Illumina
ACCELERATOR

PLUGANDPLAY

TERRA
by Rabobank + RocketSpace

BIOME MAKERS

WINNOVATION
AWARDS

AgFUNDER
INNOVATION AWARDS

Biome Makers

We are geneticists, microbiologists, software engineers, bioinformaticians, communication and sales experts, and real winemakers.

we are...

20 team members

30 years old average

40% PhD level

the team

... in US and Europe

Biome Makers: Achievements

Illumina ACCELERATOR

World Class Genomic Accelerator

PLUG AND PLAY

World Class Tech Accelerator

TERRA by Rabobank + RocketSpace

Agriculture Accelerator

WINNOVATION AWARDS

Winnovation Awards 2017 (San Francisco, CA)

AgFunder

AgFunder 2016 (San Francisco, CA)

Finalist AgTech Latam 2017 (Chile)

PYME INNOVADORA

Pyme Innovadora 2017 (Spain)

InnoSTARS

Semi-Finalist InnoStars (China)

CB INSIGHTS

nature biotechnology

CLSA

California Life Sciences Association

Our AgTech proposal

Microbial discovery

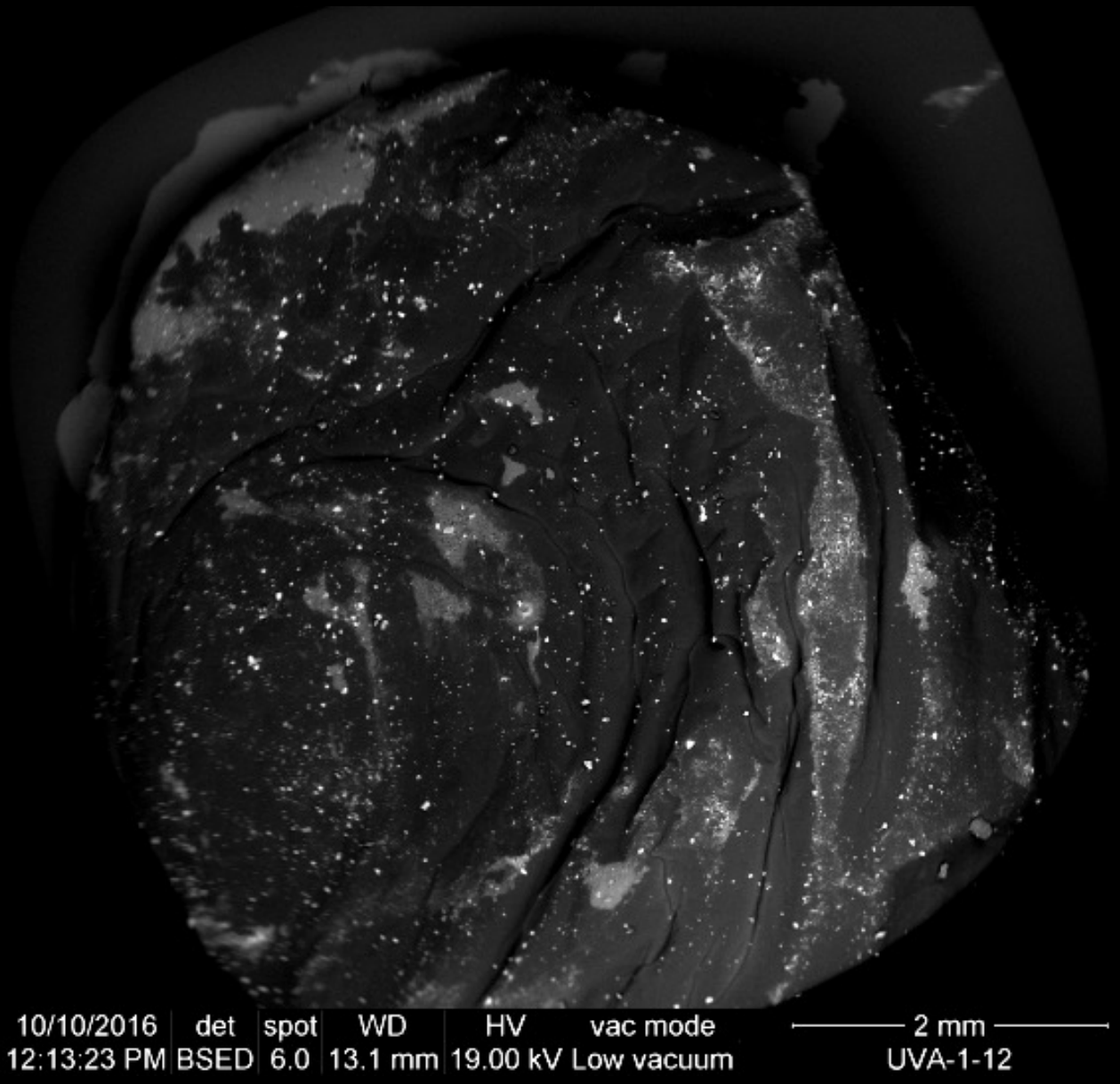
Welcoming future agriculture

Harness the Microbiome

Healthy, productive, living soils improve and sustain productivity and quality

1,000,000,000 Microbes/oz

FoodTech is already in the wave!!



Scanning Electron Microscopy – Grape Surface

WINESEQ

The context

How much does it cost to solve AgProblems in the soil?

$23.5B /year
Nutrition complements

$15.2B /year
Chemical sprays

Even after the treatments

20-40% crop value is lost due to diseases

USDA DataServices for 2016

Technology requirements

Accurate results

Solution based on the microbiology of the soil-

Customized suggestions

Suggestions based on geo-location and metadata-

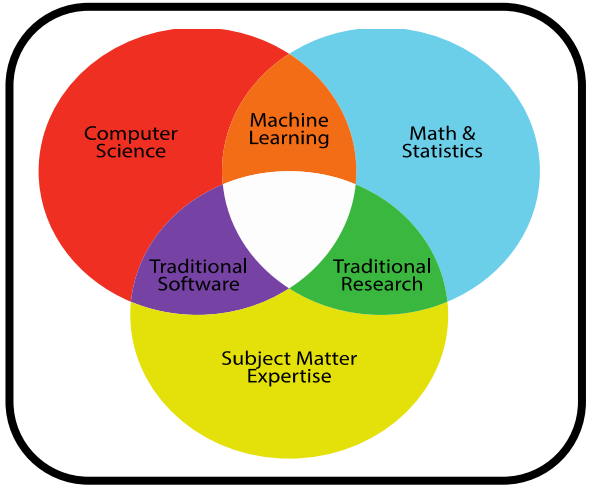
Online portal

Portal tools to easily explore all the information.

