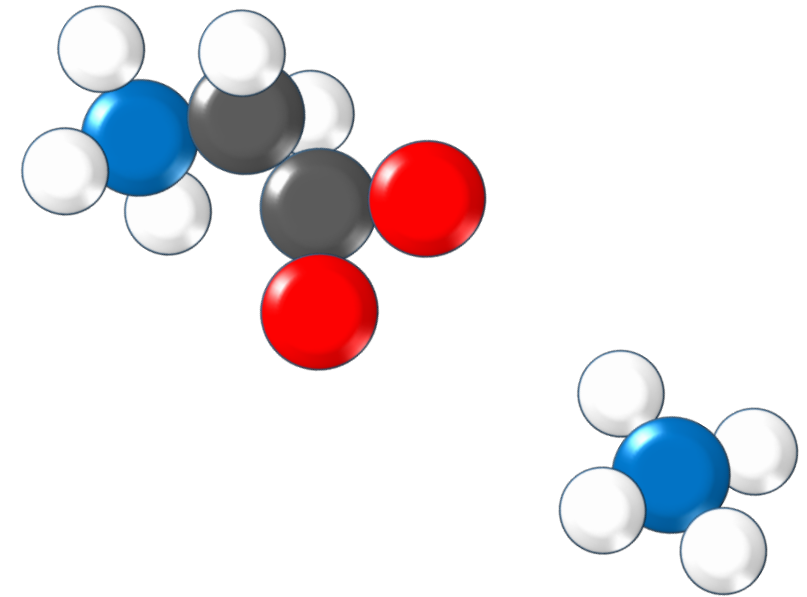


# YEAST ASSIMILABLE NITROGEN

A study on Swedish grapes 2017

Sveneric Svensson  
Chairman Svenskt Vin

# NITROGEN SOURCES FOR THE YEAST



Organic

Free amino acids (FAN)

Proline

All the other

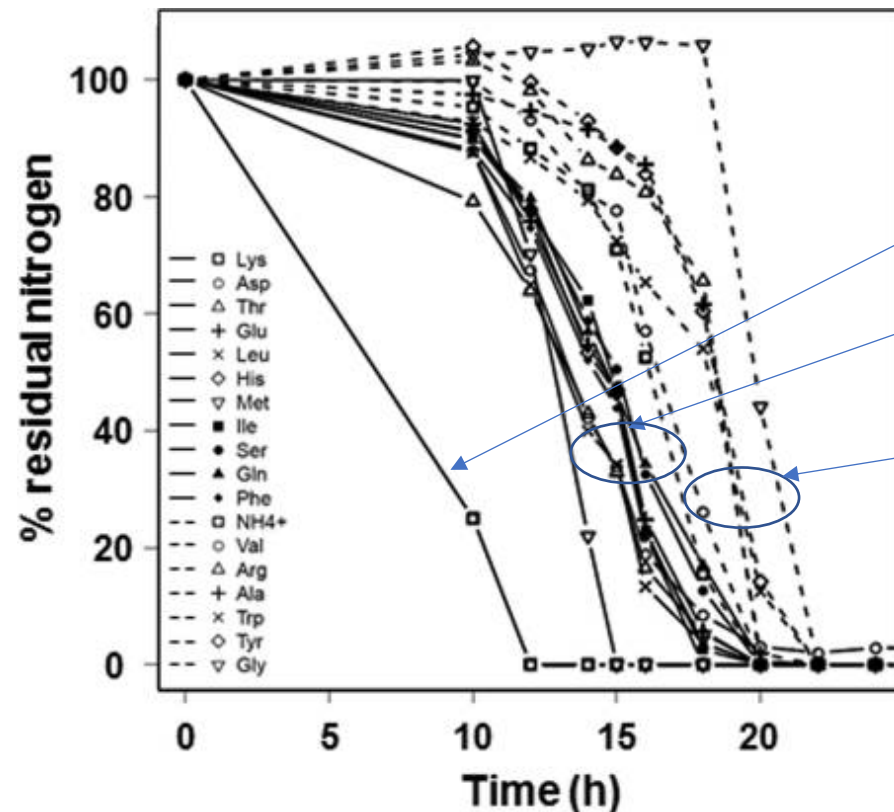
In-organic

Ammonium (NH<sub>4</sub><sup>+</sup>)

