

15th Wine Industry Technical Conference

Sydney

July, 16



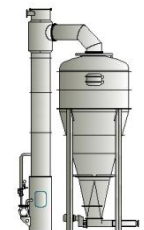
Jean-Luc Favarel

jl.favarel@pera.fr

Pera R&D manager

Winemaker in a cooperative cellar 10.000.000 lt (5 years)

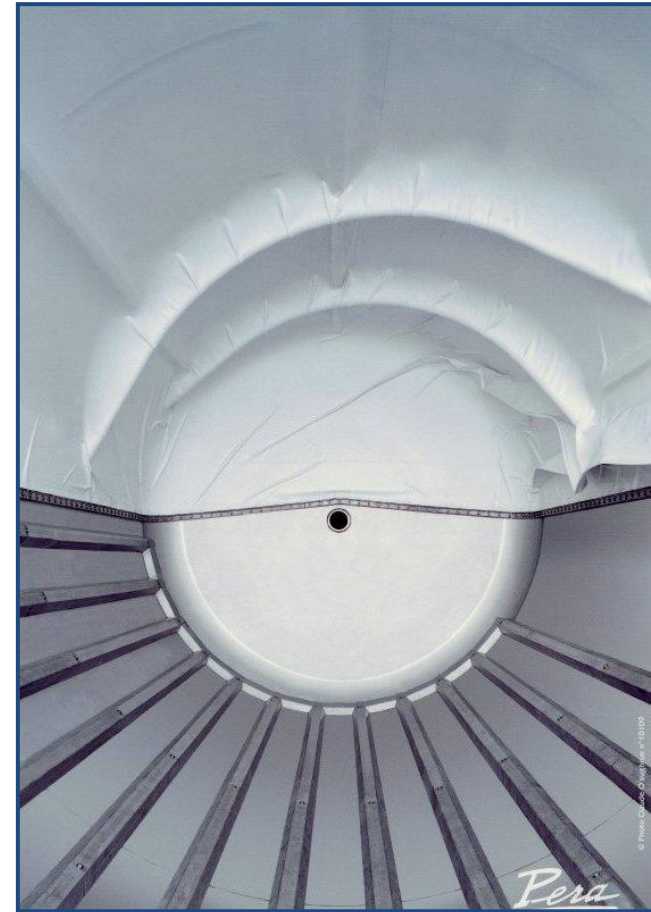
ITV French Technical Wine Institut / Sout-West manager (18 years)



Pera

ENOXY+ : Quality juice preservation

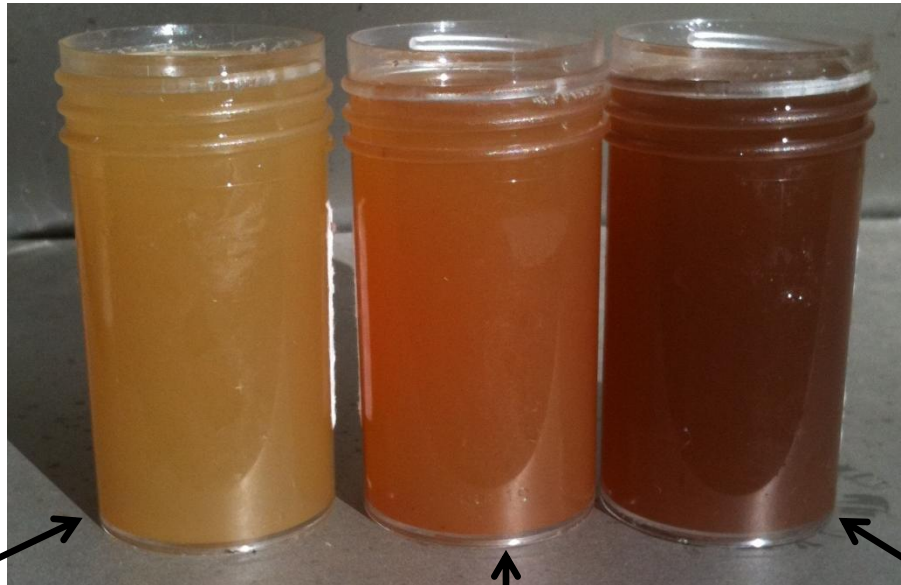
For white and rosés wines
Pneumatic presses are generalised



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During extraction, juices are getting oxidized :