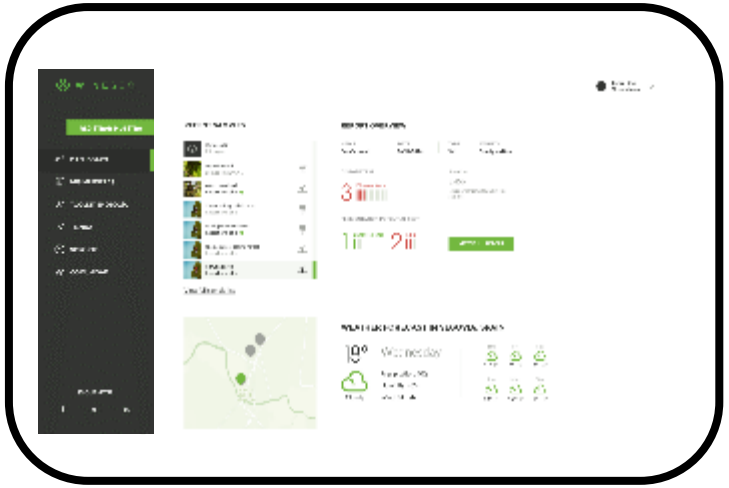
Crop intelligence

Custom algorithms for vineyard problems

WineSeq World



VERITAS



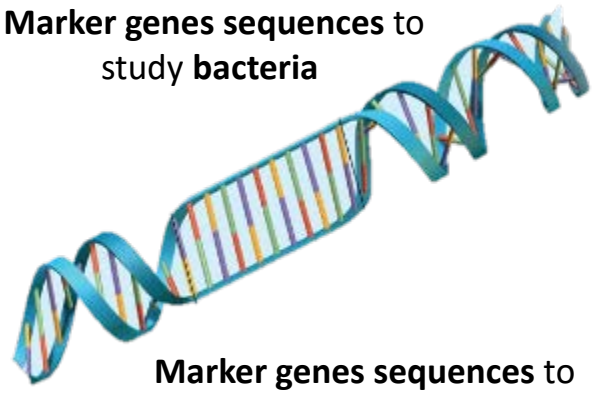
WineSeq Portal

WINESEQ

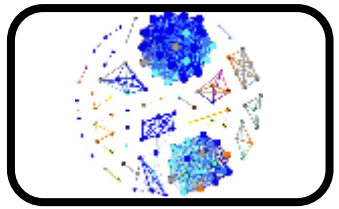
WineSeq is a DNA based technology: microbiome discovery

Genomic Data

Marker genes sequences to study **bacteria**



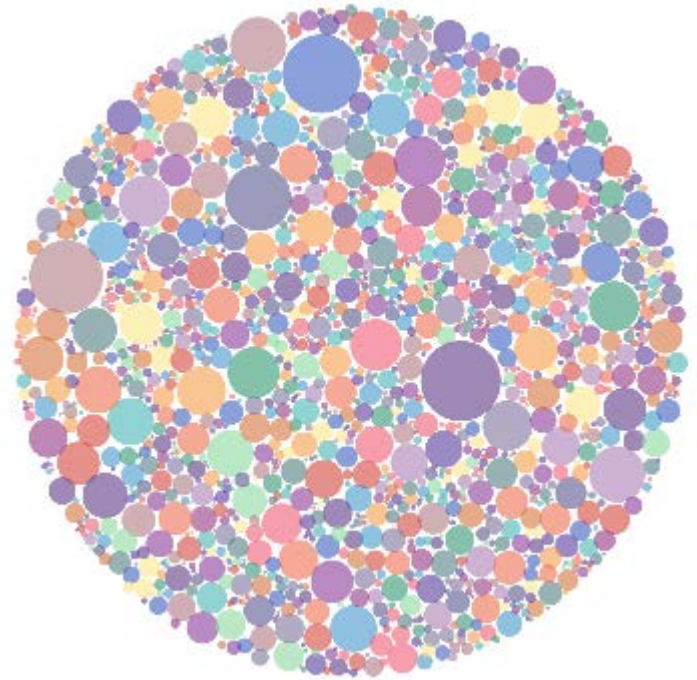
Marker genes sequences to study **fungi**