Yeast Assimilable Nitrogen YAN  
= Nitrogen that can be used by the yeast

# ASSIMILATION OF NITROGEN AFTER INOCULATION

*Crépin Appl. Environ. Microbiol. 2012 78 8102-8111*



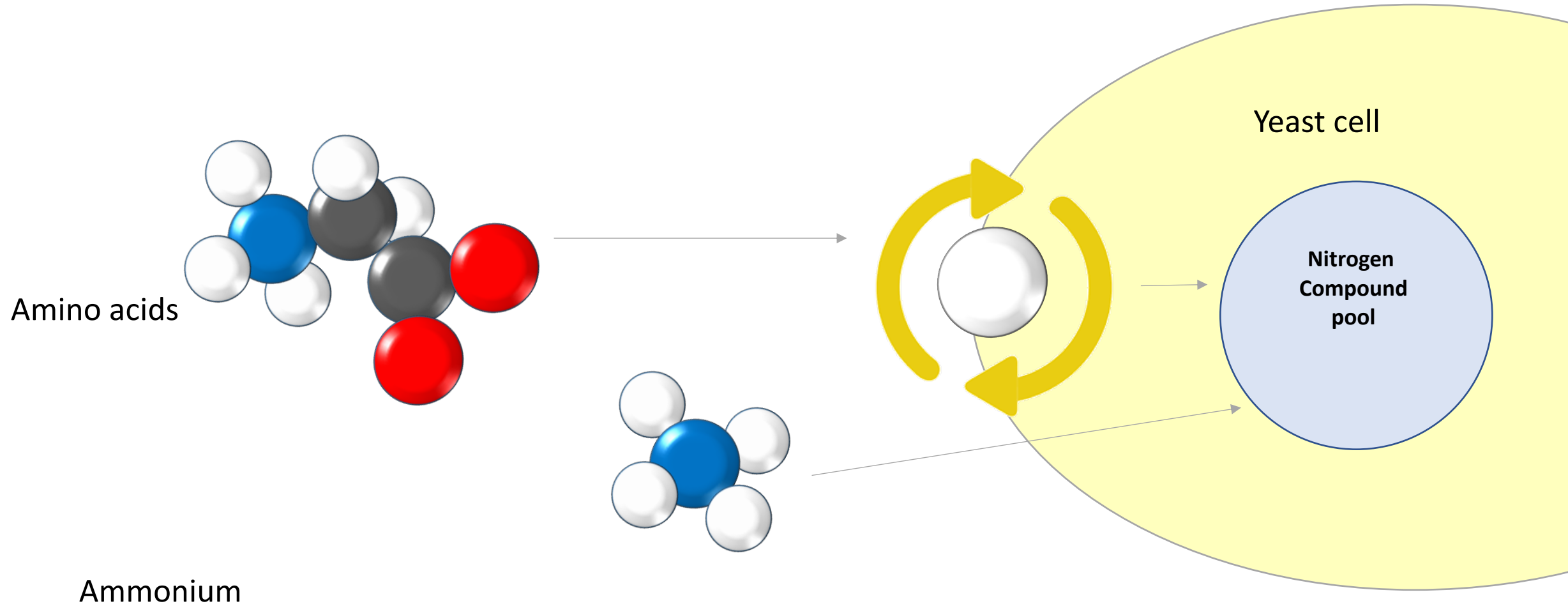
Ammonium is taken up first

Next is a group of amino acids

Finally the rest of amino acids

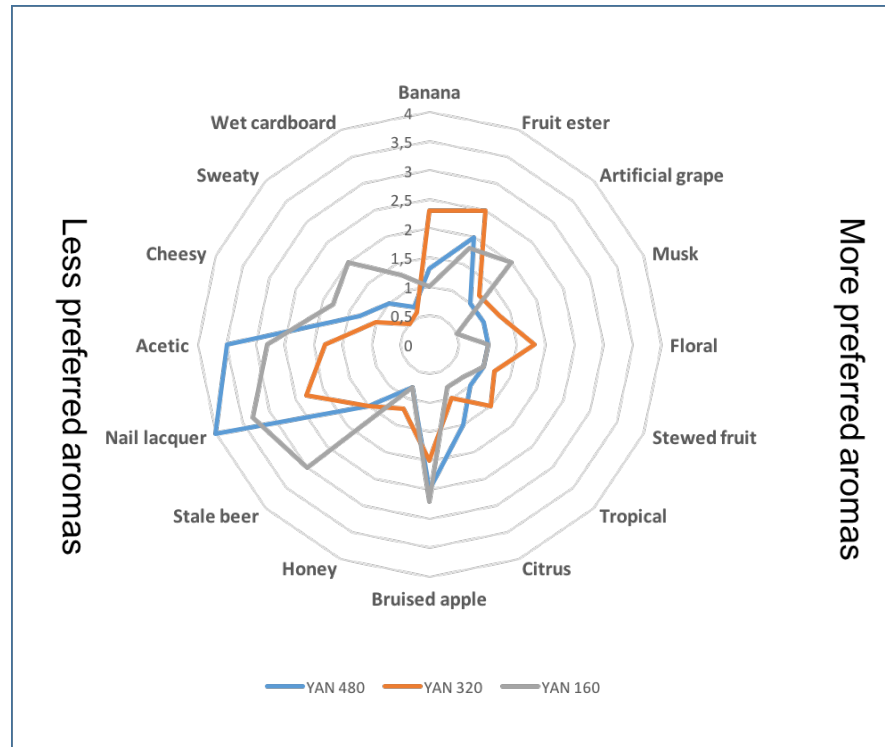
All YAN is assimilated within 20 – 30 hours