- brown colour**
- aromatic damages**



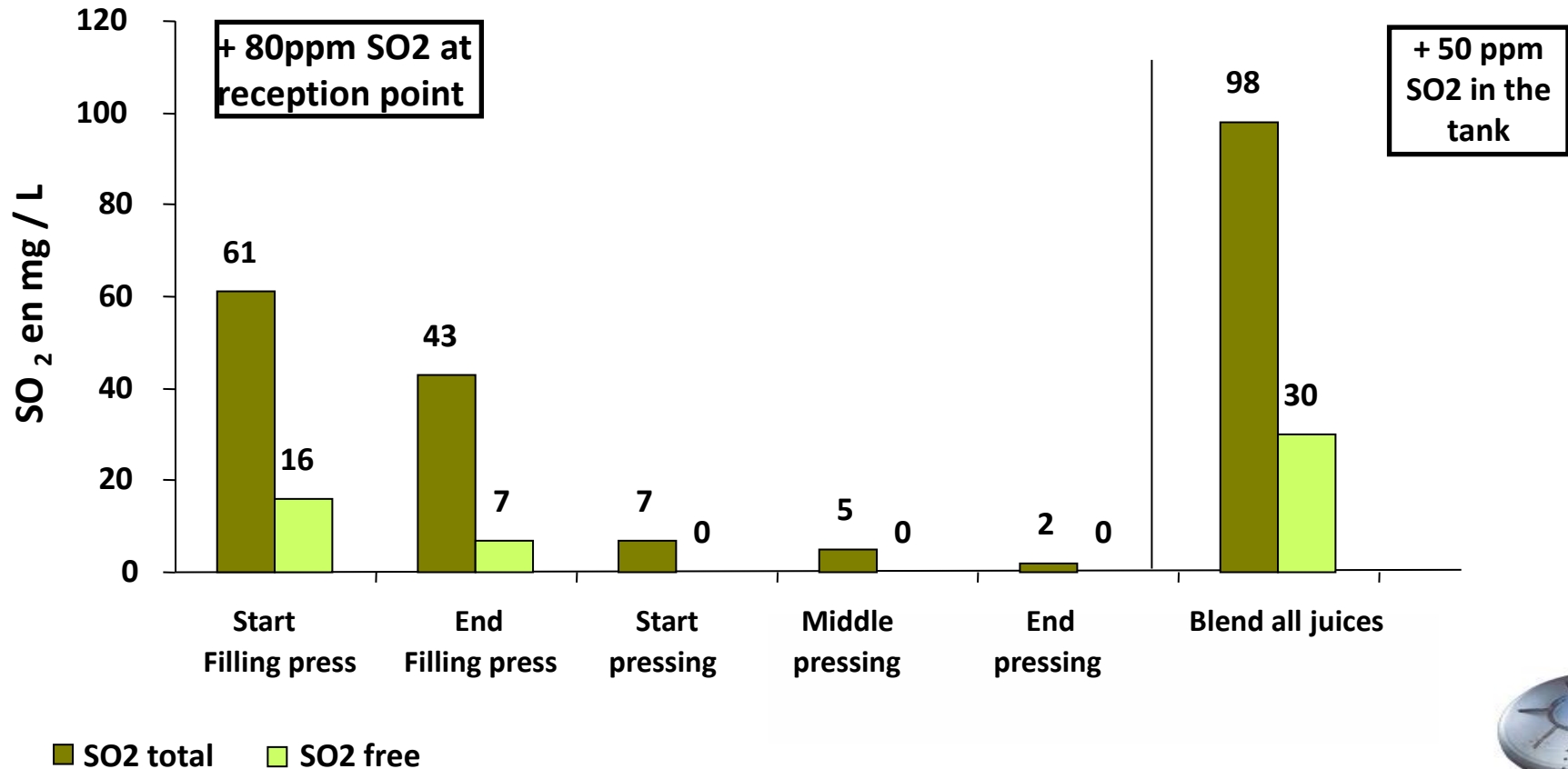
1°st juice, free run

Middle pressing

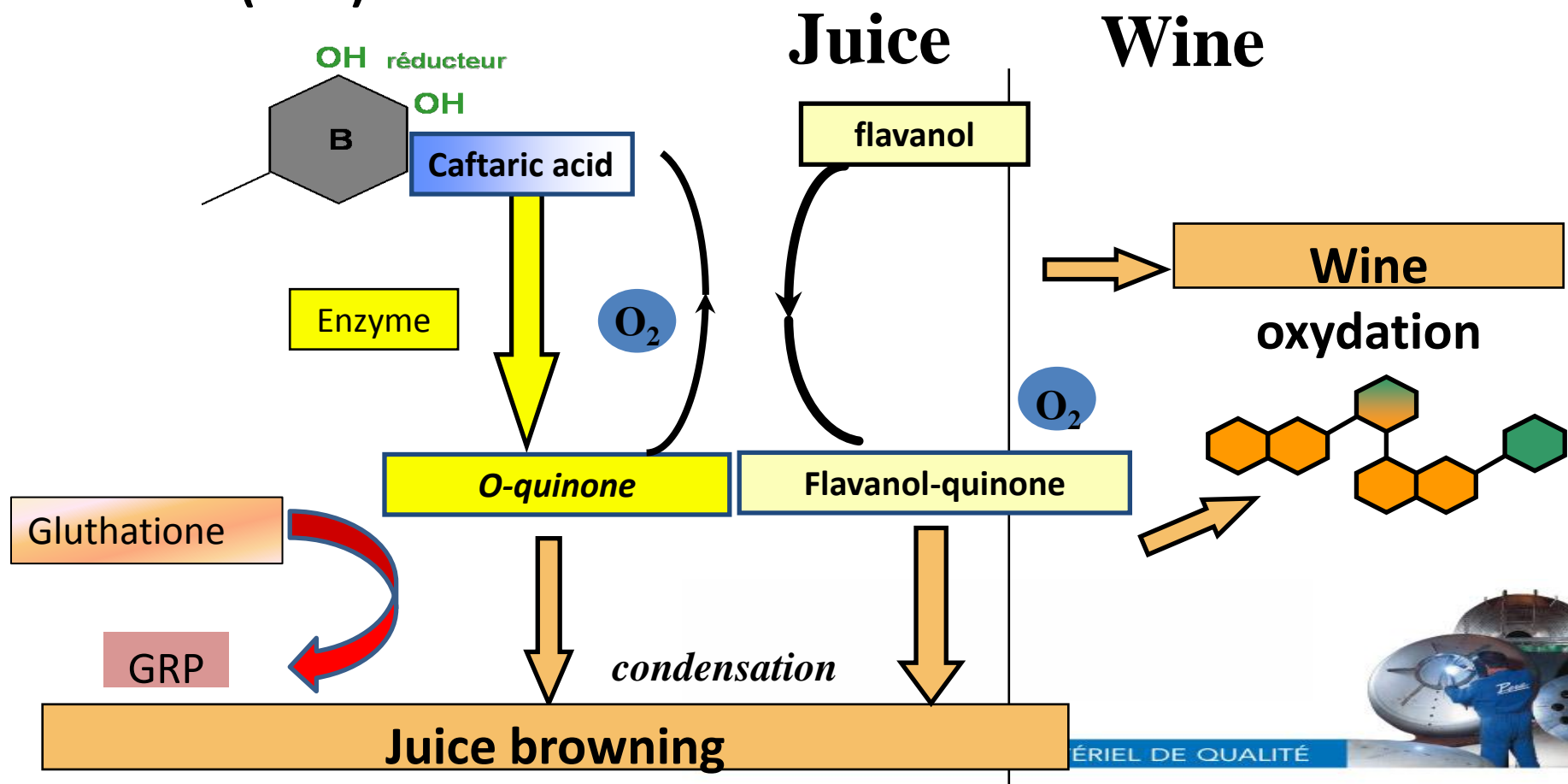
Last juices



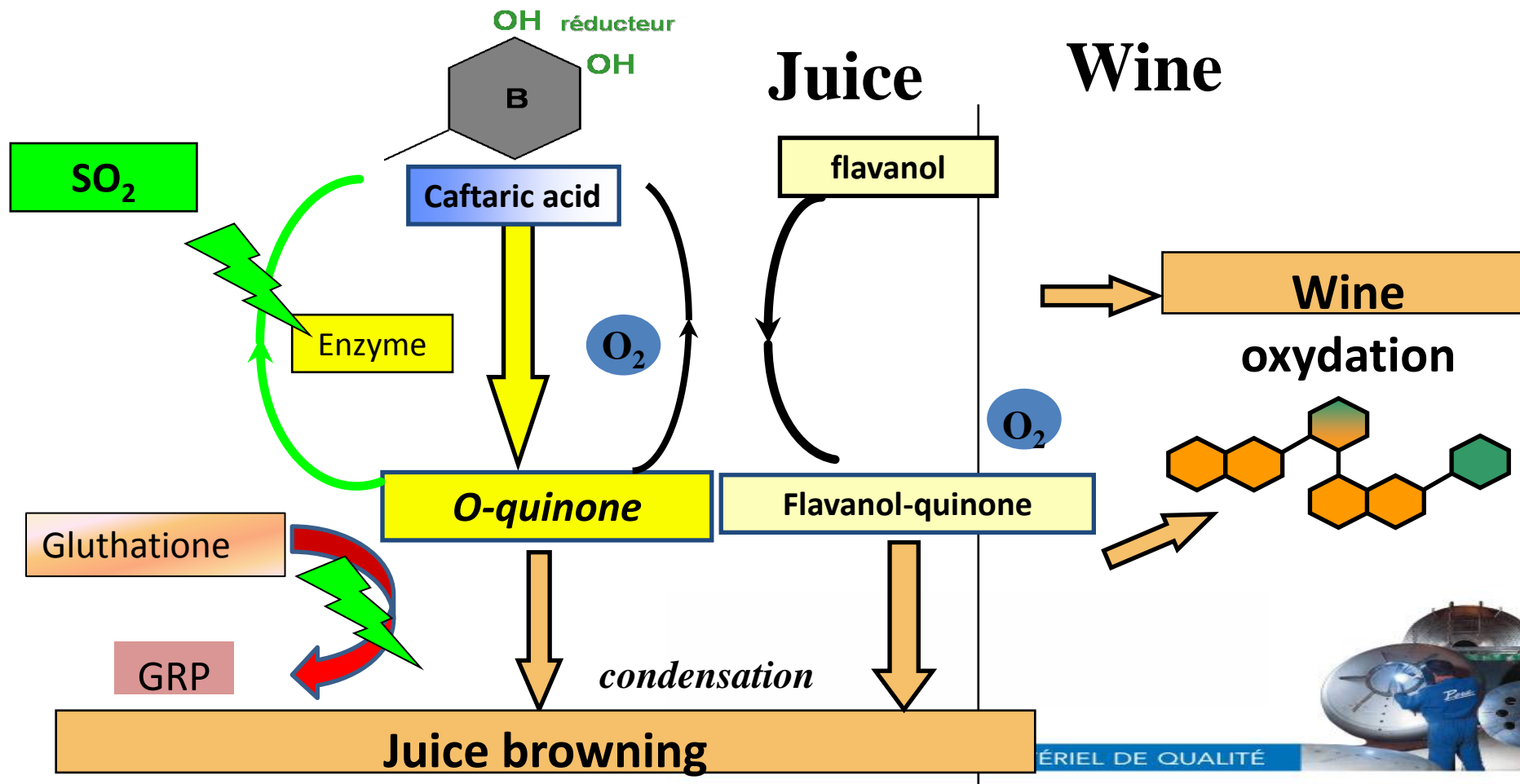
1. SO₂ added at overload point runs off press with free run juices
