

The background of the slide features a large, semi-transparent image of industrial grape processing machinery. In the upper half, a circular component, possibly a hopper or a part of a crusher, is visible with several dark circular elements. In the lower half, a conveyor system with white plastic guides and a black grid belt is shown, with bunches of purple grapes being processed. The overall image is in a desaturated, light grey tone, with the text and logo providing the primary visual elements.

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Extractiv

Commercial innovations in grape
and juice processing

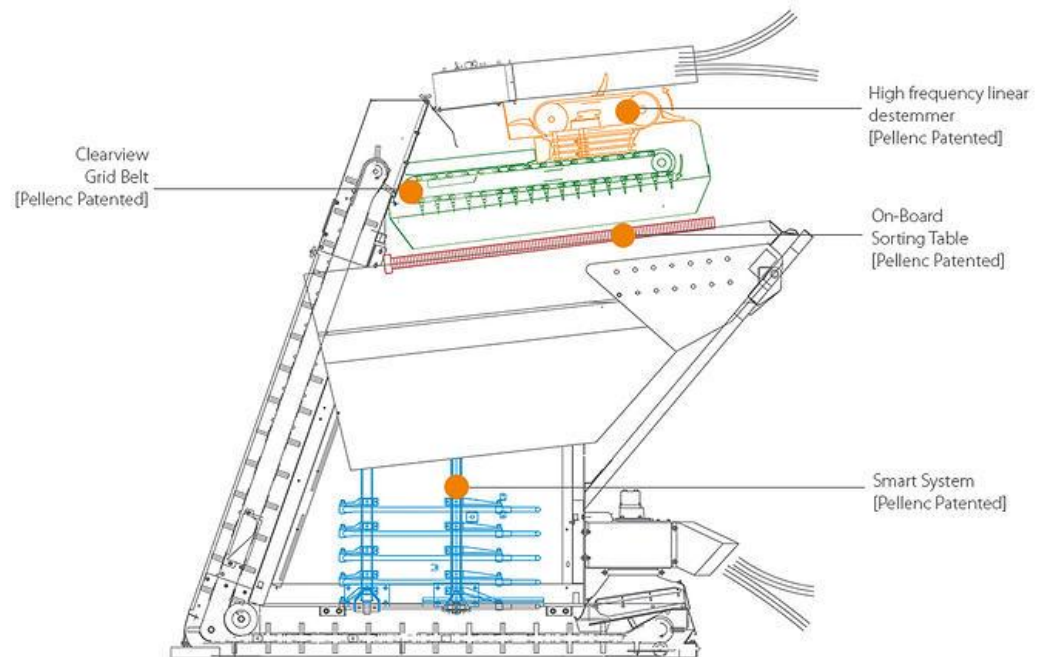
Selectiv Process

Selectiv'Process

On-Board - Harvester

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Selectiv' Process

Selectiv' Process On Board

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Selectiv' Process

On-Board - Harvester

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8090 SP Tow-Behind

- > High-frequency linear de-stemmer
- > Sorting table
- > Automatic ground tracking
- > Height stop
- > Sorter
- > 3,000L bins
- > 2 Poclain wheel motors
- > 360/70R 20 tyres



8490 600 LM SP

Suitable for high yield

- > 5 pairs of picking rods
- > 1 pair of post-detecting picking rods
- > 40 bottom-closing catch plates (2.62m)
- > Total bin capacity: 2,600L or 3,000L
- > Bin augers
- > Smart system with post detection
- > Selectiv' Process:
 - High-frequency linear de-stemmer
 - Roller sorting table
- > Centralised greasing



8590 600 GR SP

Suitable for intensive yield

- > 10 pairs of picking rods
- > 1 pair of post-detecting picking rods
- > 44 bottom-closing catch plates (2.86m)
- > Total bin capacity: 3,400 L
- > Bin augers
- > Smart system with post detection
- > Selectiv' Process:
 - High-frequency linear de-stemmer
 - Roller sorting table
- > Centralised greasing

Selectiv'Process

De-stemming Concept

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- Harvested fruit is conveyed onto Pellenc's patented 'clear-view' belt, allowing loose berries and juice to flow directly onto the sorting table.
- Material retained on belt moves through the high-frequency linear destemmer which effectively resonates berries from bunch stalks.
- Berries are then carried along with bare bunch stalks, petioles and MOG, onto the sorting table which consists of 2 sets of rollers – the first orients the petioles and stalks while the second creates gaps large enough for berries and juice to fall through. Unwanted material is then carried to the ejection chute at the front of the machine.



Selectiv' Process

Selectiv' Process Winery

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Selectiv'Process

Winery

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Selectiv'Process

Winery

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SP Winery S (Small)
Processes up to 4 tonnes per hour.