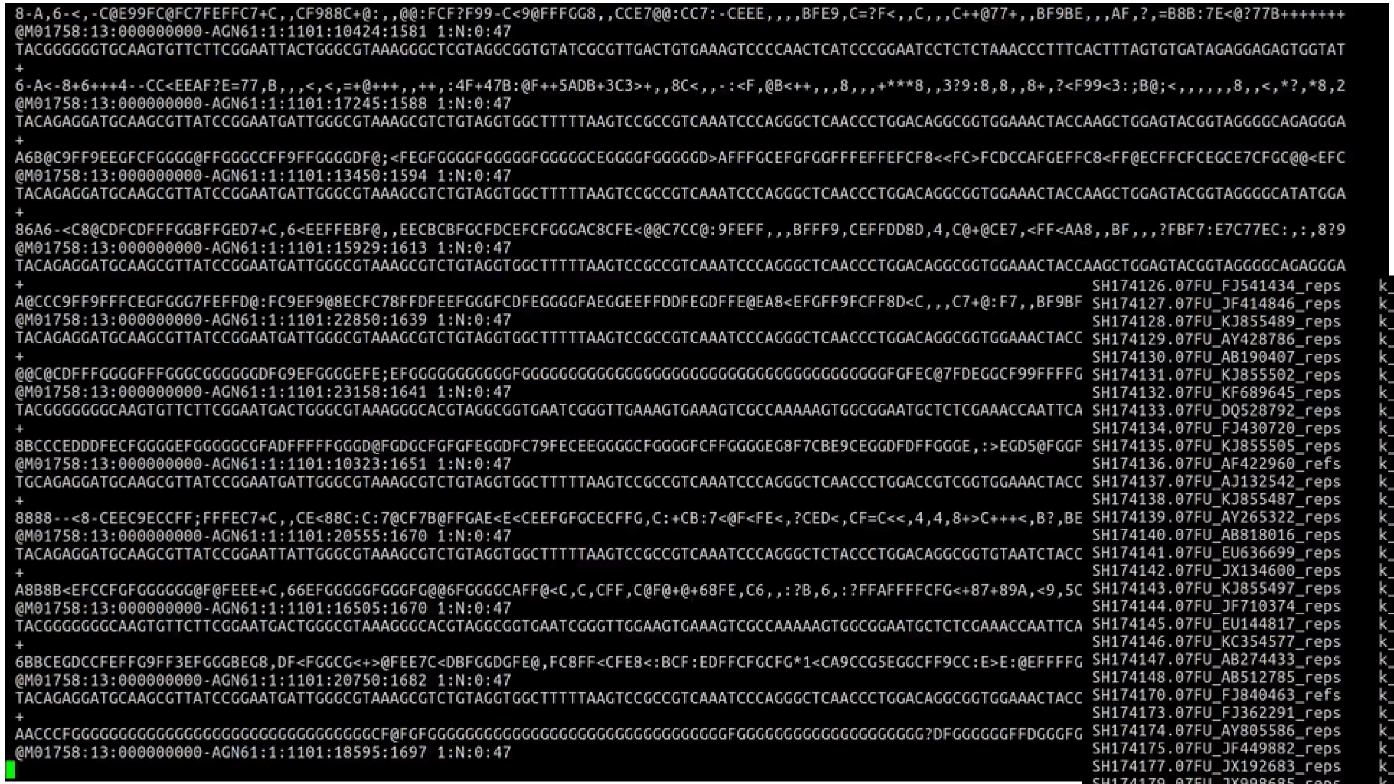
OTU database

OTU calling

Tax database

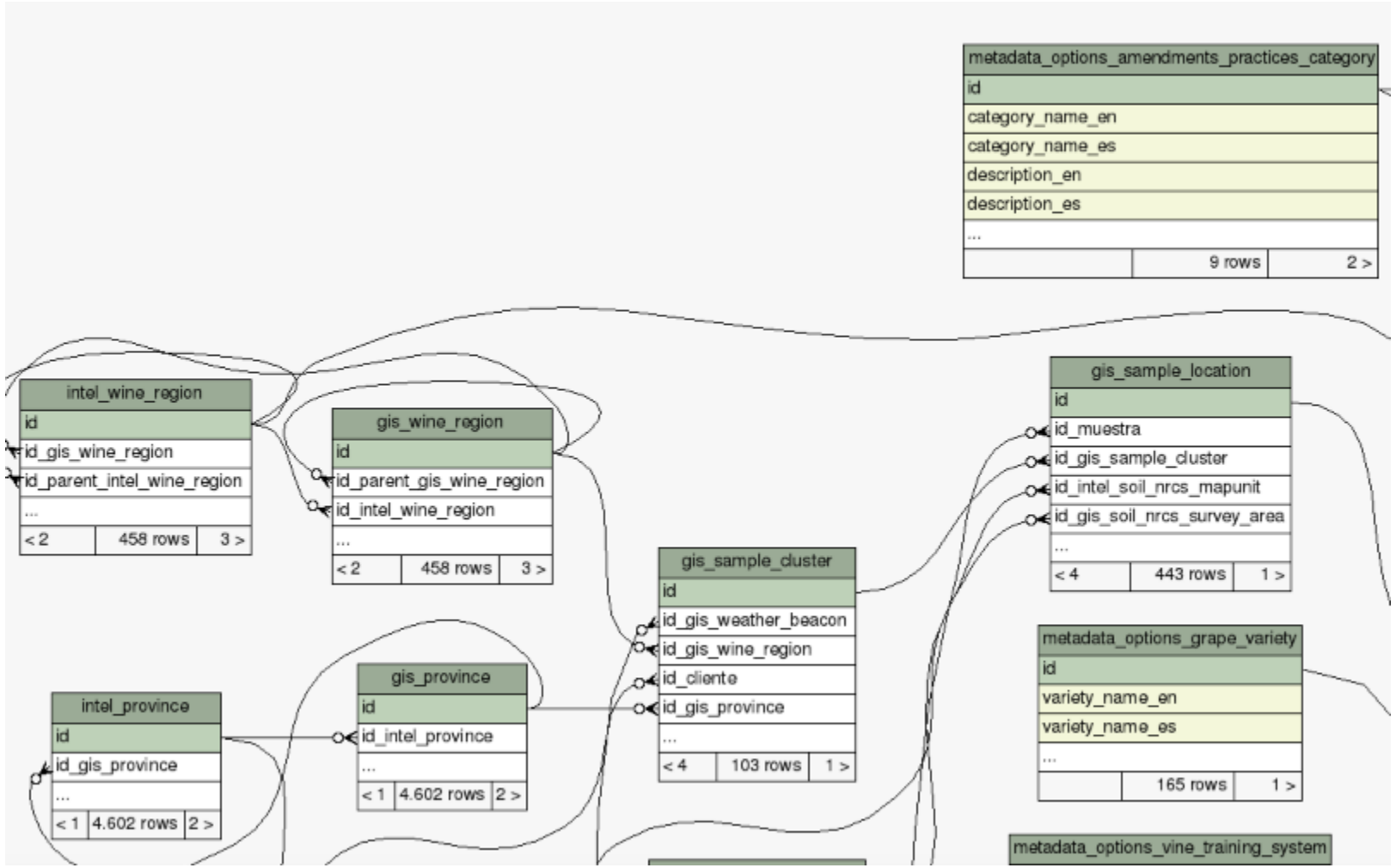


Bioinformatics: using DNA to profile the microbiome

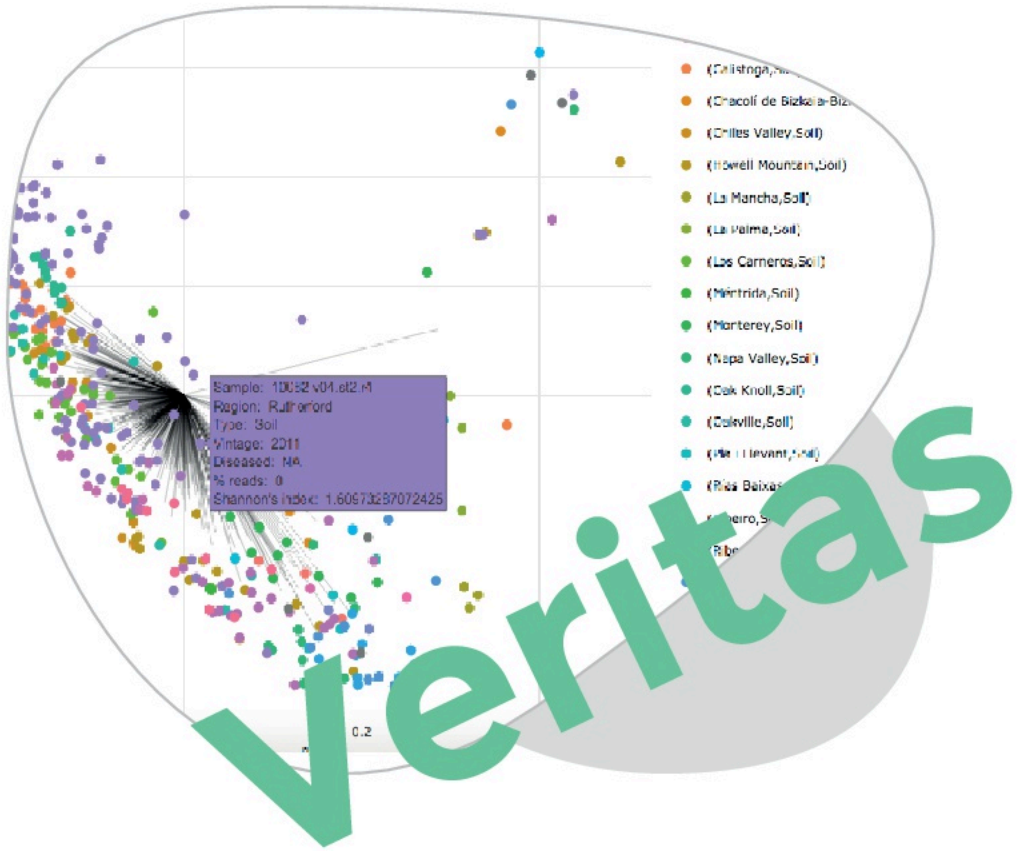


WineSeq Technology – metadata database

119 Boxes



Our internal intelligence platform

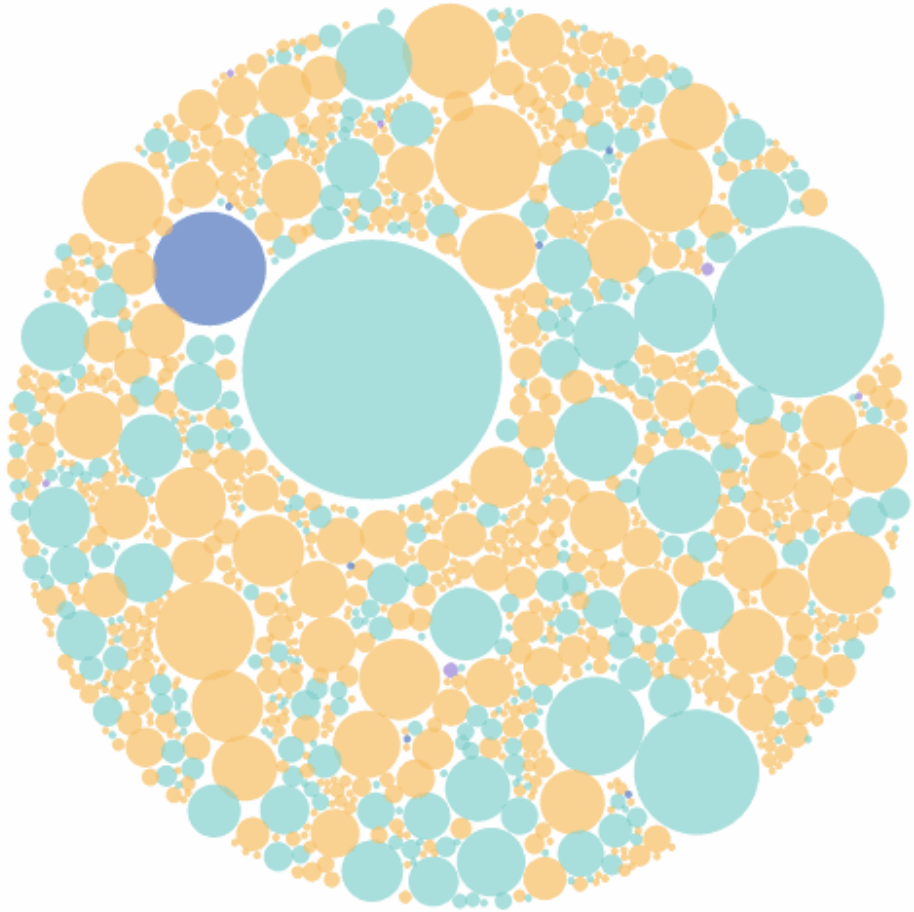


We take advantage of big data tools to:

- Understand global trends in plant diseases distribution and virulence
- Certificate sustainable farming practices
- Drive microbial discovery projects
- Create Biobanks of microbial resources

Understanding the Microbiome

Fungus Bacteria Archaea Yeast Protist



Type here the key word...

	624 ORGS
Cryptococcus podzolicus	26.03%
Cryptococcus aerius	19.21%
Fusarium oxysporum	10.17%
Acinetobacter sp.	9.63%
Arnium sp.	8%
Pseudomonas putida	6.29%
Cryptococcus terricola	5.27%
Bacillus sp.	4.21%
Ktedonobacter sp.	3.86%
Nitrososphaera sp.	3.67%
Penicillium restrictum	3.59%
Singulisphaera sp.	3.45%

MWM INFO X

Pyrenochaeta sp.