2. No more SO₂ during pressing, so juices are running without any protection



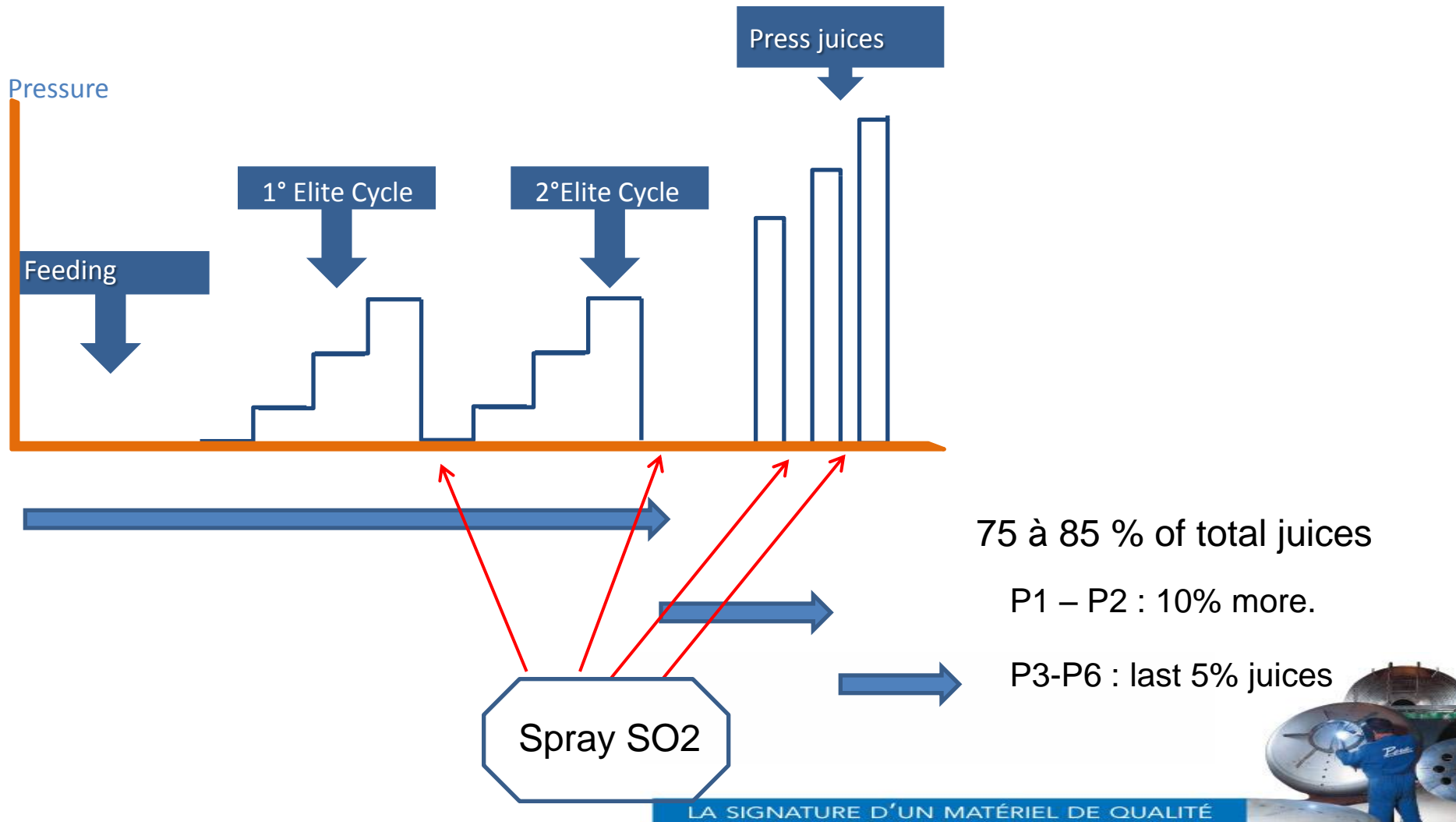
1. Caftaric acid degradation to quinone, due to polyphenoloxidase activity and oxygen consumption
2. Glutathione consumption by quinone into Grape Reaction Product (GRP)



