Transcript: What’s really in your wine?

*Note: Episodes of Outside/In are made as pieces of audio, and some context and nuance may be lost on the page. Transcripts are generated using a combination of speech recognition software and human transcribers, and may contain errors.*

*Julia Furukawa: So were you to walk into a Market Basket having landed from another planet with a little bit of context for American history, you could safely assume it was 1981…*

**Justine Paradis: The other day, I went on a trip to my local grocery store with a friend of mine, Julia Furukawa.**

*Julia Furukawa: …it’s unique, it’s special.*

**Our mission was to compare three products: grape juice… lipstick… and finally, a bottle of wine.**

*MUSIC IN*

*Julia Furukawa: Should we try and match the color of the wine to the Sugar Almond?*

*Justine Paradis: It's kind of a rosé**color. A salmon rosé.*

*Julia Furukawa: Salmon rosé!*

**The reason I wanted to do this… should become clear in a second.**

*Justine Paradis: Okay. Would you care to read the ingredients label on this Grape juice?*

*Julia Furukawa: Grape juice from concentrate. Filtered water. Grape juice concentrate. Grape juice. Ascorbic acid. Vitamin C. Citric acid for tartness.*

*Justine Paradis: Would you care to read the ingredient label on the lipstick?*

*Julia: [laughs] K! Ingredients: rinses Communist castor seed oil isopropyl isocyanate mica ethylhexyl hydroxystearate. Paraffin ….*

**Let’s skip ahead – this goes on for a full minute, 15 seconds.**

*Julia: Yellow six Lake. Orange five. Red 27. Blue one. Lake Carmine Red 21.*

*Justine Paradis: That is not an easy task*

*Julia Furukawa: [laughing]*

*Justine Paradis: And now, can you please read the ingredient label on this bottle of wine?*

*Julia Furukawa: Okay.*

*Pause: grocery store ambience*

*Julia Furukawa: There is just a surgeon general's warning… And it contains sulfites. That's all we have.*

*Justine Paradis: There is no ingredient label on this bottle of wine.*

*Julia Furukawa: There is not!*

*Justine Paradis: What would you guess is in this bottle of wine?*

*Julia Furukawa: I would hope it's something adjacent to grape juice, but there's, there's really no telling.*

**The reason I’d had Julia pick out a lipstick is because the** [**US cosmetics industry**](https://www.pbs.org/newshour/health/why-your-cosmetics-dont-have-to-be-tested-for-safety) **is** [**notorious**](https://jessica-defino.medium.com/are-beauty-brands-intentionally-hiding-their-ingredients-694b38f0f11d) **for controversial loopholes. Loopholes which allow companies** [**not to disclose certain ingredients in their formulas**](https://www.safecosmetics.org/resources/health-science/fragrance-disclosure/)**.**

**But when we looked at the lipstick next to the rosé, with its long list of ingredients, Covergirl looked downright transparent.**

*Justine Paradis: What would you say if I told you that there are* [*up to 70 additives*](https://www.ecfr.gov/current/title-27/chapter-I/subchapter-A/part-24/subpart-L/section-24.246) *that can be used in a bottle of wine?*

*Julia: Furukawa: I would be surprised that 70 things could even fit inside this bottle…So yeah, it's a little bit unsettling in a way, yeah…*

MUSIC/THEME

**This is Outside/In. I’m Justine Paradis, in for Nate Hegyi this week. Wine is considered to be an expression of place and climate, of centuries-old traditions.**

**And that does exist.**

**But these days, a lot of wine is a product of an industrialized agricultural system.**

*SFX: Cork pop and wine pour*

**Today on Outside/In... We take a look at what really goes into your wine… and at a growing movement to explore just how *natural* wine can be.**

*Party SFX: Cheers! A votre santé.*

MUSIC FADE

**The basic process of making a wine doesn’t sound that complicated. Wine is essentially fermented, aged grape juice.**

**But there are lots of choices and extra steps a winemaker can add at each step along the way.**

**For instance, to ferment the juice, do you let the indigenous yeast do its thing, or do you add commercial grade yeast?**