Destemming Modules: 1
Length: 2200mm
Width: 1100mm
Overall height: 1730-2230mm
Destemming frequency: 400-860 RPM
Rated power kW: 4.4



SP Winery M (Medium)
Processes 3 to 8 tonnes per hour.

Destemming Modules: 2
Length: 2850mm
Width: 1480mm
Overall height: 1770-2270mm
Destemming frequency: 400-860 RPM
Rated power kW: 5.2

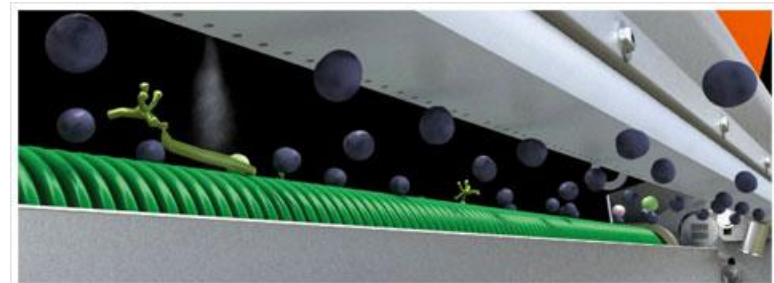
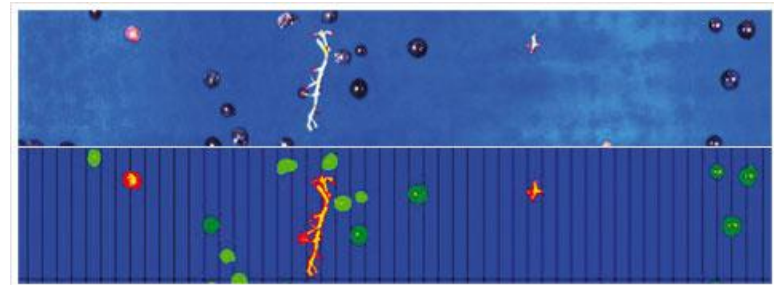
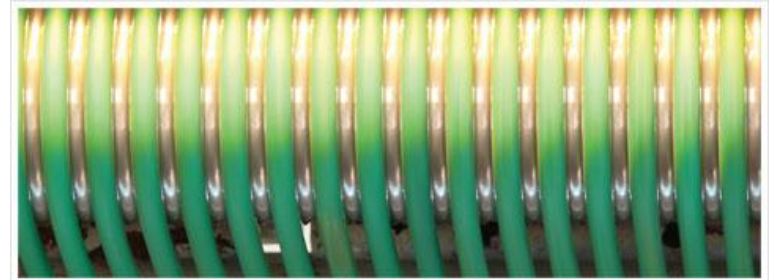


SP Winery L (Large)
Processes 7 to 15 tonnes per hour.

Destemming Modules: 4
Length: 2850mm
Width: 1880mm
Overall height: 1820-2320mm
Destemming frequency: 400-860 RPM
Rated power kW: 7.2

Vision Concept

- For an even higher level of sorting, destemmed berries can be sorted by artificial vision technology that has been evolved by Pellenc over more than 20 years.
- Berries are received by an inclined belt and a vibrating table which strains and distributes harvest evenly.
- A cord conveyor then channels the berries towards the artificial vision system.
- Berries are then carried underneath the camera which examines each item individually for shape and colour. Those that do not conform to the parameters designated by the operator are then removed by means of a pneumatic ejection system.

