

Acidity in Danish grapes

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By wine consultant

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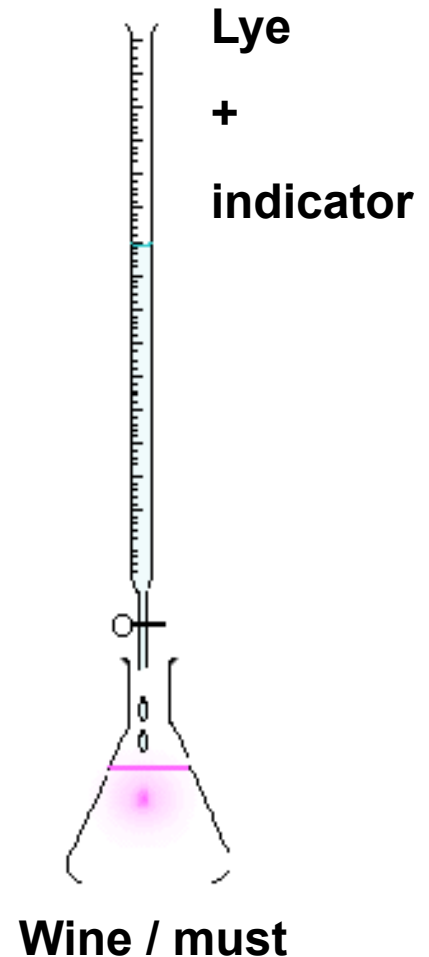


Acids in juice and wine

- Main acids
 - Tartaric acid (COOH - CHOH - CHOH - COOH)
 - Malic acid (COOH - CH₂ - CHOH - COOH)
 - Lactic acid/only wine (CH₃ - CHOH - COOH)
- Other acids
 - Succinic acid (Amber acid)
 - Citric acid
 - Acetic acid (volatile acid)
 - Etc.

Measuring acids

- Titraton (Total acidity)
 - Cheap and easy to do (practice!)
 - Measures all the acids as if they were tartaric acid
- Level in juice (DK): 8-12 g/l
- Level in bottled wine (DK):
 - Red wine 5-6 g/l
 - Dry white wine 6-7 g/l
 - Sweet white wine 7-11 g/l
 - Sparkling wine 7-11 g/l



Too much acidity in my grapes!

What to do?

1. Try other varieties
2. Reduce the acid in juice (double salt)
3. Reduce (adjust) acid in the finished wine (calcium carbonate or similar)
4. Cold stabilization (add cream of tartar)
5. Malolactic fermentation
6. Blending of wines
7. Using acid-reducing yeast strains
8. Turn high acid into an advantage:
Make sparkling wine!

Double salt -method

Acidex / Neoantacid

- Calciumcarbonate with added crystals of calciumtartrate and calciummalate
- Reduces both tartaric and malic acid equally.
- Only to use in juice. (Wines will oxydize!)
- Do not use sulfite in the treated juice. (Brown colour might stay in the wine).
- Beware of too high pH after reducing the acid!! (Problems with bacterial infections).
- Works only at high pH ($> 4,5 - 5$), so follow this approach:

How to use double salt - method



1. Pour the Acidex in a tank.
(Use special tables to determine the amount).
2. Measure the amount of juice where all the acid is to be removed (special tables).
3. Pour this amount of juice slowly in the tank with the Acidex while stirring gently.
(pH may raise to around 8 during the process)
4. After sedimentation (and maybe even filtering) to get rid of the sediment of double salt - pour the treated amount of juice back in the rest of the juice.
5. Start fermentation quickly afterwards.

Malolactic fermentation (MLF)