**Do you age the wine in steel, or in oak or concrete?**

**Those choices are about taste and style… but they’re also about quality control. After all, the weather is different every growing season, and so too are the grapes.**

**So, to keep things nice and predictable you might turn to some chemical intervention.**

*Helen Johannesen: There's a big call right now to have ingredients listed on a bottle of wine. You know, it's not just grapes.*

**This is Helen Johannesen. She’s the host of a podcast called *Wineface*. And she co-owns a restaurant, plus a wine shop and club in LA.**

*Helen Johannesen: You know, that's me. I'm a, I'm a lover of wine, lover of food. Expert, some might say. No, I'm just kidding [laughs].*

*MUSIC*

**In the US, there’s** [**a list of almost 70**](https://www.federalregister.gov/documents/2022/08/24/2022-18060/wine-treating-materials-and-related-regulations) **ingredients , in addition to grape juice, which are acceptable to use in making a bottle of wine. That list includes various enzymes and acids, proteins and gasses, defoaming agents, tannins,** [**and even wood chips**](https://www.ecfr.gov/current/title-27/section-24.185) **to get those nice notes of aged oak, but without the barrel.**

*Helen Johannesen: There’s so many different ways… to produce a product that tastes the same year after year…*

**But of all those additives, there’s only one you might see listed on the bottle.**

*Helen Johannesen: And I think the one big bully man in the room, or woman, is sulfur.*

**If you ever looked at your wine, thought - “what the hell is an added sulfite?” and then shrugged and poured yourself a glass, well –**

**Sulfites are preservatives. Each molecule releases a little bit of dioxide gas - that’s two oxygens, if you’re counting. It’s used in a lot of food products, to keep them shelf stable.**

**But sulfur is also a natural byproduct of fermentation. Thus, the “added” sulfites: Some winemakers choose to add more in order to keep their wine from spoiling. But…**

*Helen Johannesen: Sulfur is like the least of your worries. Like, too much sulfur is not great. A little bit of sulfur is fine…There's other things that are a little more sneaky, like Velcorin.*

[**Velcorin**](https://youtu.be/SKzXq6H-q8Q?t=211)**, that’s a trademarked brand name of a substance called dimethyl dicarbonate.**

MUSIC

**Velcorin is another tool to stop microbial activity inside a beverage, to sterilize it, so that the wine doesn’t spoil later.**

**The company’s** [**product fact sheet**](http://velcorin.com.br/fileadmin/user_upload/Velcorin_Wein_A4_US_Screen.pdf) **asserts that it quickly breaks down to “negligible amounts of methanol and carbon dioxide.”**

**By the time you drink the wine, it’s ostensibly safe, but** [**when you apply it**](https://www.victus.com.au/wp-content/uploads/2017/11/SDS-Velcorin-2017.pdf)**, it requires a hazmat suit.**

**Meanwhile, back to the list, you might say that some wine might not even be considered vegetarian.**

*Helen Johannesen: There’s innards of animals or shrimp shells that are used to help in the clarifying process to make a wine look clean, look the right color, have transparency if it's supposed to.*

**The list of additives also includes egg whites, gelatin, an animal protein called casein, and fish bladders – which I don’t think is what people mean when they recommend pairing a white wine with fish.**

MUX SWELL AND FADE

**Another biggie is also a trademarked ingredient, with the incredible name MegaPurple.**

*Helen Johannesen: MegaPurple is a highly concentrated, basically sugar syrup that's made from grape must.*

**Must, by the way, is just another word for freshly crushed grape juice.**

*It's used to balance out an imbalance that's in a wine.*

**It all goes back to the farming. In a really good growing season, and when you pick a grape at its optimal ripeness - the fruit is going to have lots of sugar, color, and depth of flavor.**