1. Anti-oxydant : blocking enzyme and oxygen consumption
2. Strong reductive : glutathione preservation



Spraying anti-oxydant during vacuum

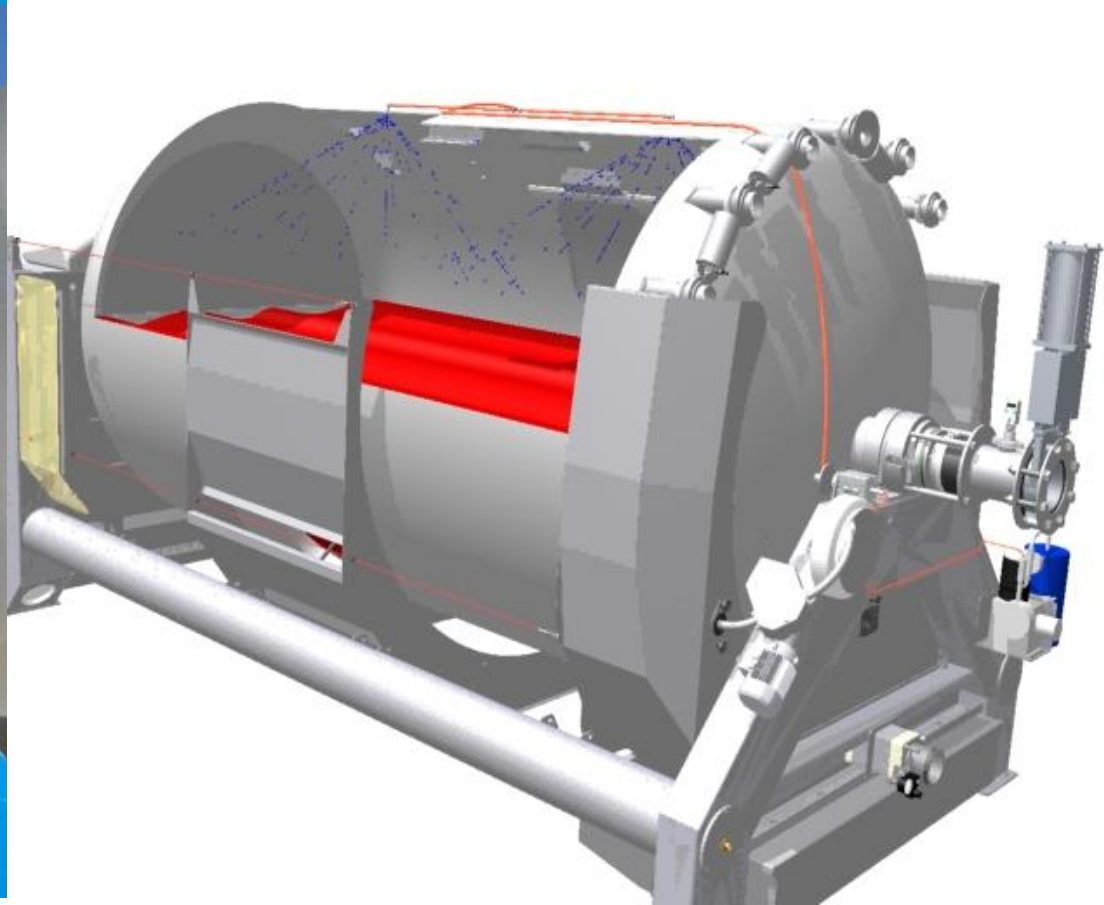


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ENOXY + : Injection system

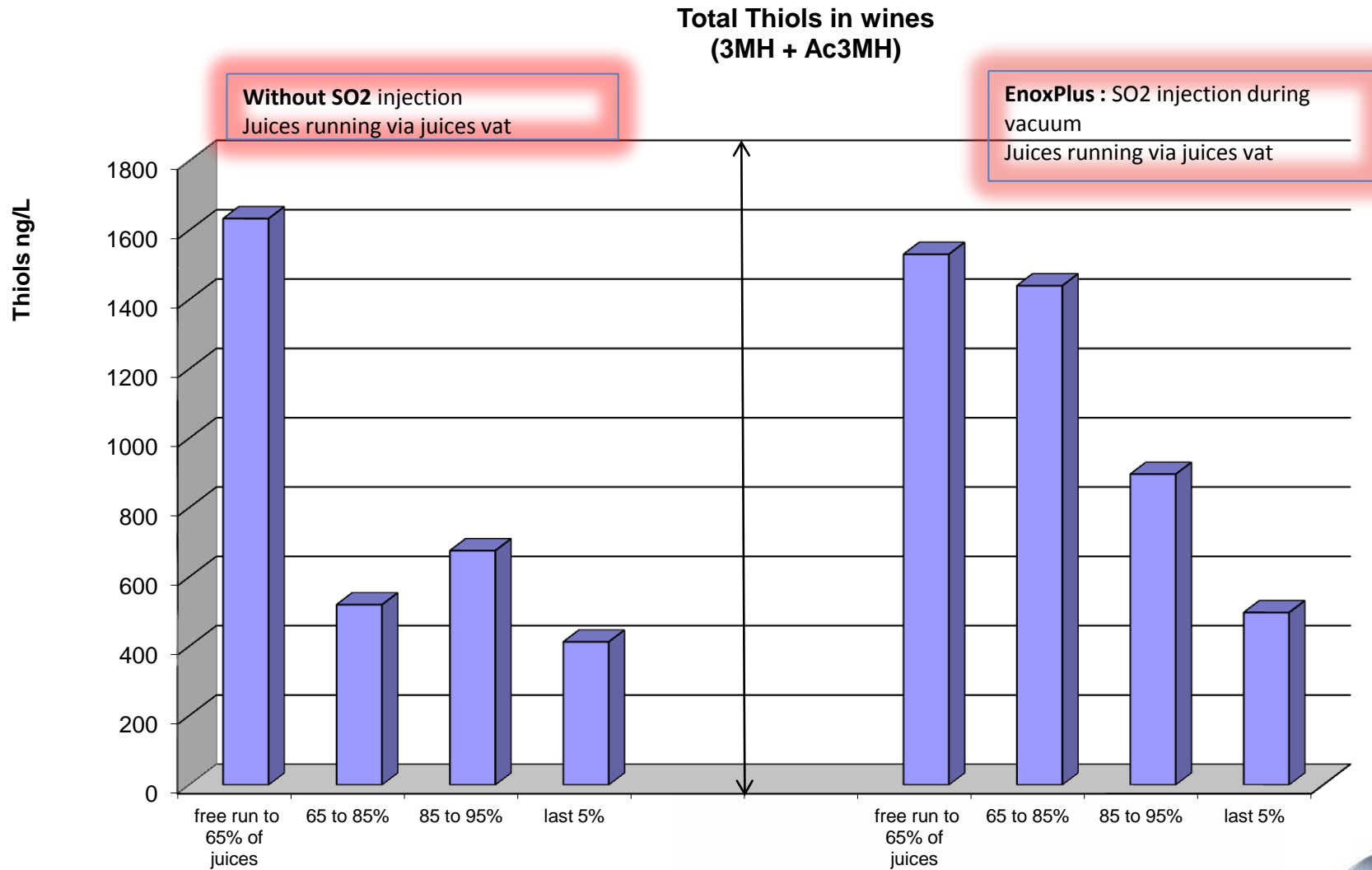


SO2 tank and pumping



Piping and nozzles for SO2 spraying

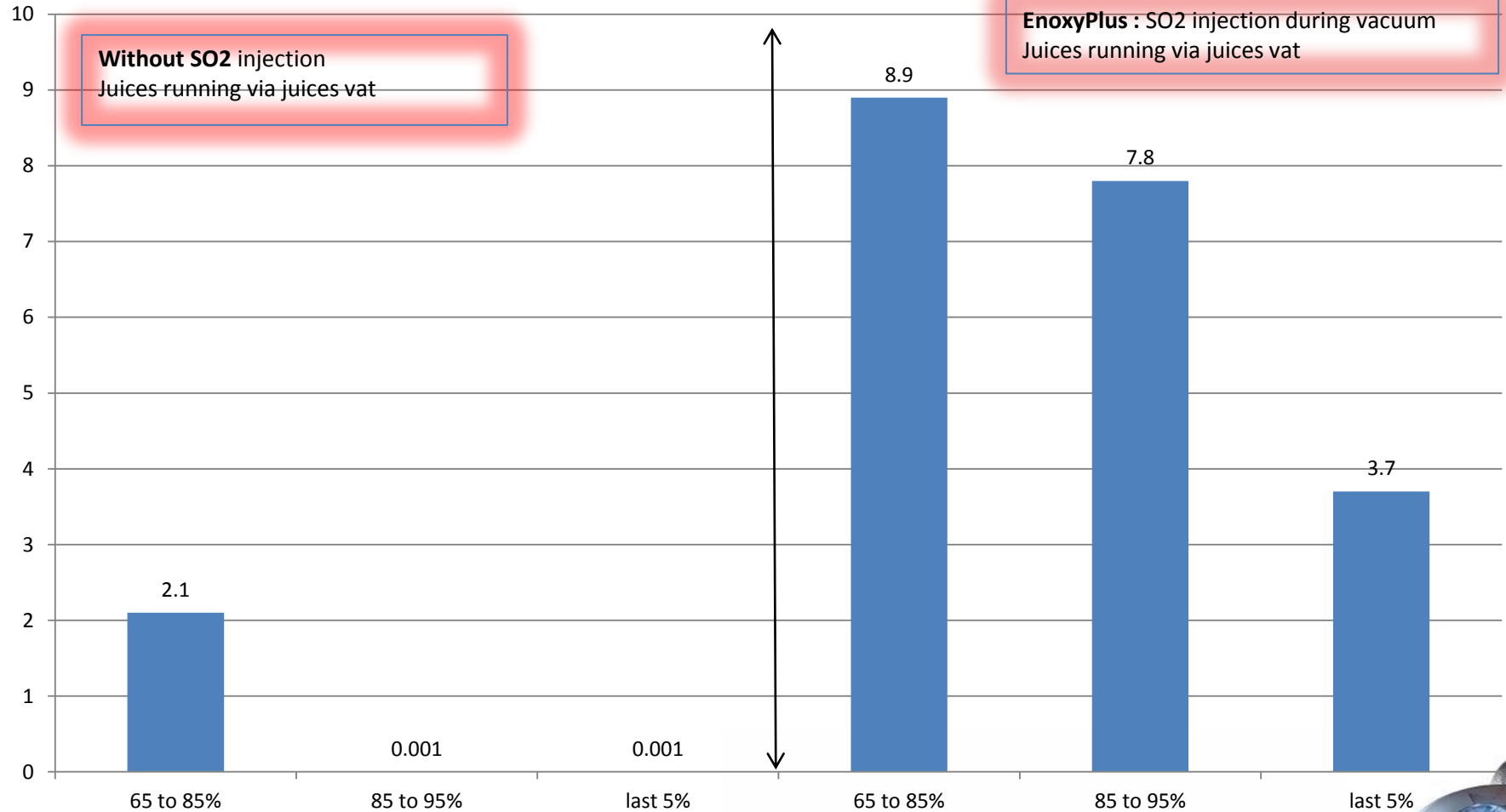




ENOXY + : Glutathione preservation

GSH (mg/l)

Preserving Glutathione



Analysis on finished wines

	SO2 Total		SO2 Libre	
	Control	ENOXY +	Control	ENOXY +
	65	68	19	16

Précision de mesure : +/- 10 mg/l



Simple

1. Easy to work with. Just fill anti-oxydant tank!
2. No Nitrogen buffer ball, no gaz pump.....
3. Injection time adjustable as we want
4. From our smallest press 20hl to the biggest 600hl

Efficient

1. Better juice quality, better wine quality
2. +20% more quality juices vs traditional press

More than 80 units working in France, Spain, Chili, Russia

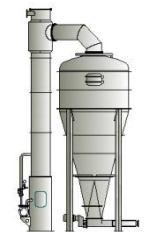
**Medal in 2012 Vinitech Bordeaux exhibition
"Trophée de l'innovation"**



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Patented by National Agronomic Research
Institute INRA

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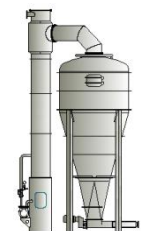
-Flash-détente technology :

- Developed by INRA in 1992/1993
- INRA conceptr of wine-application for electrodiaisys

- PERA patented world-wide since 2002

- Today :

- 75 units in France (Bordeaux, Languedoc, Côtes du Rhône, Burgundy)
- 10 units in South Africa, 10 in Spain, 3 California, 5 Chile, 1 Russia.....? in Australia