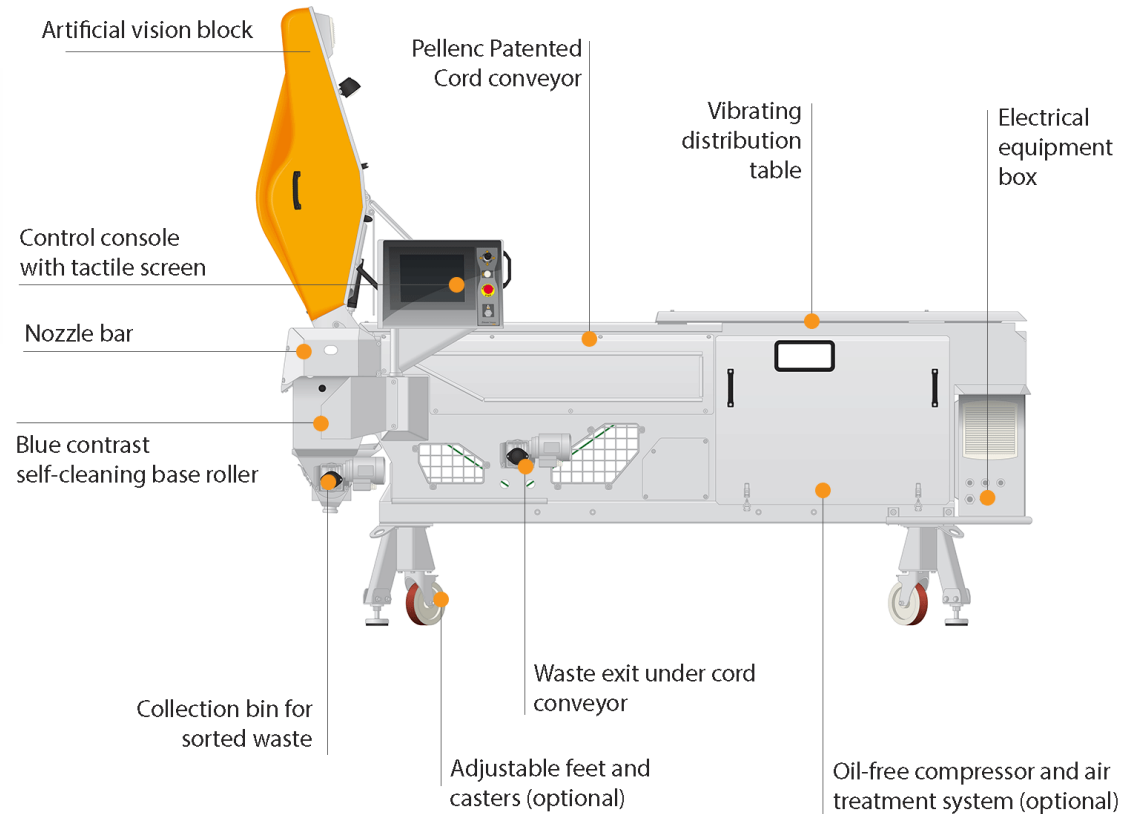


Selectiv'Process

Vision

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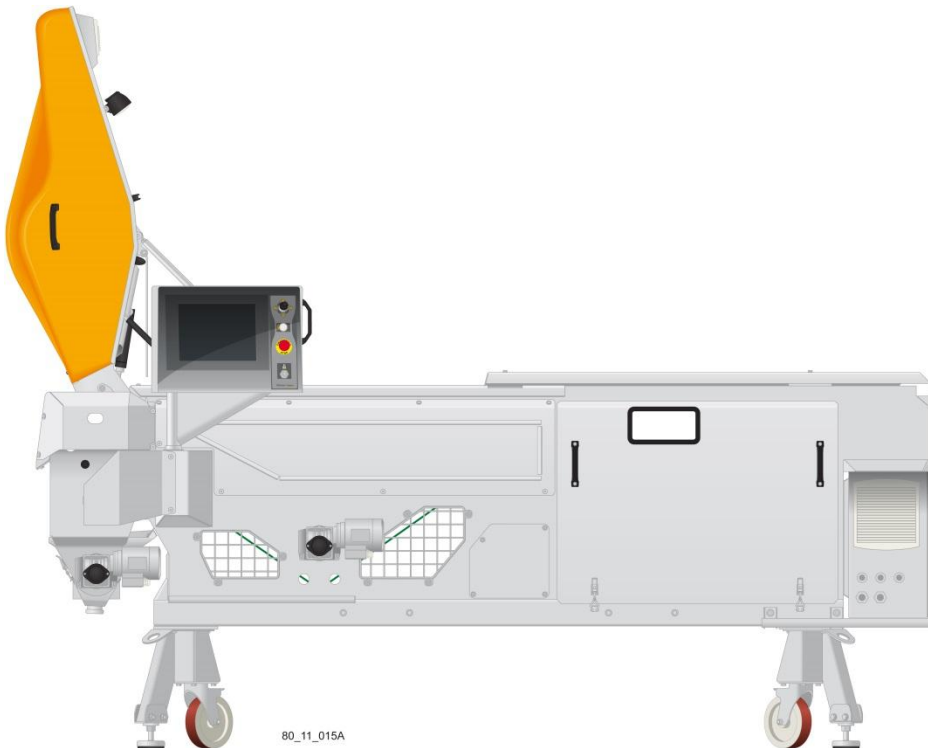
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Selectiv' Process

Vision

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Selectiv' Process Vision

Processes up to 12 tonnes per hour.

Length: 3530mm
Width: 1850mm
Overall height: 2150mm
Conveyor Belt Speed: 2.4 m/sec
Rated power kW: 6.7

Selectiv' Process

Selectiv' Process Vision

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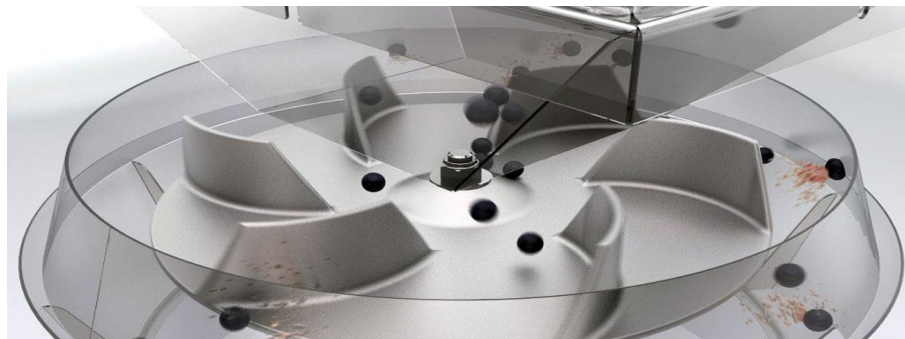
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Dynamic Crusher