*Helen Johannesen:So, you're trying to pick it when it's in its most jammy state and you're like, ‘This is going to ferment perfectly.’*

**But some of these big vineyards are practically grape factories. They’re not always waiting for that perfect jammy state.**

*Helen Johannesen:But when you're making wine at a certain scale or you're just not that experienced… you might not care how ripe the grape is or not ripe the grape is yet, and that will lead to an imbalance in the pH. It will lead to a lack of sugar.*

**In other words, Mega Purple helps cover up unwanted flavors from iffy grapes, or it gives your bottles the same consistent color year after year.**

**It’s basically a high-sugar, very purple grape juice concentrate.**

*Helen Johannesen: These are the things that turn your teeth super purple, like after two sips, right? If you drink a really intense, 15-16%, full-bodied red wine, your tongue might turn a little red, like your teeth, but that's after three glasses, right? What we're talking about is like two sips, three sips. And this isn't stuff that you're necessarily going to encounter at your favorite restaurant you go to. This is something on a much different scale. You know? This is really kind of bottom of the barrel. But, then, maybe I’m wrong, because it’s unregulated - we don’t know.*

MUX SHIFT

**If you’re trying to figure out how you know what ingredients the winemaker used in making a bottle –**

**– the short answer is: you can’t. Wine, beer, and liquor aren’t regulated by the Food and Drug Administration, which requires labels + nutritional information for other stuff you eat and drink. Instead, they’re regulated by the Alcohol and Tobacco Tax and Trade Bureau, which doesn’t have the same standards.**

**Bottom line: if a given bottle always tastes the same, year after year – or, if it’s available in every grocery store and gas station market across the country – that’s probably a sign that there’s some chemistry happening behind the scenes.**

*Helen Johannesen:It’s a formula. You know? Like no one really knows what’s in a chicken nugget. But they always taste the same!*

MUX FADE

*Julia Furukawa: I think it takes a little bit the charm away from it all. You think all your feeding yourself is grape juice that’s had a little more experience in life than the Welch’s.*

**Back at the New England grocery store institution that is Market Basket with my friend Julia… we started talking about our discomfort with all this.**

*Justine Paradis: Yeah. Yeah. I think that, um, you know, when you pour yourself a glass of wine, there's, you know, how people sort of swirl it and go, Oh, these, I taste notes of stone and of, you know, wind… It's like, oh, I taste France or I taste Portugal, in this case, in this glass. But if there are all these other ingredients between us and the place, is that really what's going on?*

 *Julia Furukawa:**Yeah. I don't know. It's like, I mean, whether you want to include this or not, like as somebody who is like, at one point in their life, happily ingested a Four Loko, it's like, I don't know if I can fully complain about, like, the quality of an alcoholic beverage I'm about to consume. But like, I don't know, it makes me think twice about like, the experience that I feel as if I'm going to have, sitting down on my deck or something with a glass of crisp Yellowtail. I don’t know, it doesn't feel quite as special. But then again, if that's what you like and that's what's available, like, there's no problem with it.*

*Justine Paradis: Truly! No, no, no judgment about the Yellowtail or the Four Loko or whatever have you. It's just I think that what it's trying to tell you that it is, is, is perhaps not what it is.*

*Julia Furukawa: Mmhm.*

*Justine Paradis: And that's what, like, Four Loko is not trying to trick you in any way. It is what it is.*

*Julia: Oh, yeah, you know, by the branding. Yeah. You know what you're getting into. Fruit punch? [mimics gagging]*

**Outside/In will be right back.**

*Break*

**Justine Paradis: In France, there’s a system for labeling regionally produced goods like wine, cheese, and meat.**

**It’s called the “appellations d‘origine contrôlée,” or AOC.**

**This is the system that makes sure a Burgundy comes from Burgundy, or champagne comes from the Champagne region of France.**

**And the story of how the AOC came to be – has something to do with an insect – a small but mighty bug named Phylloxera.**