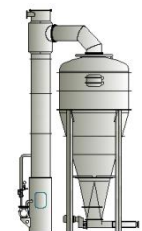


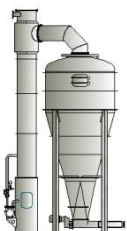
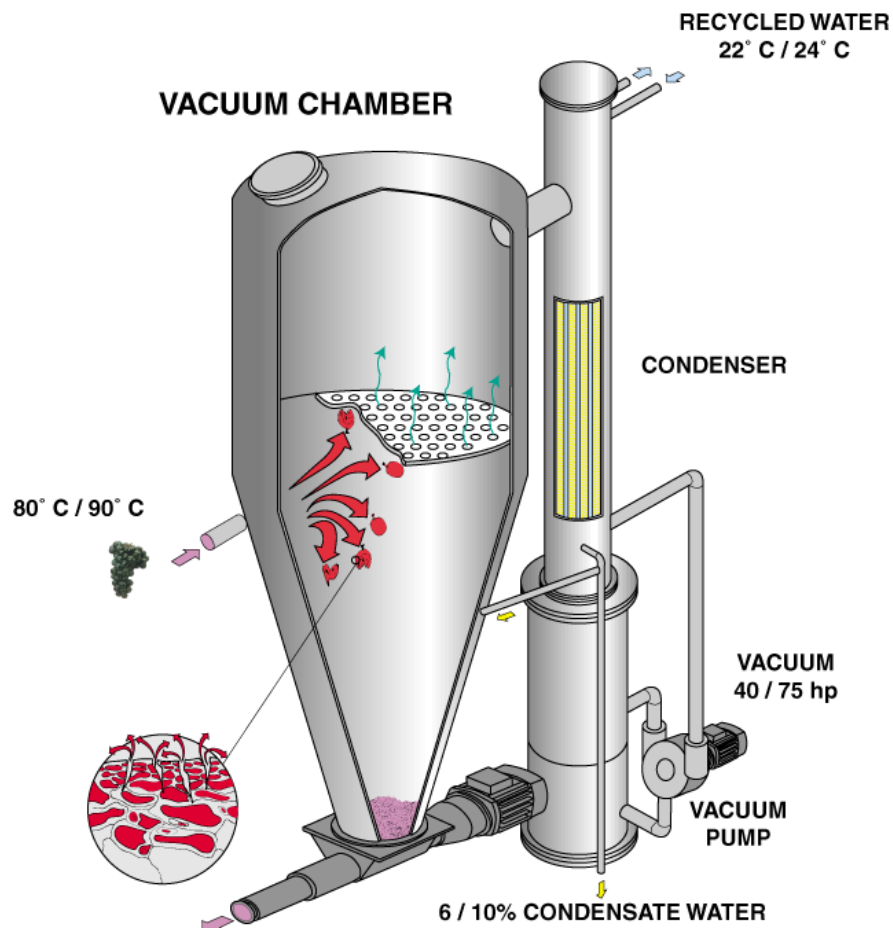
- Applications :

- Red Wine production
- Red Grape juices and red concentrates

- The goal :

- increasing color, soft tanins, polysaccharides extraction
 - reducing veg aromas
 - wining energy, time, tanks in a all controlled-process
- Continuous process for pre-ferment extraction, 7 to 60t/h

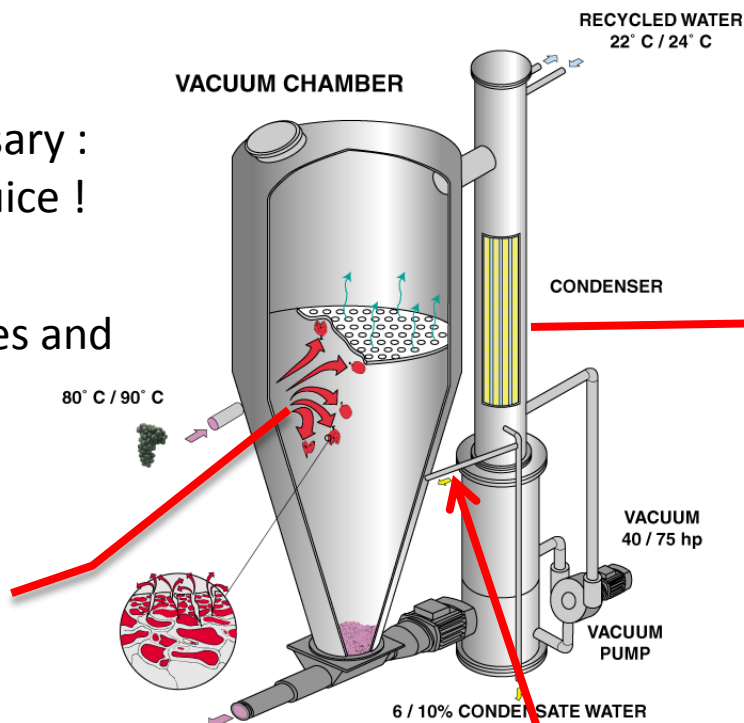




Previous dejuicing is necessary :
Skin is the target, not the juice !

Due to high T°, PPO enzymes and
laccase are destroyed

Softer tanins extraction
because seeds keep
intact (no water inside)

