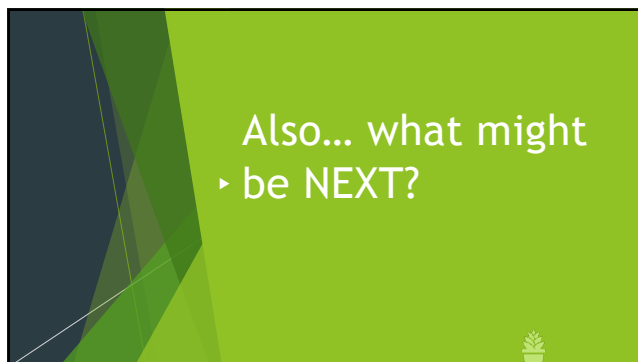
But what about the elephant in the room...
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HOW WILL THEY ENTER THE DISCUSSION?

RUN AWAAAAAY... OR RUN OVER?



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To Sum:

- ▶ “Natural” is still largely unregulated and undefined, and we must do a better job educating consumers
- ▶ There are many positives but also potential negatives in this category
- ▶ So, the GREY AREAS remain, and likely always will
- ▶ But: it is a valuable part of the discussion of the future of wine

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THANK YOU!
Any questions?

▶ Many thanks to the *Society of Wine Educators* and all who made this virtual conference possible!

▶ PLEASE stay in touch:
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