MUX

**Phylloxera is an aphid, native to North America, which feeds on the roots of grapevines. In the mid-1800s, this little bug was inadvertently carried across the Atlantic, where it began to feast on the esteemed grapevines of Europe.**

**These old European vines, known as Vinifera – they had no natural defenses against this bug.** [**By 1900, two thirds of the vineyards with the old European variety had been decimated.**](https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/ec1463.pdf)

**The future of European wine - and therefore, the future of all civilization as we know it - it was in danger.**

**Ironically, the answer came from a continent once maligned for its inferior vintages. North America.**

*Lee Campbell: And the only way that they were able to save their own vines were to graft them to American rootstock, which could [01:18:30] coexist with the with the Phylloxera...*

**That’s Lee Campbell, a longtime sommelier and wine consultant. She explains that today, nearly every grapevine in Europe – is** [**grafted to American rootstock.**](https://www.atlasobscura.com/articles/illegal-wine-from-france)

*Lee Campbell:**[01:17:50] That’s why we still have Vinifera grapes to drink. That’s why we still have French Burgundian Chardonnay to drink today.*

**But as vineyards were recovering, from Phylloxera and then later from World War I, European wines became scarce.**

**And with scarcity, came scams. People** [**producing low-quality wine, and slapping fake labels on them**](https://www.wineenthusiast.com/culture/wine/difference-aoc-aop-france-history/)**, claiming that they had come from this famous valley, or that legendary vineyard.**

**And that problem is** [**part of the reason**](https://daily.sevenfifty.com/measuring-phylloxeras-impact-on-the-world-of-wine/) **the AOC system exists.**

**These rules are specific and strict: in each region and subregion,** [**there are standards**](https://www.chateauneuf.dk/en/production/area.htm) **for what kind of grapes you’re allowed to use, the percent alcohol content that must be achieved, and what additives and practices are allowed at every step in the process.**

**That protects the winemakers from would-be frauds - but it also has a way of making it hard to experiment.**

**While they might have appreciated some of the traditions and practices of the AOC, they also wanted to try new things. And so some of them moved outside the AOC system.**

**And this was the beginning of a movement towards “natural wine.”**

*Helen Johannesen: I think the one sentence that always helps me define natural wine to my team and my customers is a natural wine is a wine that has nothing added and nothing taken away.*

**That’s Helen Johannesen again, host of the podcast Wineface.**

**Maybe you’ve encountered natural wine yourself – perhaps you’ve picked up a bottle of orange wine, or sipped a sparkly pet-nat in a candlelit bar. Or maybe you’re a little skeptical – because, in food, the word “natural” is basically meaningless.**

**The only thing you know for sure is someone is trying to sell you something.**

**The natural wine movement doesn’t have an official label, or a certifying organization that checks the barrels for sulfite concentrations.**

**“Natural wine” doesn’t even mean “organic, or at least, “organic” doesn’t cover it. Because, sometimes, organic wines might still contain some of the additives we talked about earlier.**

*Helen Johannesen: You could have a mass produced wine that, you’re farming it organically, but are you making it in a true fashion? Probably not.*

**Natural wine takes it further.**

**In a way, it’s about focusing on old techniques, a way of making wine from a time before things like Mega-Purple and Velcorin ever existed.**

**It’s sometimes called “low-intervention.” So typically, no commercial yeast, animal innards, or tannins**

**And year-to-year, there’s no guarantee the same bottle by the same brand will taste all that similar.**

*Lee Campbell: Natural wine is just based in the traditions that have been with us for years and years, of people that have been making wines and understanding how their land reacts. And I think if you are following sort of the tenets of people who have done this for hundreds of years, you’re going to be okay. If you’re trying to make something that, I don't know, is more of a commercial product, I think it’s going to be very hard for you to make a natural wine.*

**Many makers of “natural wine” take an approach called biodynamic farming. It incorporates composting, crop rotation, and also spiritually-informed practices, like timing the harvest with the phases of the moon, for example.**