Fungus

ABUNDANCE

%

1.5081

INFLUENCE

Plant

CATEGORY

Potential plant pest

HIGHLIGHT

Leaf spot related

Know more in Wikibiome

4 INFLUENCES OF TERROIR

CLIMATE

COLD HOT WINDY Precipitaciónón

SOIL

ROCK + MINERAL DEPO

Estructura del suelo

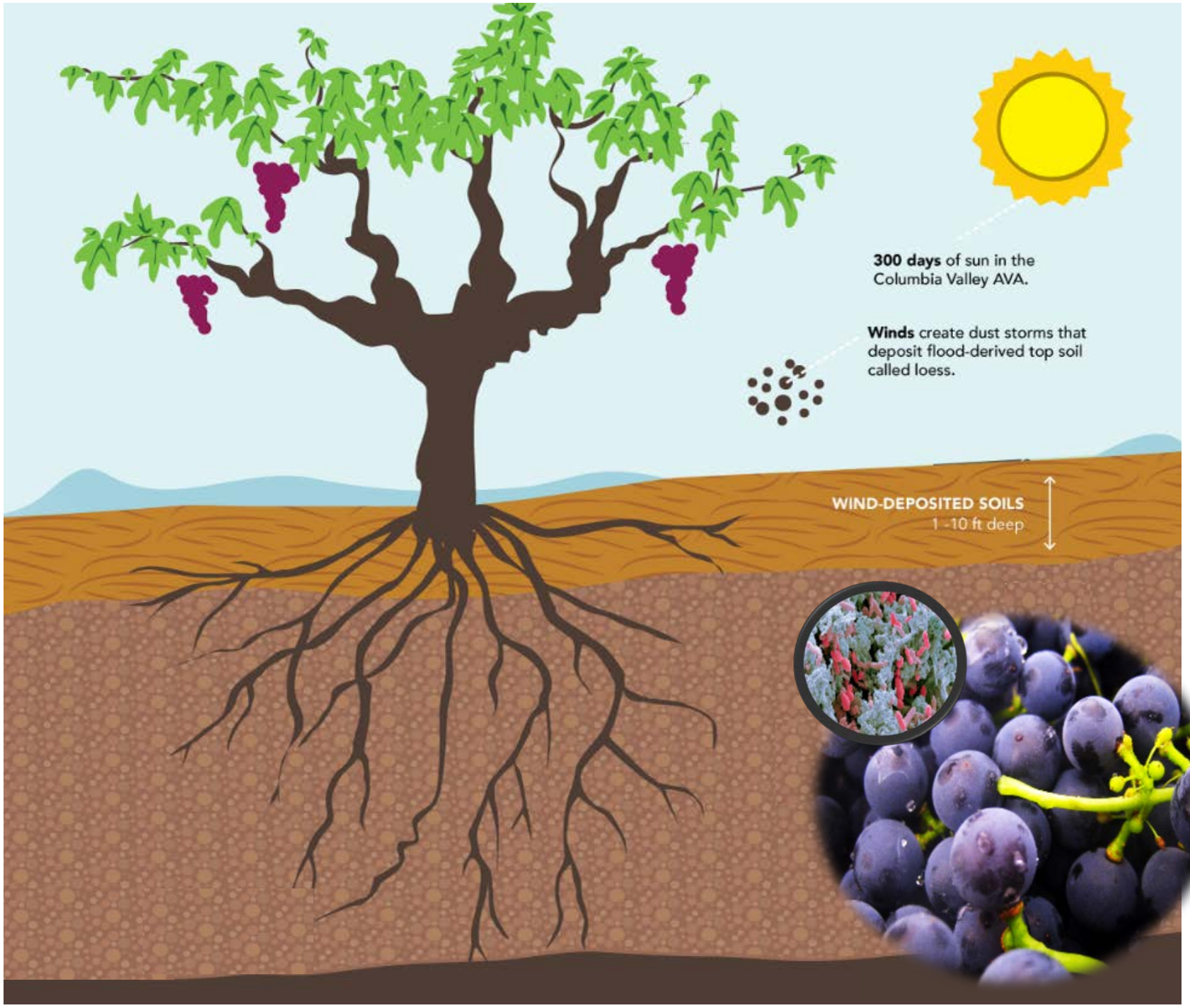
TERRAIN

NORTH OR SOUTH FACING

Altitud

TRADITION

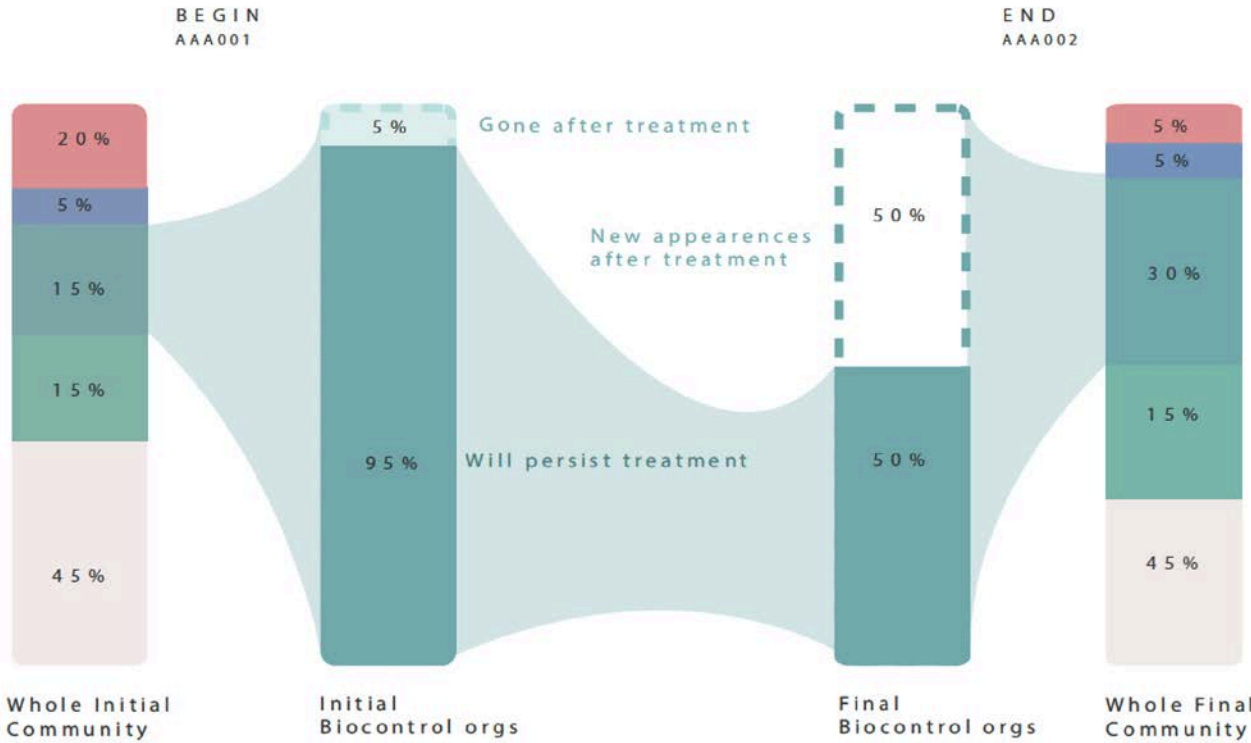
TECHNIQUE + WINEMAKER



SUSTAINABLE MICROBIAL BIODIVERSITY CERTIFICATION

CONCLUSSION

Biofertilizer MetaCrop Biome X respects the native microbial community, avoid most of crop pathogens and improve Biocontrol and Nitrogen Fixation Species.



PATHOGENS

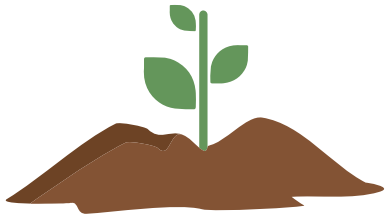
NITROGEN FIXATORS

BIOCONTROL

PLANT GROWTH PROMOTERS

Soil as BioMarker of Agriculte Practices

Soil



Microbiome...

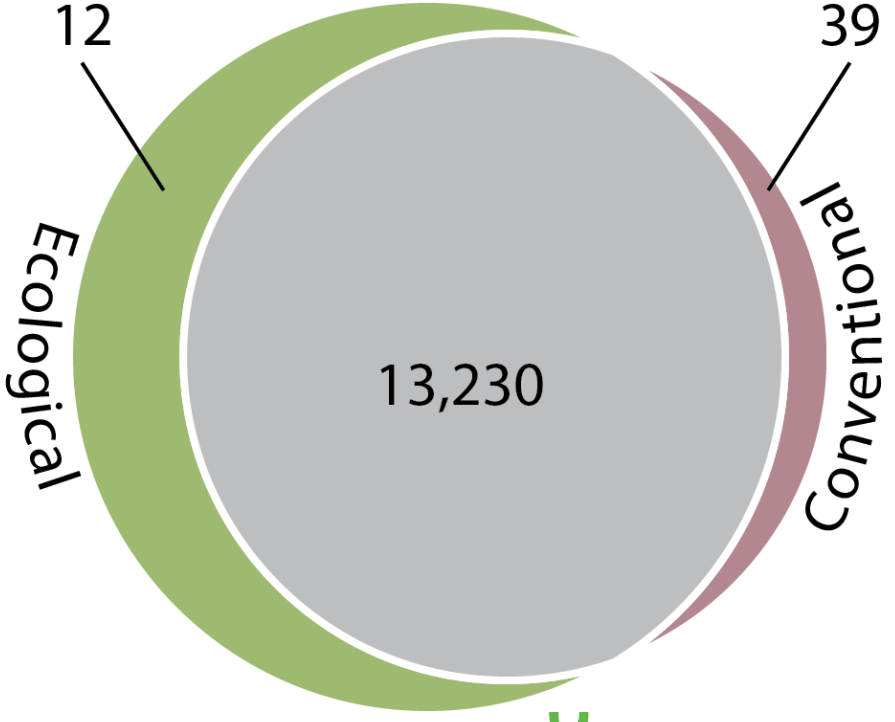
association with...