# YEAST UPTAKE OF AMINO ACIDS AND AMMONIUM



Don't add ammonium (DAP) before start of fermentation

# WHY SHOULD WE BOTHER ABOUT NUTRITION?



Australian Wine Research Institute

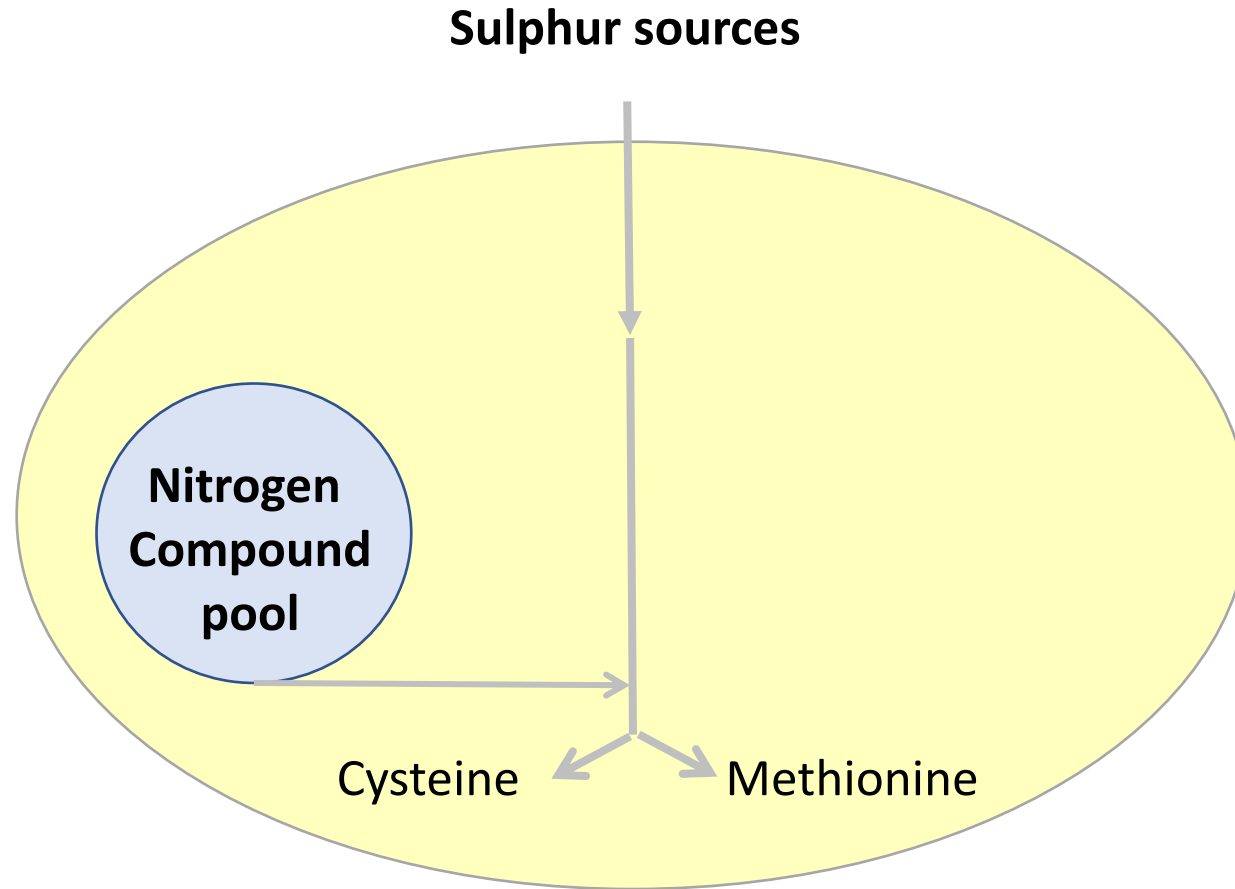
Low YAN musts have risk of sluggish or stopped fermentation – small or dead yeast population