*Helen Johannesen:It's all about: how do I not sort of disrupt the vine but create an amazing environment for the vine? And how do I not use synthetic herbicides and pesticides? … And so there's a lot of winemakers that employ cover crop down in between the vines, various plants that are insect deterrents.*

**Another simple thing that can differentiate natural wine is that the grapes often aren’t picked by a machine - they’re picked by hand.**

**Hand harvesting is a lot of work, but it’s also more precise than machine-harvesting. That means winemakers don’t end up with grapes which are under- or overripe, introducing flavors that are “off”. messing up your harvest. And fewer bad grapes means less of a need to “balance it out” with a splash of chemical intervention.**

*Helen Johannesen: It’s all kind of an individual artistic practice. When you really get to know them and meet them, it is like being in an artist studio because they're so immersed in their philosophy and it's it's really just kind of amazing.*

*SFX: Cork pops*

*Justine Paradis: Perfect, now behave like you’re at a party!*

*[laughter]*

*SFX: wine pouring + toasting*

*Lucy Leske: Cheers! A votre santé!*

**But here’s the question you may be asking - does natural wine taste any different? Is it good? Is it fresh, or funky, or what?**

*Justine Paradis: Tasting notes?*

*Steve Paradis: Um… very smooth.*

**At a dinner with my family earlier this summer, I popped a bottle of red – made with a variety of grape called Gamay.**

*Steve Paradis: It is in the style of Beaujolais, I think, in general. Beaujolais, to me, are lighter wines.*

**What can I say? If you can’t tell, my family likes wine.**

*Justine Paradis: So, you feel like it’s pretty classic…*

*Lucy Leske: I wouldn’t know the difference, but now that I know it’s a natural wine… I’m thinking I need to drink more natural wine.*

*Justine Paradis: laughs*

*Lucy Leske: This is very drinkable… I actually think it’s more mature, more complex….*

*Jenny Paradis: One of the things I think –*

*Elsie Turner Matthews: Well, I’m impressed, I’m impressed with that analysis.*

*Justine Paradis: What do you think, Elsie?*

*Lucy Leske: Would you drink more of it?*

*Elsie Turner Matthews: Well, if I liked it, I would!*

*Lucy Leske: Do you like it?*

*Elsie Turner Matthews: I haven’t tried it yet!*

*Justine Paradis: Have a sip!*

*Elsie Turner Matthews: I’ve been talking! [pause] Well, I think that’s very nice.*

**I do want to be clear: it’s not just self-described “natural winemakers” who use techniques like biodynamic farming or hand-harvesting.**

**Actually, some of the oldest and most famous vineyards in the world use techniques espoused by natural winemakers, but don’t market themselves that way.**

**And natural wine is a broad, and malleable category. Some bottles are really expensive - others, you can get for under $20. I’ve tried some that were too wild for me, and others that were clean and gorgeous, and very similar to some of the most traditional wines that you can find.**

**Natural wine can be multilayered and intense, or light and juicy, like the one we were trying.**

*Lucy Leske: I don’t think you should expect it to be something that it’s not.*

*Steve Paradis: right!*

*Lucy Leske: It’s not a cabernet, or a merlot, it is not some deep experience that you’re going to have over time. The taste is fresh and it works with the food and then you’re done.*

MUX SHIFT

**Like craft beer and liquor, natural wine has gotten a lot more popular over the past couple of decades. And now that it’s arrived, people in the industry are debating what it really means – what set of rules should dictate what counts as natural wine, even if there’s no official organization trying to enforce those rules.**

**One debate is around one of the only ingredients listed on the bottle: sulfur, which, again, acts as a preservative and a stabilizer.**

*Helen Johannesen: There's arguments about if a winemaker chooses to use a certain amount of sulfur at bottling, if that still counts it as a natural wine.*