Farming Practices

conventional

organic

biodynamic

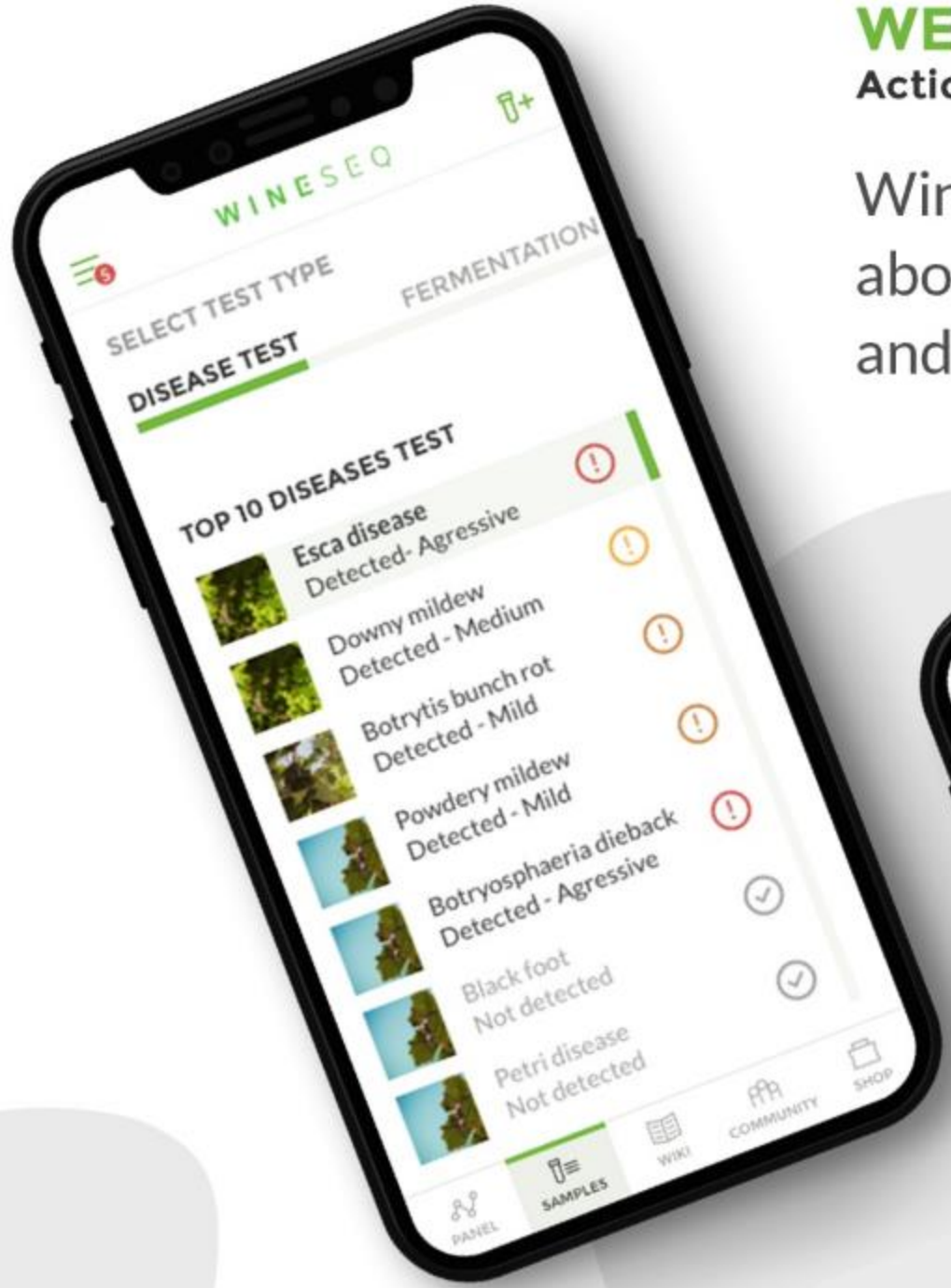


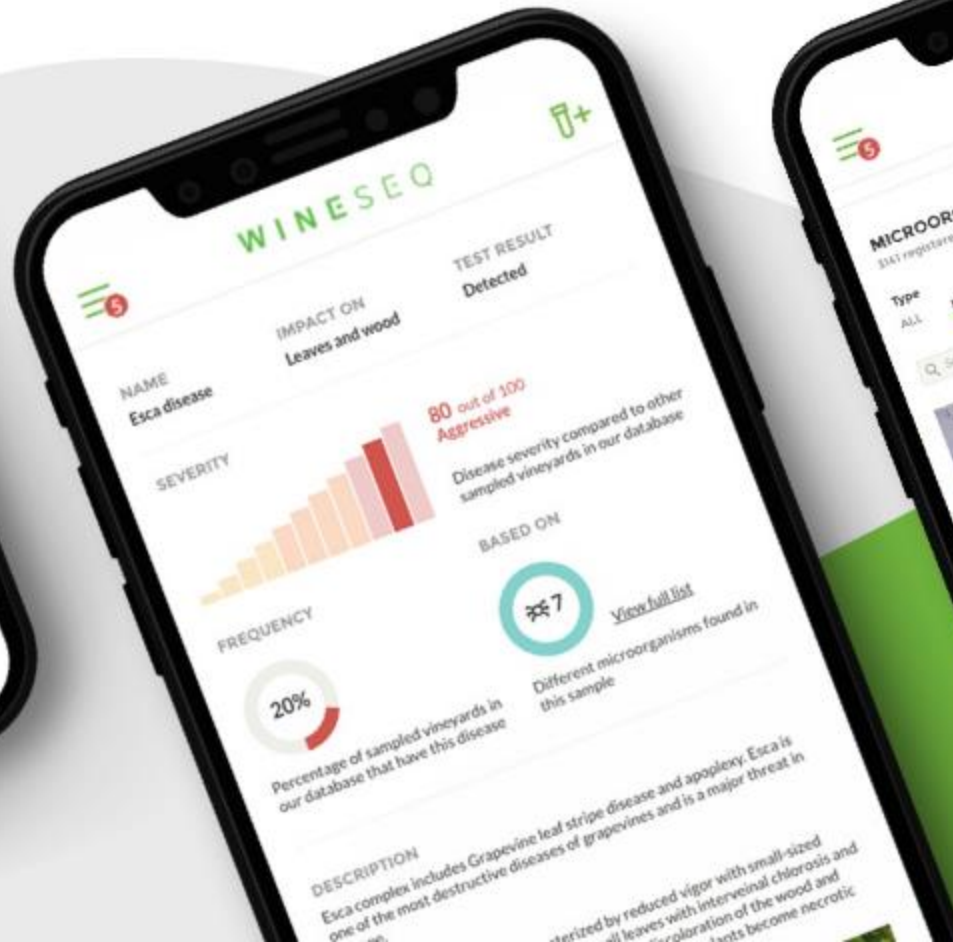
WINESEQ

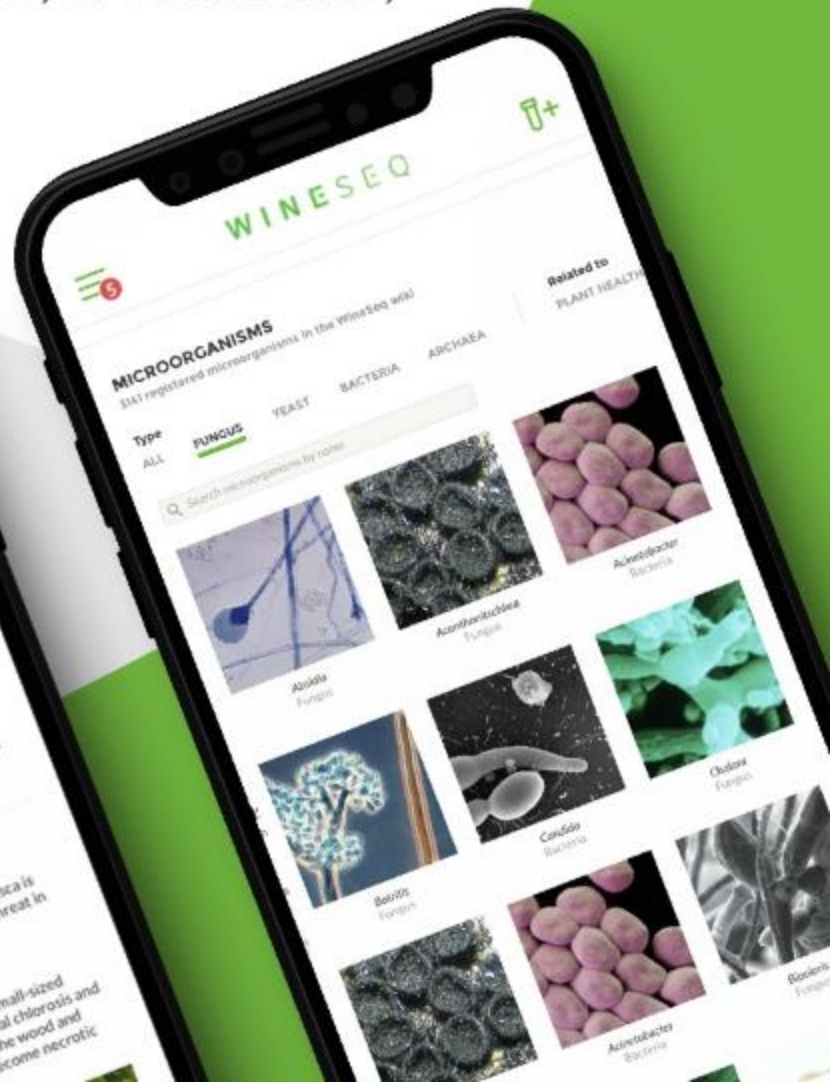
WEB PORTAL

Actionable information for users

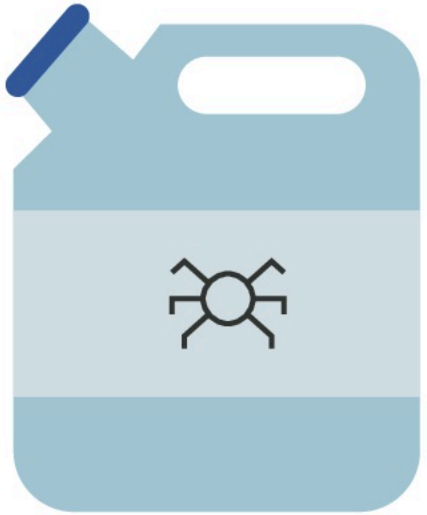
WineSeq Portal provides information about sample results, diseases, treatments, and microorganisms







Applying smart discovery



Bioactive product to restore burn soil health


WINESEQ
PRECISION ENOLOGY

So far we have...

18 countries

600 users

3000 samples

Top wineries working with us