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- This is a dynamic system which enables berries to be opened before fermentation and pressing, facilitating the extraction of juice with increased output and promoting the extraction of phenolic compounds and flavour precursors.
- Fitted with a fruit reception hopper, a crushing wheel and a fixed plate.
- Fruit is fed into the crushing wheel that transports the berries onto the fixed plate.
- Thanks to centrifugal force, berries are fully opened, significantly increasing the contact area between the juice and the skin. This results in a higher extraction of polyphenolic compounds and flavour precursors contained in the cells under the skin cuticles.



Extractiv'

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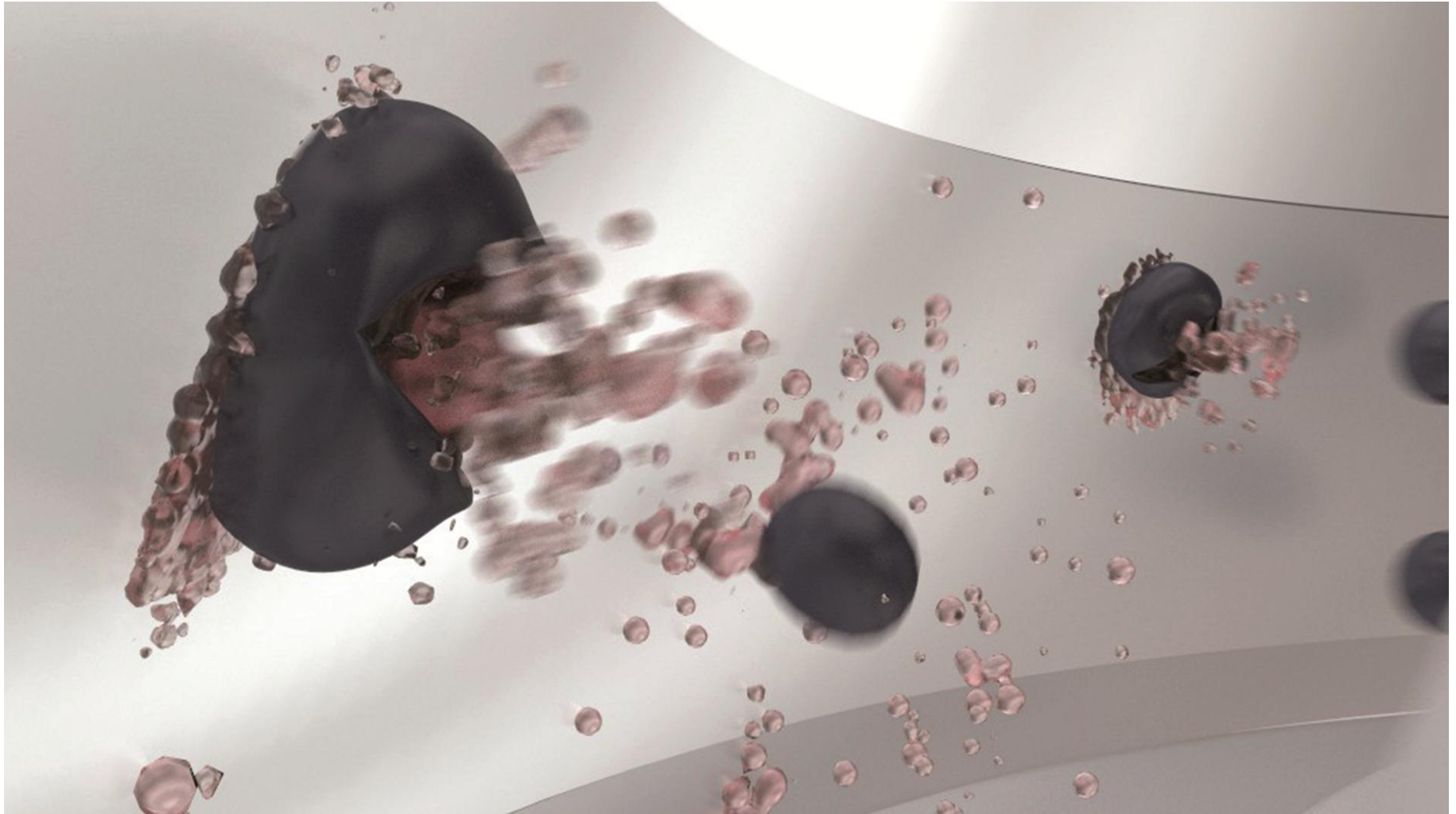
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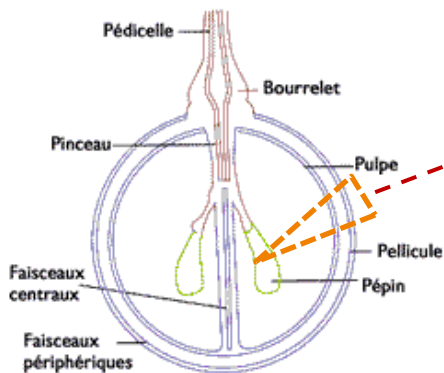
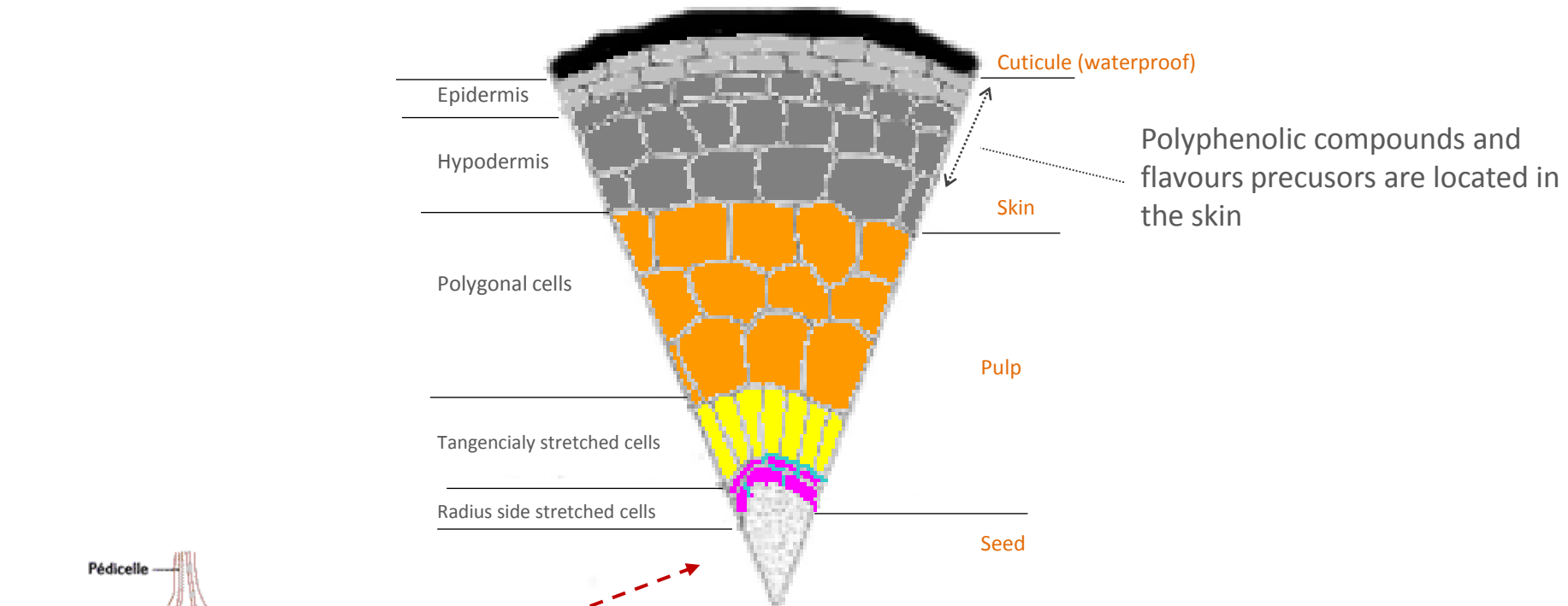
Open Berries

