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IS THE WORLD READY FOR GENETICALLY MODIFIED WINE? VEGGIES?

ANDREW PORTERFIELD, GENETIC LITERACY PROJECT

Are we ready for genetically modified wine?

Andrew Porterfield | January 30, 2017 | Genetic Literacy Project

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PRINTER FRIENDLY

Grapes that make wines are some of the most genetically modified organisms in the world. It's just that this modification hasn't happened using modern gene-editing.



But now, a number of studies are underway to introduce new traits in wine grapes through GMO techniques. While the techniques could help winegrowers face significant challenges to grape harvesting, many issues could stand in the way. Surprisingly, they nothing to do with anti-GMO activism.

While there are tens of thousands of grape varieties that could be candidates for a perfectly good (maybe even excellent) wine, most aren't used. That's because the industry focuses on just a few centuries-old varieties, like Chardonnay, Pinot or Cabernet Franc. And in some growing areas like France, Italy and California, only those varieties will do. According to a [USDA study](#), wine-grapes have been harvested for at least 8,000 years, and our well-known successful varieties have been cultivated (and kept genetically the same) for nearly that long.

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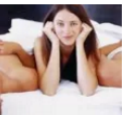


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SCIENTIFICALLY, RIPE FOR GM

- TENS OF THOUSANDS OF WINE VARIETIES AVAILABLE
- ONLY A HANDFUL USED OVER 8,000 YEARS—PINOT, CHARDONNAY, CABERNET, ETC.
- CAN'T CONVENTIONALLY BREED NEW TRAITS—INTRODUCES NEW VARIETIES NOBODY WANTS
- INDUSTRY HYPER-FOCUS ON QUALITY AND TRADITION
- INCREASED RISK OF DISEASE: DOWNY MILDEW, LEAFROLL VIRUS, AND PIERCE'S DISEASE

ATTEMPTS TO GENETICALLY MODIFY WINE

- RONG DI, RUTGERS: USING CRISPR-CAS9 TO EDIT RESISTANCE TO DOWNY MILDEW
- SYNTHETIC WINE YEAST PATHWAY--RASPBERRY KETONE AROMA
- HANGOVER-FREE WINE, THANKS FOR RNA-CAS9 EDITING
- [HTTPS://PORTAL.NIFA.USDA.GOV/WEB/CRISPROJECTPAGES/1005372-IMPROVEMENT-OF-CROP-DISEASE-RESISTANCE-AND-STRESS-TOLERANCE-BY-CRISPRCAS-GENE-EDITING.HTML](https://portal.nifa.usda.gov/web/crisprojectpages/1005372-improvement-of-crop-disease-resistance-and-stress-tolerance-by-crisprcas-gene-editing.html)
- [HTTP://DX.DOI.ORG/10.1080/07388551.2016.1214945](http://dx.doi.org/10.1080/07388551.2016.1214945)
- [HTTPS://WWW.EUREKALERT.ORG/PUB_RELEASES/2015-03/UOIC-YC031615.PHP](https://www.eurekalert.org/pub_releases/2015-03/uoic-yc031615.php)

Winemakers drop organi x French winemaker drops x

www.decanter.com/wine-news/french-winemaker-drops-organic-status-for-better-treatments-289349/


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French winemaker drops organic status for 'better treatments'

Jane Anson January 26, 2016 403 shares

A winemaker in the Vaucluse has become the latest producer to withdraw his wine from organic certification, citing his concerns over the environmental sustainability of organic winemaking.