Low YAN may cause nitrogen deficiency with high production of  $H_2S$

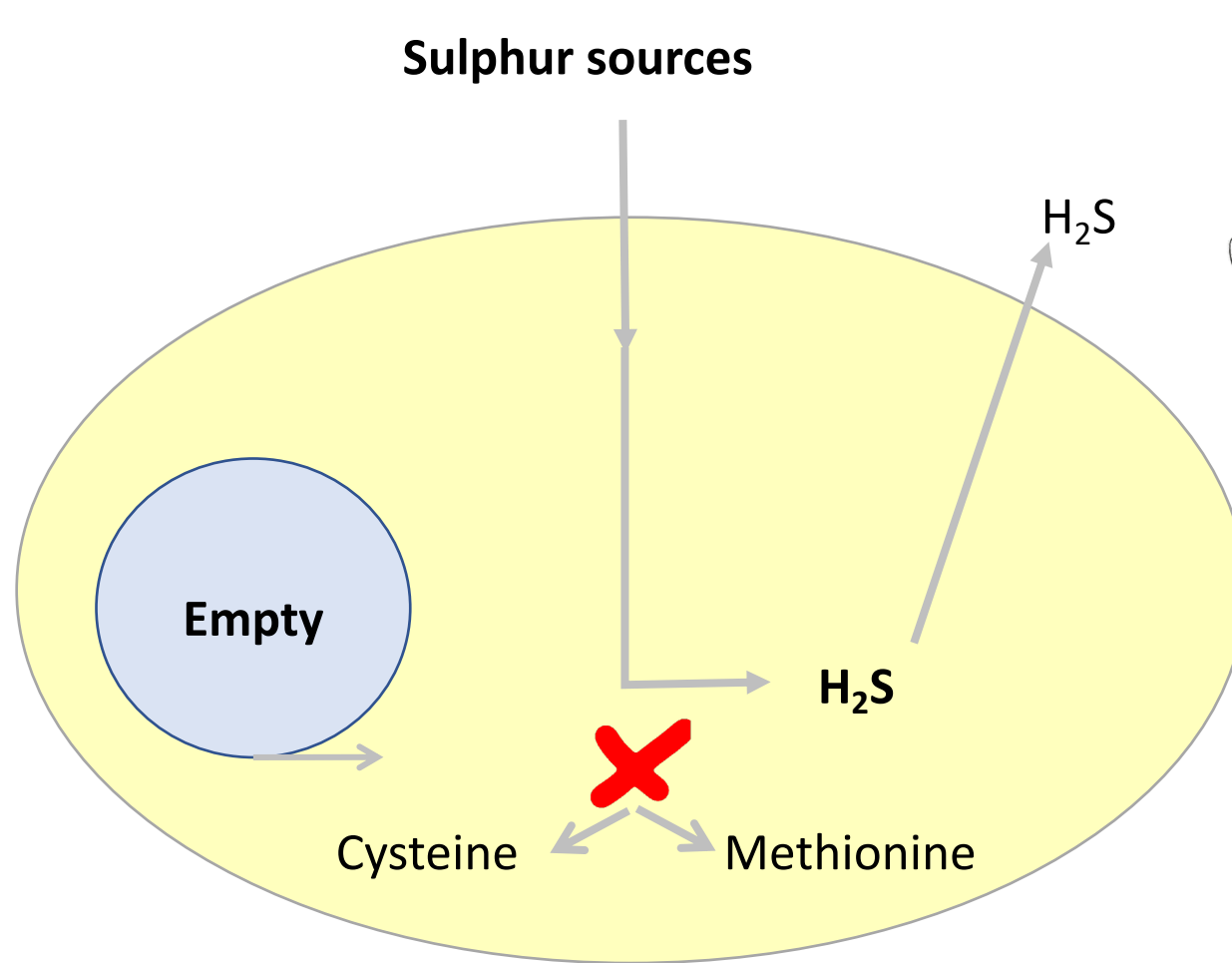
Too high levels may cause a too large yeast biomass with starvation mid fermentation