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- High contact surface area between juice and skin
- Easier access to the polyphenolic compounds



Berry opening allows higher contact area between juice and subcuticular cells
=> Increase in extraction of polyphenolic compounds (tannins, anthocyanines) and flavour precursors

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Crushing according to user specification

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Berries not crushed

Unripe berries

45%

70%

Open ripe berries

Intact seeds

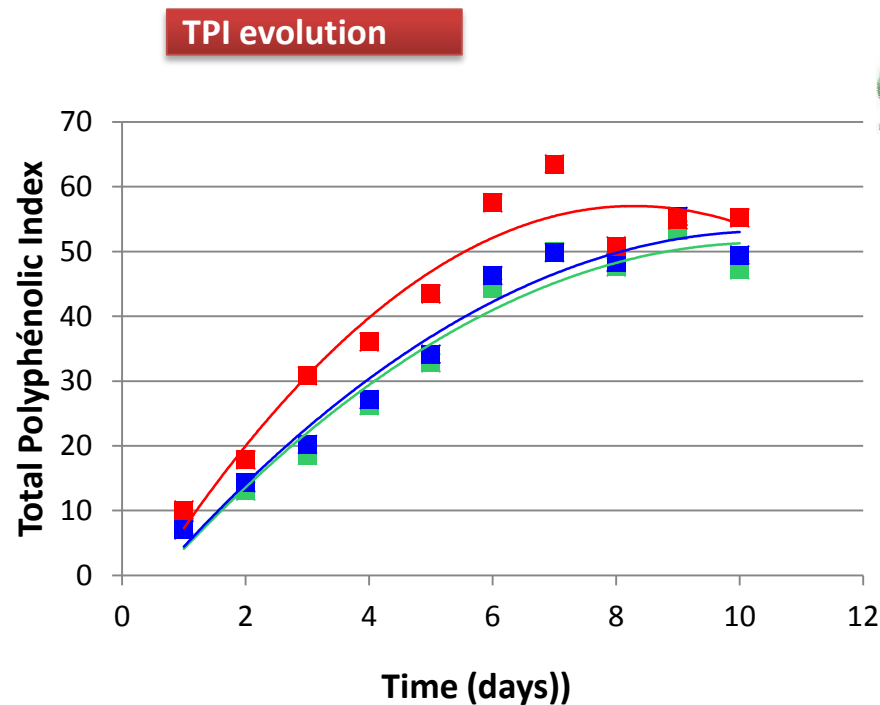
Merlot, 5t/h, % speed of the crushing wheel

Extractiv'

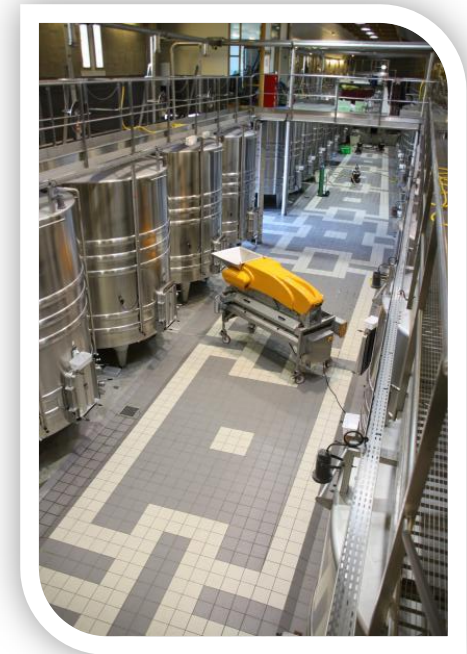
Faster Extraction Kinetics

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- Possibility of shorter maceration time
- Faster tank rotation

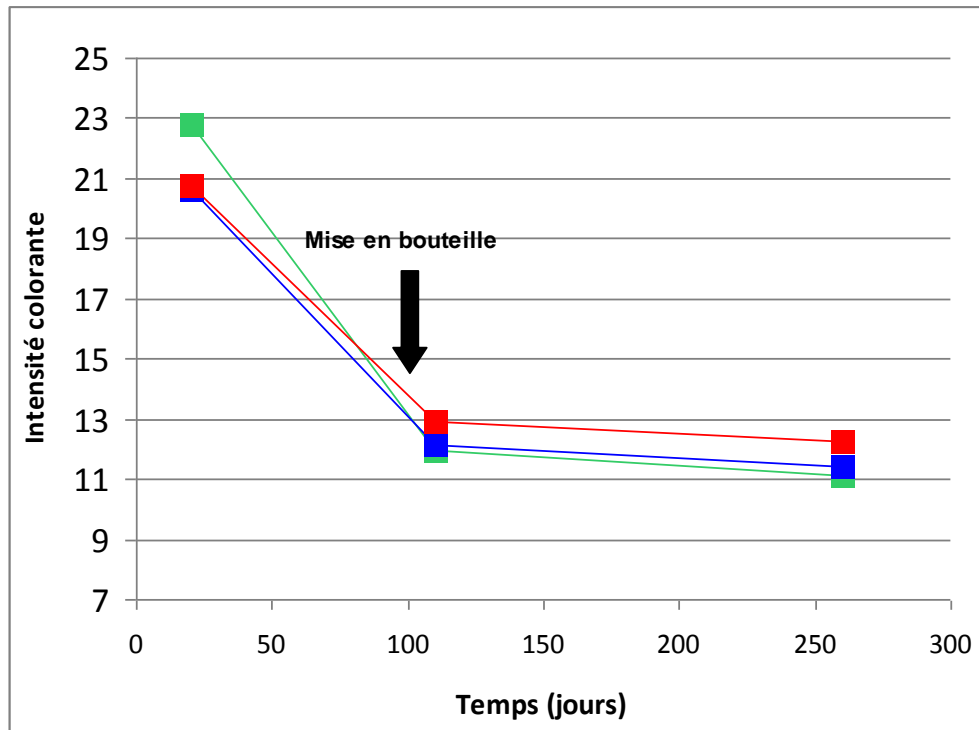


INRA
Institut National de la Recherche Agronomique



- Not crushed (destemmed harvest)
- Crusher with conical microtooth rollers
- Extractiv'