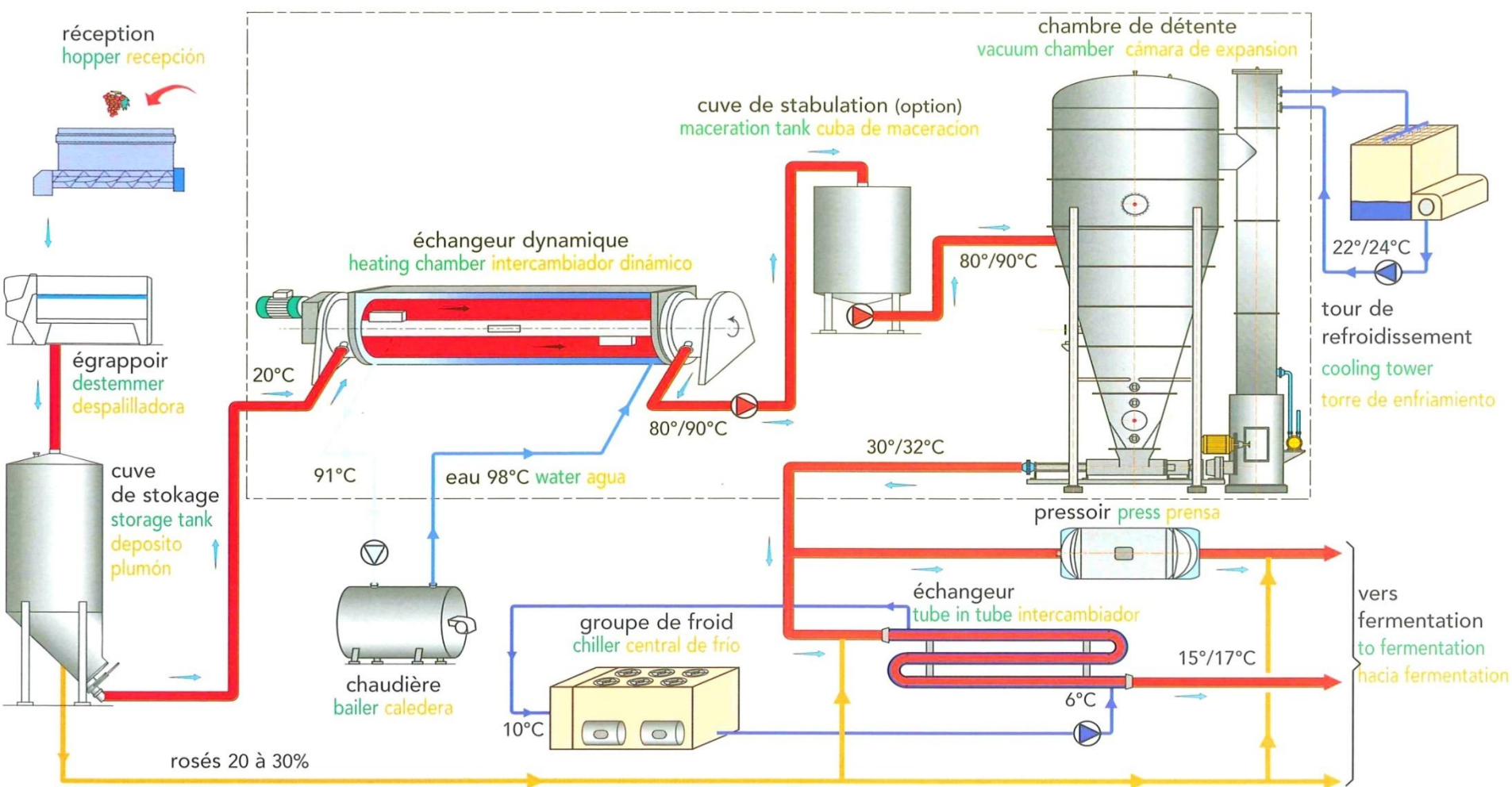


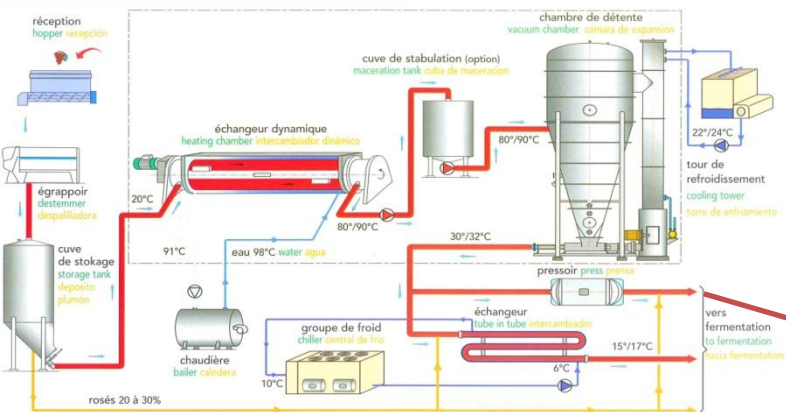
Pyrazine and
vegetal aromas
volatilisation

Activated
Carbon
Treatment

Other uses
of bio.
water ...

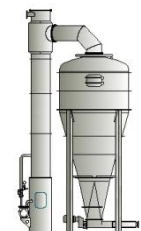






Direct to a **NORMAL** tank for fermentation,

NOTE : this tank can be filled !!



Major effects of FDT process on wine itself :

- ✓ **Better tanins and anthocyanins extraction :**

Tanins extraction occurs in « aqueous phase », without Alcohol. That means less green tanins, no tanins from seeds

- ✓ **Better Polysaccharides extraction**

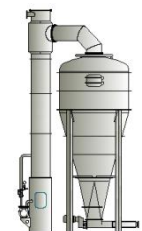
- ✓ **Less Pyrazines (vegetal aromas), and so allows earlier harvest**

- ✓ **More « fresh red fruits » aromas**

- ✓ **Increases wine level for low quality grapes**

- ✓ **assist to protect integrity of the wine style**

- ✓ **Better yield of quality wine**



Major effects of FDT process on economy:

✓ **Tank optimisation:**

No more pumping-over, labor saving

Use of total tank volume

Stronger and faster alcoholic fermentation

Better temperature control during fermentation

✓ **Work optimisation**

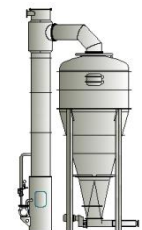
Fermentation volumes are increased

Emptying tank is easier, (the same method of emptying as white wine)

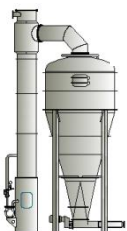
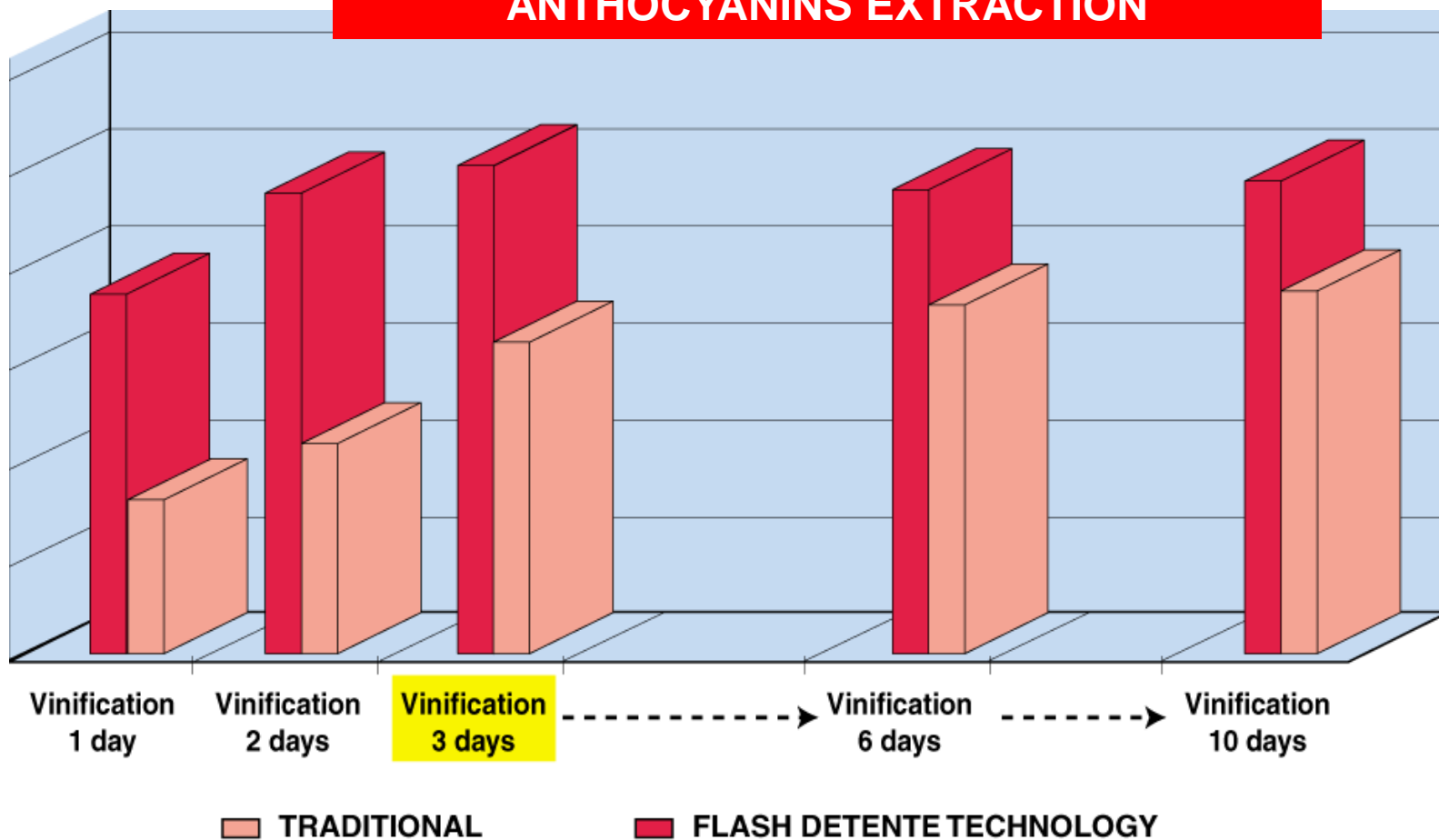
✓ **Saving energy :**