Too little or too much YAN both impair wine quality

# YAN AND HYDROGEN SULPHIDE PRODUCTION



# YAN AND HYDROGEN SULPHIDE PRODUCTION



# THE GOOD LEVEL OF YAN – BRIX DEPENDENCY

Sweden 2017	OE	BRIX	SUGGESTED YAN MG/L
	90	21	225
	95	22	250
	100	23	275
	105	24	300
Sweden 2016	110	25	325

From: [naniamowinemakers.com](http://naniamowinemakers.com)

The demand on YAN is depending on how much work the yeast should be doing  
However never ferment with values below 200 mg/L



WHAT IS THE NITROGEN LEVEL ?

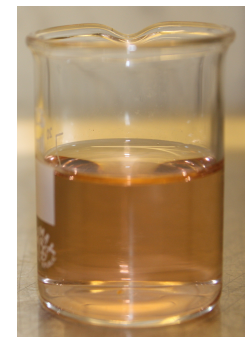


# ANALYSIS DONE 2017 ON SWEDISH GRAPE MUST

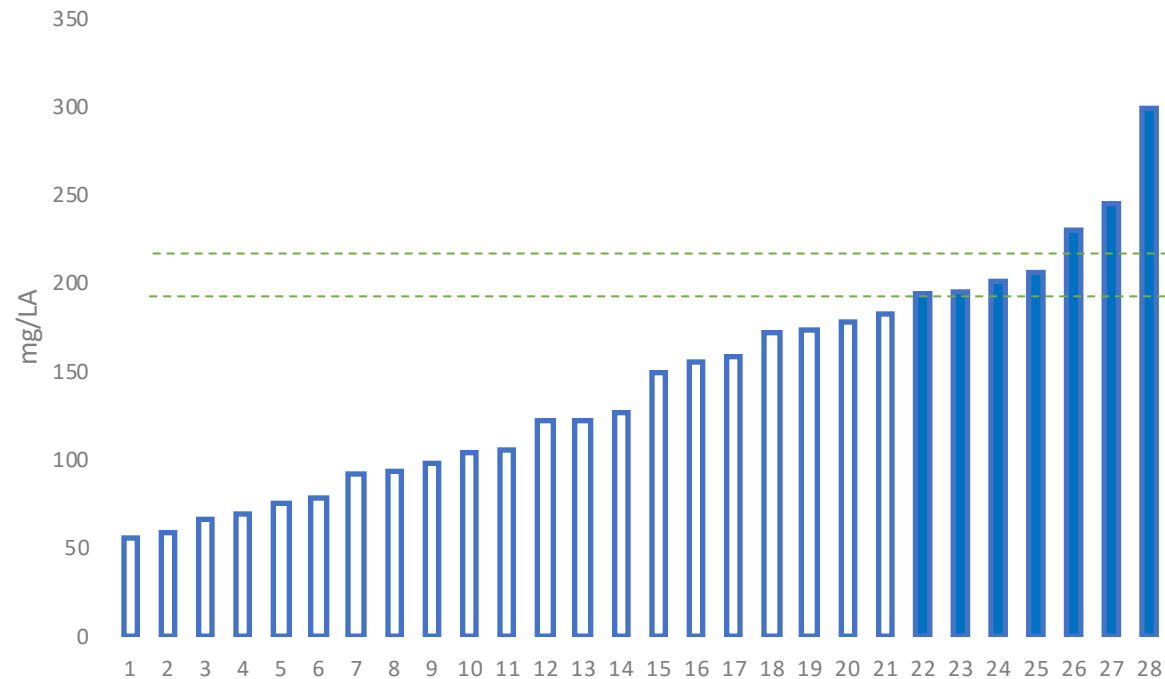
Solaris	28
Rondo	8
Other blue	3
<hr/>	
Total	37



All samples were clarified by centrifugation 6000 rpm for 20 minutes  
Turbidity 80 - 100 NTU



# YAN IN SOLARIS MUST – ORGANIC YAN



Estimated need 200 - 225 mg/L

Most musts need supplementary nutrition

# CONCLUSION

There are now substantial evidence that just about correct level of YAN improves aroma of wine

YAN level in must vary considerably

With measurement of YAN in must the winemaker can make an informed decision of how much nutrition to add

**Don't take a chance on the right YAN level**