Carignan, 2010 Harvest



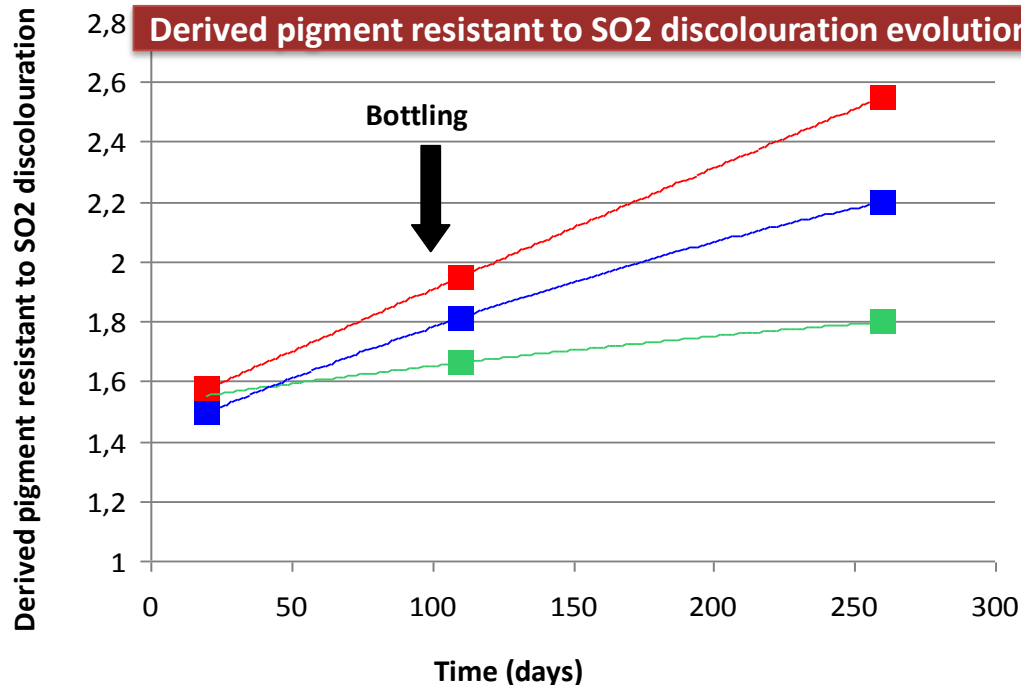
Colour Intensity (CI) evolution

- Better extraction of polyphenolic compounds during maceration.
- Colour stabilised
- CI higher after 5 months in bottle !