Slide 7 of 8


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GROWERS SEEKING SOLUTIONS

- ORGANIC GROWERS MOVING AWAY FROM DESIGNATION—COPPER SULFATE BUILDUP
 - ORG. GROWERS COMPLAINED ABOUT CONVENTIONAL PESTICIDES IN FIELDS—DRIFT OR CHEATING?
 - MANY FARMERS WOULD LIKE A MIX OF ORGANIC SOIL TREATMENT, GMO USE
- 

Are we ready for genetic... x Ready to Embrace Geneti... x

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Abstract

This study examines whether knowledge exposure and supreme wine attributes such as appearance, aroma, taste, and hangover avoidance influence consumers' quality evaluation and purchase intentions of genetically modified (GM) wines. We conducted two experimental studies in two different settings involving a total of 321 subjects. Results indicate that educating consumers with knowledge on GM wines efficiently reduces the fear caused by GM identity. Importantly, the desirable organoleptic and functional performances of GM wines not only reduce consumers' concerns with GM products but also enable GM wines to surpass conventional options that are less salient in these performances. Specifically, consumers would choose a GM wine over traditional options if the GM wine has a superior appearance and the ability to eliminate a hangover. Furthermore, consumers express equal acceptance of GM wines and traditional counterparts when there are no differences in aroma and taste. This research delivers significant implications for wine marketing through examining a timely and controversial subject matter.

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FEEDBACK

Slide 5 of 5

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HOW TO GET ACROSS

- YOU'RE NOT ALONE—OPPONENTS TO GMOS ARE POLITICAL; THEY BUILD ALLIANCES, GATHER EXPERTISE, AND SO SHOULD YOU
- IT'S NOT JUST ABOUT DATA
- OPPOSITION CAN BE CULTURAL, ATTITUDINAL, AS WELL AS ACTIVELY POLITICAL
- FIND OUT WHY TRUST IS LACKING (PERSONAL EXPERIENCE, POST-MODERN THINKING)
- US VERSUS EUROPEAN ATTITUDES TOWARD FOOD, WINE (CLOTAIRE RAPAILLE)

ISSUES TO CONSIDER

- TANGIBLE BENEFITS?
- FAMILIARITY WITH PRODUCT/TECHNOLOGY (OFTEN IN CONTEXT)
- TRUST IN SOURCE
- MORAL INTERFERENCE

BRUCE, D.M. (2002) A SOCIAL CONTRACT FOR BIOTECHNOLOGY: SHARED VISIONS. J. AGRIC. ENVIRON. ETHICS 15, 279-289

PEOPLE LOVE SCIENTISTS

- USE PERSONALITY TO CONNECT TO PEOPLE
- TALK ABOUT HOW YOU APPROACH PROBLEMS—HYPOTHESIS, TESTING, IS THERE EVER “100% PROOF”
- TELL STORIES—HOW AN EXPERIMENT STARTED, QUESTIONS RAISED AND ANSWERED
- RELATE DIRECTLY TO THINGS THEY USE—GENETICS MAKING BREAKTHROUGH DRUGS IS USED IN CROPS
- LOOK AT HOW CORN, STRAWBERRIES HAVE CHANGED BECAUSE OF GENETICS
- **BLUR THE BOUNDARY BETWEEN “NATURAL” AND “ARTIFICIAL”**

PR TACTICS

- HOMEWORK! RESEARCH, INTERVIEWS, POLLS
- WHAT MESSAGES MIGHT STICK?
- FIND BEST WAYS TO REACH
- DON'T STOP (700 IMPRESSIONS RULE)

PEOPLE DON'T KNOW ABOUT GM

- 2016 PEW STUDY
- 71% KNOW LITTLE TO NOTHING ABOUT GENETIC ENGINEERING
- 48% THINK GMS HAVE NO EFFECT ON HEALTH
- 39% THINK GMS HAVE WORSE HEALTH EFFECTS
- MOST VIEWS ARE SOFT, DEPEND ON HOW QUESTION IS PHRASED
- RIPE AUDIENCE OVERALL—AIM FOR THAT 71%
- [HTTP://WWW.PEWINTERNET.ORG/2016/12/01/THE-NEW-FOOD-FIGHTS/](http://www.pewinternet.org/2016/12/01/the-new-food-fights/)



The Cow-Pock — or — the Wonderful Effects of the New Inoculation! — With the Publications of the Anti-Vaccination Society.