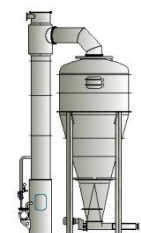
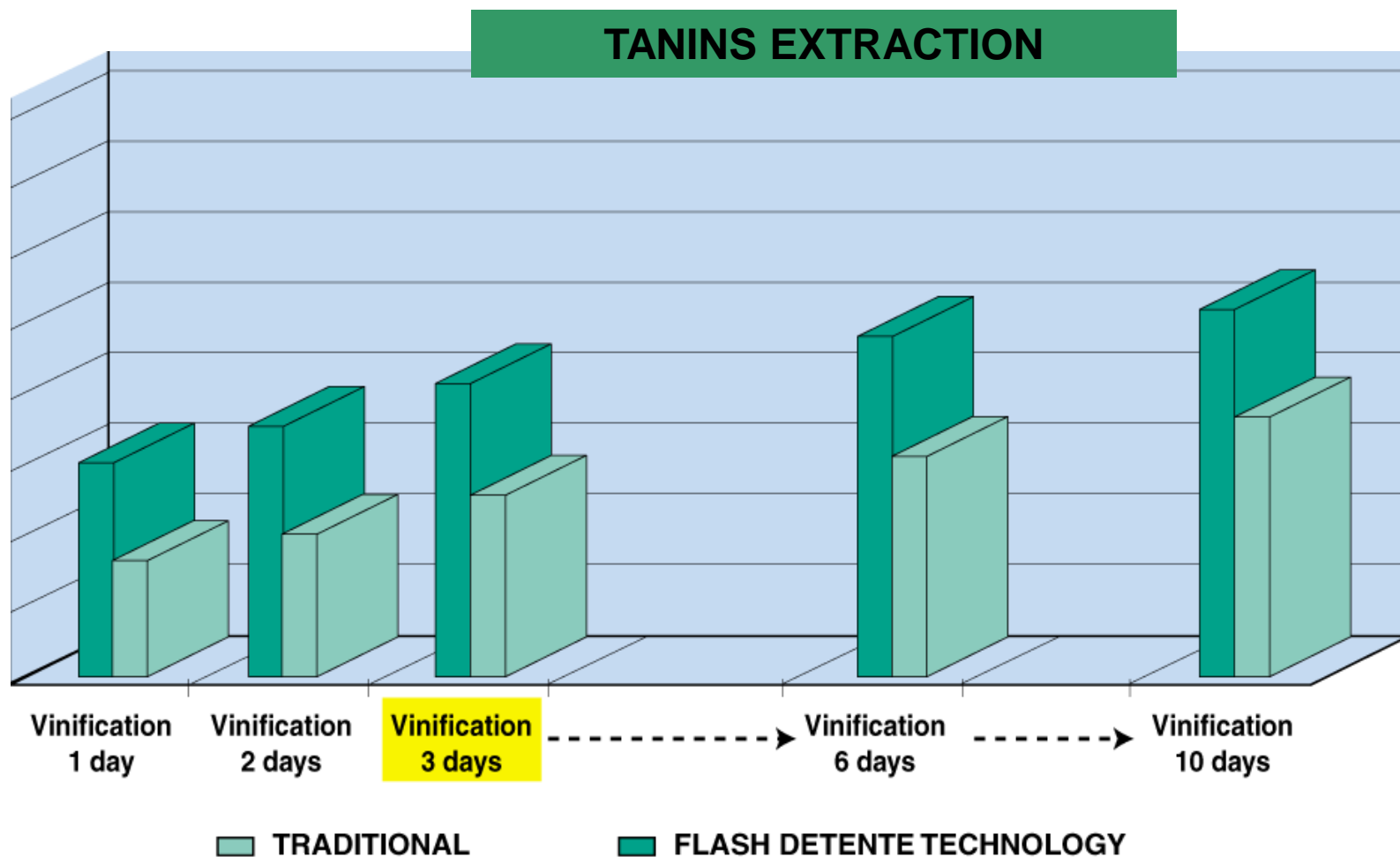
Natural outside temperature assists heating grapes

Better cooling exchange during fermentation



ANTHOCYANINS EXTRACTION





Pera

Flash-détente technology



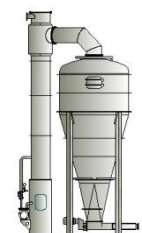
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Flash-détente technology



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Benefits :

✓ Australian situation

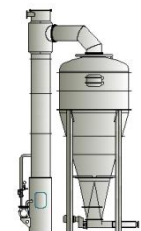
The FDT process can work 24 h/day; flash-détente technology may be used with continuous processing direct to fermentation

Greater flexibility for vintage harvesting ie daylight picking reduces heating costs

Enhances the capabilities of the cellar to make new style wines, and other juice products

Compliments the cellar and gives more tools for the winemaking team

25% increase in fermentation capacity with the same amount of energy



(animé)

Pera

Créons ensemble
les vins de demain

Plus d'infos sur www.pera.fr

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Presentation context

- This presentation was given as part of a workshop on grape and juice processing equipment convened by the Australian Wine Research Institute (AWRI) at the 15th Australian Wine Industry Technical Conference in July 2013.
- The main intention of the workshop was to provide attendees with information on equipment that is new or unusual or that has not been widely used in Australia.
- This and the other presentations given were prepared by equipment suppliers, not by AWRI, and AWRI does not necessarily endorse the views presented. Before the purchase of any major winery equipment, AWRI recommends appropriate background investigations being undertaken; including visits to facilities already using similar equipment, consultation with independent experts and the performing of in-house trials.
- AWRI received no payment from suppliers for the inclusion of their equipment in the workshop.
- For any further details on the workshop please contact AWRI Senior Engineer, Dr Simon Nordestgaard, by email at simon.nordestgaard@awri.com.au.