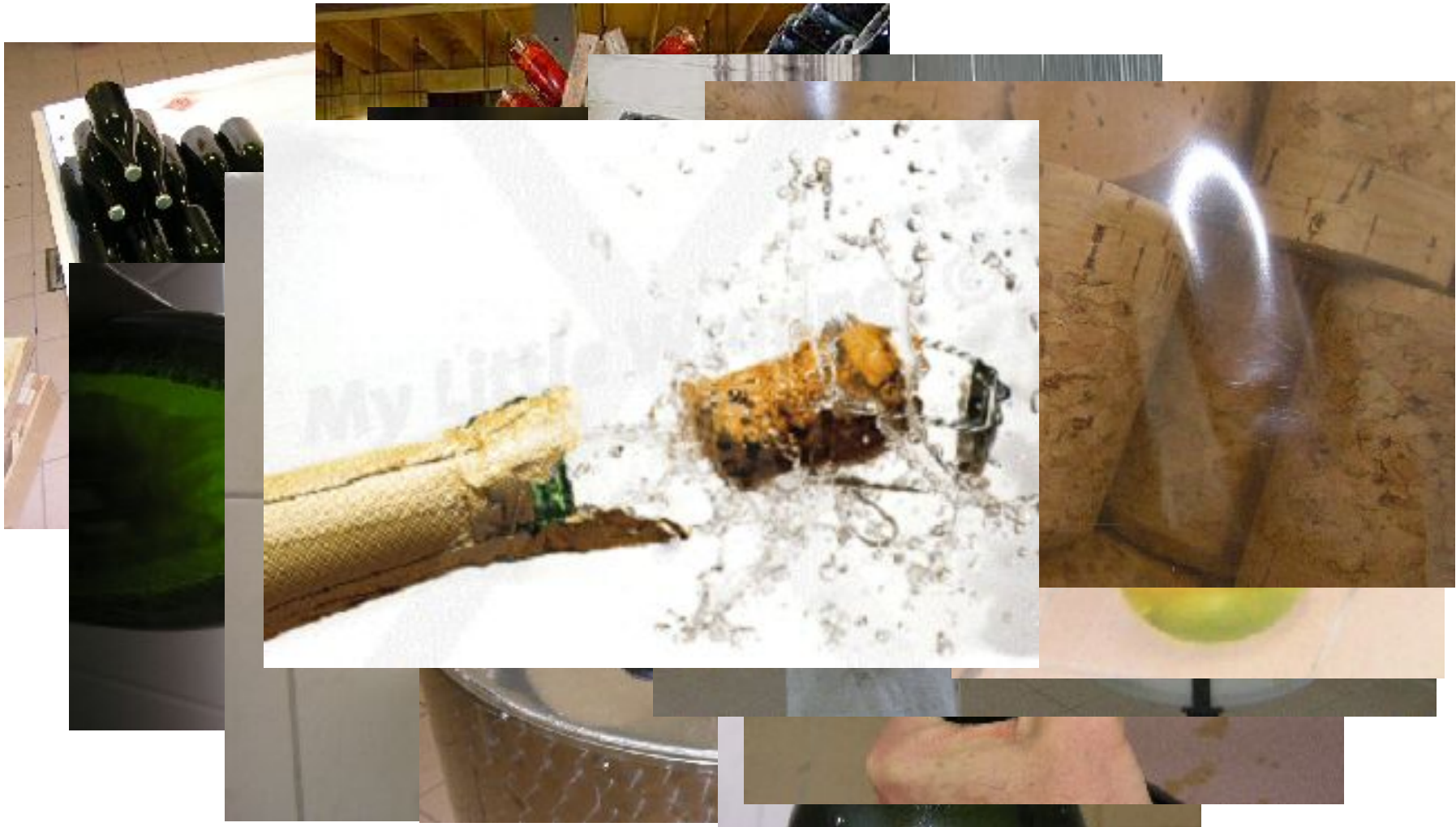
- Bacteriological process which turns the malic acid into lactic acid.
- Lowers the total acid and raises the pH.
- Changes the taste profile of the wine radically. (Smoother acid and less fruit).
- Used in most of the red wines.
- Used in a few white wines.
- MLF might start spontaneously during (or at the end of) alcoholic fermentation.
 - Or even in the bottles if not prevented!!

Starting the MLF

- Add the bacterias at the end of the alcoholic fermentation
 - or immediately after.
- Works best at:
 - pH: 3.2 - 3.4
 - temperature: 20 - 22 degree Celcius
 - free SO₂ below 10 ppm (mg / l)
 - alcohol content below 13 % vol.
- If one of these points are not met, it might be difficult to start the MLF.
- If two or three points are not met, it might be impossible.

Making sparkling wine

Methode traditionnelle



Grapes for sparkling wine

- High in acid (up to 11- 12 g/l)
- Low in sugar (pot. alc. 10 % vol.→
ie 76-80 Oechsle = app. 18 Brix)
- Neutral in flavour and taste
- Healthy grapes
- Orion →
- Solaris (if harvested early)
- Mertzling (?)
- Müller Thurgau (?)



Pressing

- Whole bunch pressing (no destemming).
- Minimal skin contact.
- Gentle pressing.
- Low pressure:
0,2 - 1,4 bar gradually.
- Low yield: 50% juice.
- Minimal sulphuring
(max. 10-15 ppm)
- Pneumatic
membrane press



Yeast for sparkling wine

- Must be able to start under unfavorable conditions (low pH, high acid, high alcohol, low amount of nutrients/oxygen)
- Must be able to flocculate easily (form a solid sediment)
- Neutral taste
- Quick autolysis (decomposition)
- Bayanus (EC-1118 and DV10)
- Alginated yeast

Basis wine

Before bottle fermentation

- High in acid (8 - 10 g/l)
- Low in alcohol (10 - 10.5 % vol.)
- pH 3.0 - 3.3
- Completely dry (no residual sugar)
- Possibly malolactic fermented (no fruit character, biological stable)
- Low sulfur (10-12 ppm free SO₂)
- Cold stabilized
- Warm stabilized (fining / bentonite)
- Filtered (sterile)

Thank you ... !