WineSeq is a Methodology: Sample collection

1

DOWNLOAD THE APP

DESCARGA LA APP

2

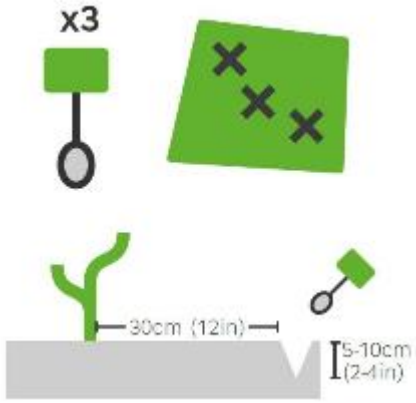
CHOOSE A PLOT

SELECCIONA UNA PARCELA

3

TAKE A PICTURE

HAZ UNA FOTO



4

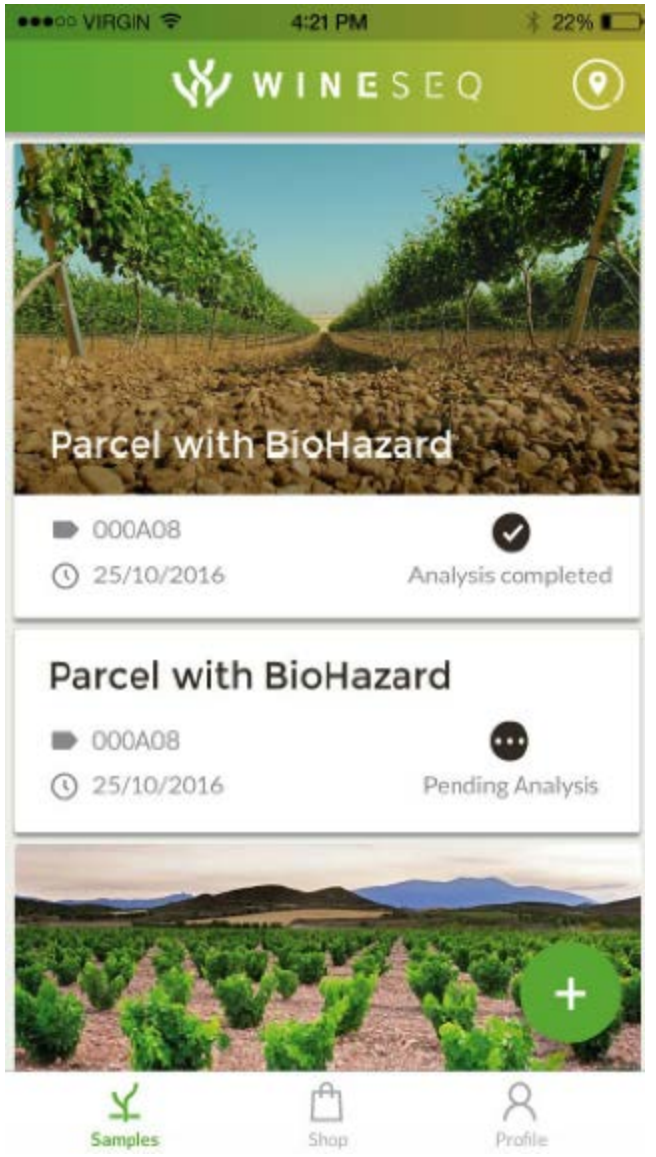
COLLECT THE SAMPLE

RECOGE LA MUESTRA

5

SEND THE TUBE BACK

ENVÍANOS EL TUBO



Crowding knowledge - Open Information

GRAPE VARIETIES

298 grape varieties registered in Wikibiome

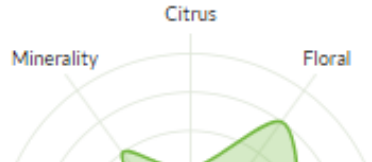
FEATURED GRAPE VARIETY

Verdejo
White

Very sensitive to powdery mildew. Moderately to botrytis.