**Here’s Helen Johannesen again.**

*Helen Johannesen: That's why it's sort of undefined. It's like, what is someone going to do? They're going to throw away their entire year's work just because they had to use ten parts per million of sulfur at bottling, which is nothing.*

**To Lee Campbell, this debate can feel a little judgmental or dogmatic sometimes.**

*Lee Campbell: Purists would say absolutely no sulfur and definitely no filtration. And everything is just sort of as simple and kind of ancient as, as you can make the wine. I think that I'm definitely a bit more moderate in my approach to that… You know, sulfur isn’t always your enemy.*

**In her view, yes, some people are more sensitive to sulfur than others, so it’s good we’re being mindful – but we *can’t* make wine in the same way as we imagine people did centuries ago. Not if you want to drink a French wine in California.**

*Lee Campbell: … you have to remember that back in the day, people drank wine from a local winemaker or a local cooperative. They put it in a big jug and they took it home and they drank it within the week. But now we have things in bottles. We're shipping them across oceans. They're traveling on trucks.*

**The irony here - there are lots of ironies in wine, apparently – is that very thing so many people supposedly LOVE about wine, is also the very thing that threatens its future.**

**Change. Particularly climate change.**

**Just last spring, a late frost hit much of France, after the vines had already begun to bud. Growers tried to save their crop, laying heated cables between the vines, and even lighting rows of torches.**

**But in some regions, the** [**damage was extensive**](https://hospices-beaune.com/en/vintage-2021-a-severe-frost-in-burgundy-special-message-from-alberic-bichot/)**.**

**And then there’s the question of wildfires, especially in winemaking regions like California and Australia.**

*Lee Campbell: There's something called smoke taint that gets into the wines if the grapes have been hugely affected by smoke. The grapes might still be alive. But they've been so adulterated by the flavor and the taste of smoke that it changes completely the flavor of the, of the wine. And I think what we're trying to decide is, is it acceptable or not acceptable? Is it part of the terroir or is it a flaw?*

**Wine lovers love to talk about terroir, and the connection between wine and the place where it’s made.**

**But, as temperatures rise, the next time my family sits down to share a good bottle of red wine around the dinner table, it might not taste the way it has in the past.**

*Justine Paradis: Would anyone like some more wine?*

 **Lee thinks the future of wine – is going to be about embracing that kind of change with curiosity.**

*Lee Campbell: You know, that's what's so exciting about being in wine, is that it is really a moving target always. You always need to keep learning about it to stay sort of fresh.*

*Samuel Golding: we should drink it every day of the week.*

*Lucy Leske: doesn’t taste like it’s stuck in a basement for years.*

*Justine Paradis: I think it tastes alive.*

**If you’re looking to explore the world of natural wine – we’ll share a few tips in the show notes. But here’s two, for now: find a brick and mortar wine shop local to you, especially if they already support natural winemakers and small producers. A lot of wine shops offer free or low cost tastings, so you can figure out what you like, without spending a lot of money..**

**Also one tip for reading a wine bottle – turn the bottle around and check out the importer on the back. There are certain importers who specifically seek out natural winemakers – essentially, they’re doing some of the work for you. We’ll put a couple importers you can look out for in the show notes.**

**And one last thing – try not to get intimidated or be totally pure about this. As Helen Johanneson likes to say “wine is for enjoying, and wine is for everyone.”**

 **It's supposed to be fun.**

**Although I guess I have to say, only if you’re over 21. Follow the directions on the bottle and drink responsibly.**

**This episode of Outside/In was reported, produced, and mixed by me, Justine Paradis. It was edited by Taylor Quimby. Our host is Nate Hegyi and our executive producer is Rebecca Lavoie. Our team also includes Felix Poon and Jeongyoon Han.**

**Special thanks to my family for letting me record at our dinner party. That’s Lucy Leske, Steve and Jenny Paradis, Samuel Golding, and Elsie Turner Matthews.**

**Music by Blue Dot Sessions and Matt Large.**

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