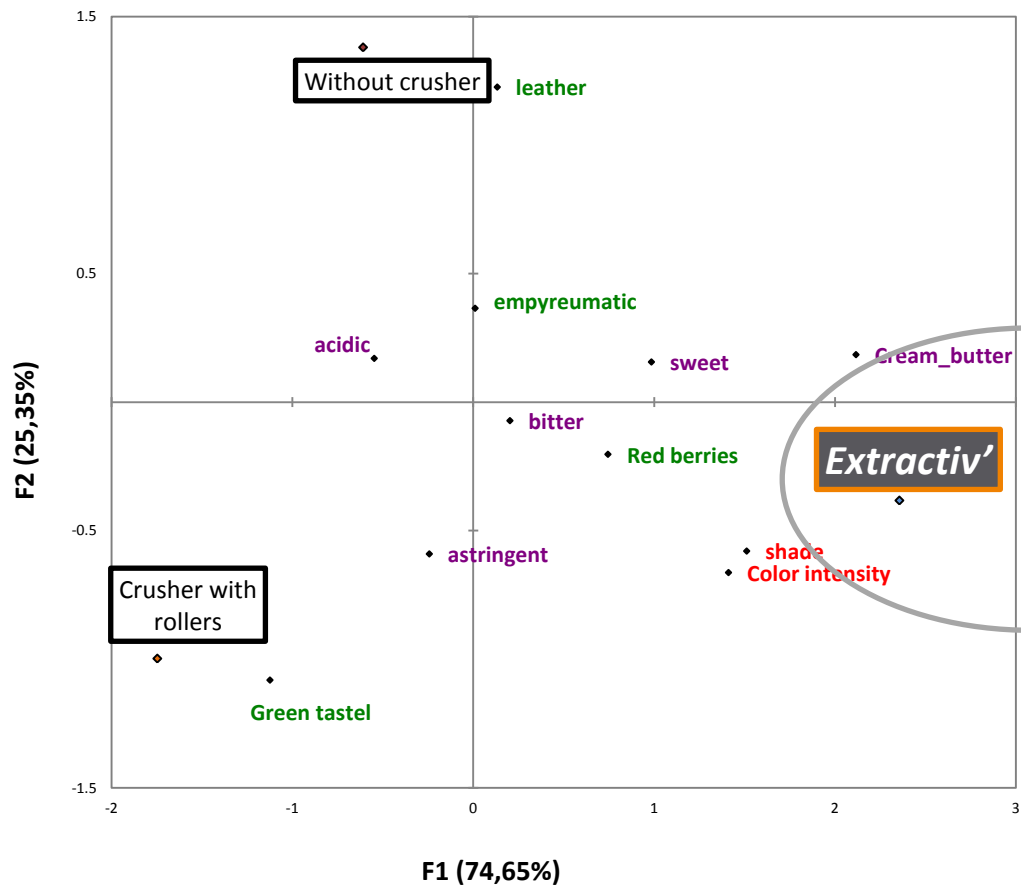


- Not crushed (destemmed harvest)
- Crusher with conical microtooth rollers
- Extractiv'

- Colour stabilised
- Reaction of anthocyanines with other components, including tannin-anthocyanine complexes
- Higher level of pigments resistant to discolouration by sulphites after 5 months in bottle
- The gap is increasingly in favour of the Extractiv'



- Not crushed (destemmed harvest)
- Crusher with conical microtooth rollers
- Extractiv'



Principal component analysis (PCA) of visual data (Red), flavour data (Purple) and aroma data (Green) of the wines produced by wine making in the liquid stage of the musts obtained after crushing by Pellenc Extractiv', crusher with conical microtooth roller or without crushing.

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Adjustment of crushing intensity

Handle for adjusting the wheel rotation speed to obtain desired crushing intensity.

Harvest reception



Sorted berries

Whole bunches



Crushing Wheel

Berries are projected against the conical wall of the crusher.



Opened Berries

Best extraction of juice and phenolic compounds.

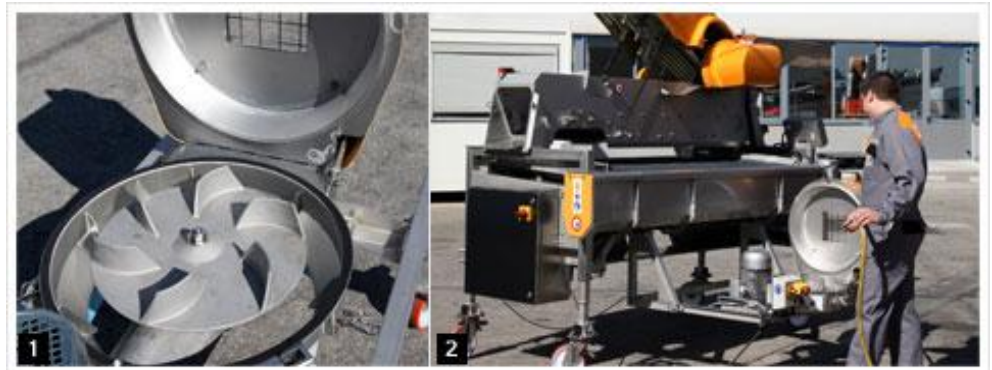
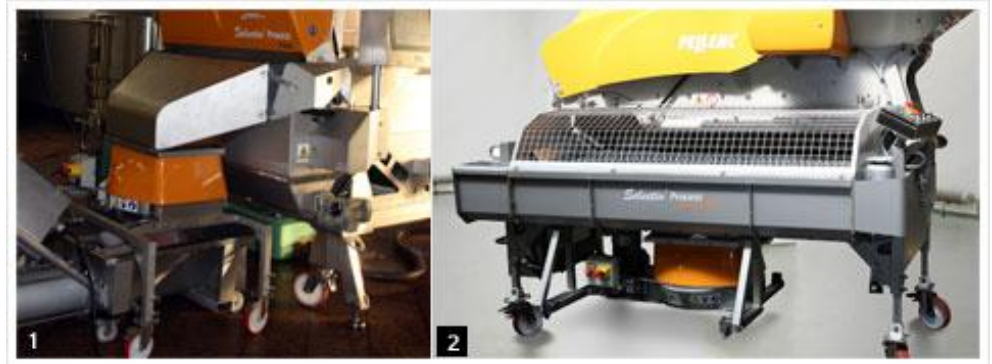


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**TROPHÉE
BRONZE
2012**

Extractiv'

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- Compact and able to fit into existing set-ups;
- Can process up to 24 tonnes per hour as it is a continuous system;
- Very simple, open machine, which facilitates cleaning;
- Easy to operate – the only adjustment is the speed of the wheel based on the ripeness of berries to be opened.



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Extractiv'

Processes up to 25 tonnes per hour.

Length: 960mm

Width: 390mm

Overall height: 615mm

Thank you for your attention

Any questions?

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.