Medium-alcohol content wines, greenish-yellow in hue, very aromatic, with aromas of bitter almonds. Medium to high acidity wines with body but with a

Learn more



VINE DISEASES

61 vine diseases registered in Wikibiome

FEATURED DISEASE

Pierce's disease Aggressive
Treatable

Pierce's disease is known since 1892 after the description made by Newton Pierce. Pierce's disease is recognized as the most devastating grape disease caused by a bacterium. The disease is severe in countries like US, and is

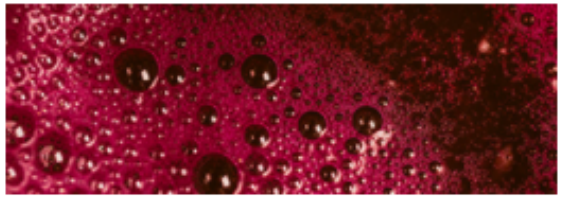
5 TESTED TREATMENTS PREVENTION INFO

Learn more

EDITED RECENTLY

Angular leaf scorch / Rotbrenner

WINE MAKING MICROORGANISMS



2672 microorganisms registered in Wikibiome

FEATURED MICROORGANISM

Armillaria mellea Plant Health
Fungus Wine Making

Also known as "Honey fungus", *Armillaria* is a genus of parasitic fungi that lives on trees and woody shrubs. It includes about 10 species formerly lumped together as *A. mellea*. *Armillarias* are long lived and form some of the largest

NOT FOUND IN YOUR SAMPLES

Learn more

EDITED RECENTLY

Plasmopara viticola
Protist

Success Cases
&
Curiosities

Heavy treated vineyard: Healthy soil or dead soil?

NAME
Black foot disease

TEST RESULT
Detected

SEVERITY
80 Agressive
out of 100

FREQUENCY
27.2%

Disease severity compared to other vineyard samples

Percentage of vineyard samples that have this disease

DISEASE RISK TEST

1 Diseases found

Based on

660

Microorganisms found in the sample

Visualize these abundances in the toolkit

POTENTIAL FERMENTATION TEST

0 Enhancers

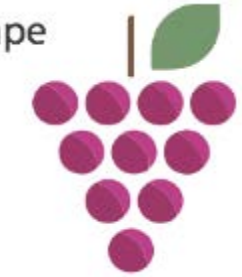
0 Risks

VIEW FULL REPORT

Average in Organic soils: 1.067 sp

Brett detection in Soil, Grape and Wine

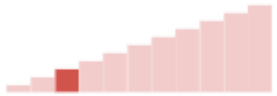
Grape



SEVERITY

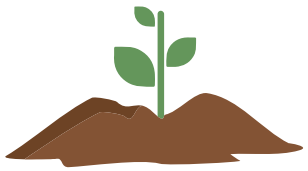
20 Mild

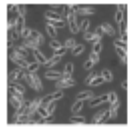
out of 100



Risk severity compared to other vineyard samples

Soil





Brettanomyces bruxellensis

Yeast

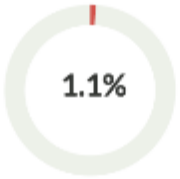
SEVERITY

70 Agressive

out of 100

Risk severity compared to other vineyard samples

FREQUENCY



Percentage of vineyard samples that have this fermentation risk

BASED ON

1 Fungus

View full list

Different microorganisms found in the sample

SEVERITY

<10 Mild

out of 100

Risk severity compared to other vineyard samples

Grape pomace and Skin compost

Symptoms

NO - Symptoms

NAME
Black foot disease

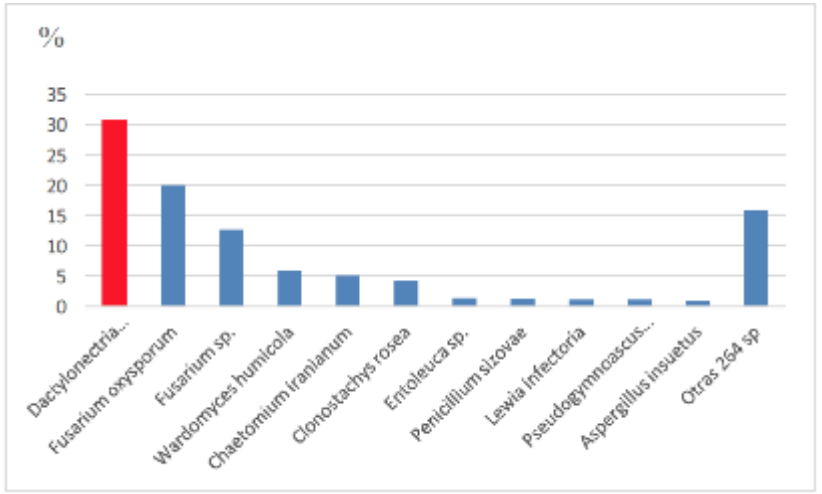
TEST RESULT
Detected

SEVERITY
80
out of 100
Agressive

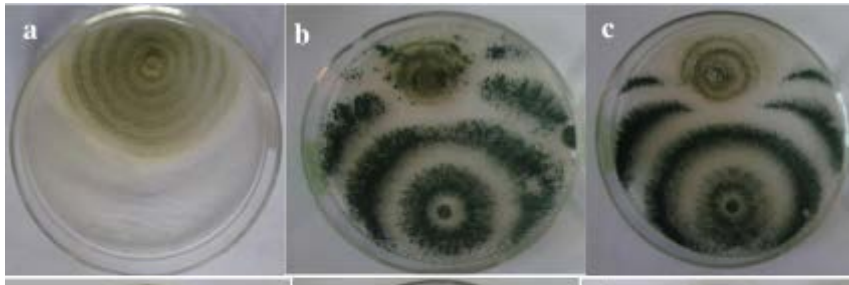
FREQUENCY
27.2%

Disease severity compared to other vineyard samples

Percentage of vineyard samples that have this disease



5 Biocontrol sp



Success cases

www.portal.wineseq.com/success_cases

WineSeq
works and the
proof is here


I ♥ MY
MICROWINEMAKERS
WINESEQ
www.wineseq.com

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