

AGGLOTAP





SPARKLING



Tradittional 0+2



0+1



Agglomerated

STILL WINF



1+1



Agglomerated



FORTIS



FORTISMIX



FORTISWINE

AGGLOTAP

NEW TECHNOLOGIES



montebello

GRANULATED 3-7 mm

- Pressurized Steam system
- Temperature between 80 to 120 °C
- Reduction de TCA around 60 %
- **Density** control and **humidity** before and after the process.



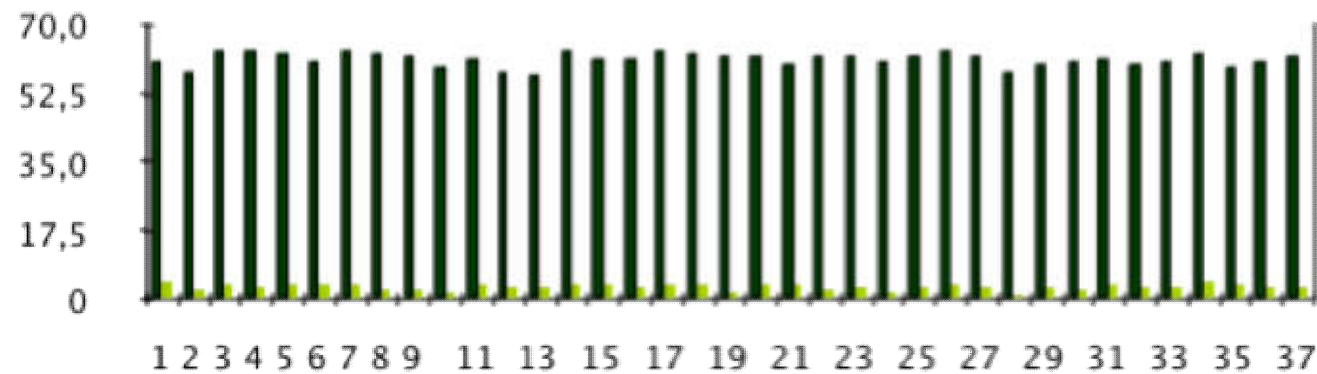
montebello

Granulated 3 to 7 mm



% Extraction

TCA Initial ng/L

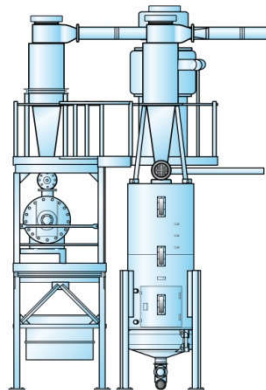


Source : internal data

montebello

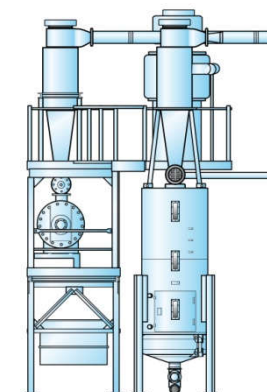
GRANULATED 1-2 mm

- Same performance as Montebello 3-7 with a new technology adapted to the granulated 1-2mm
- Vertical cascade process
- Transport auger adapted to grain size



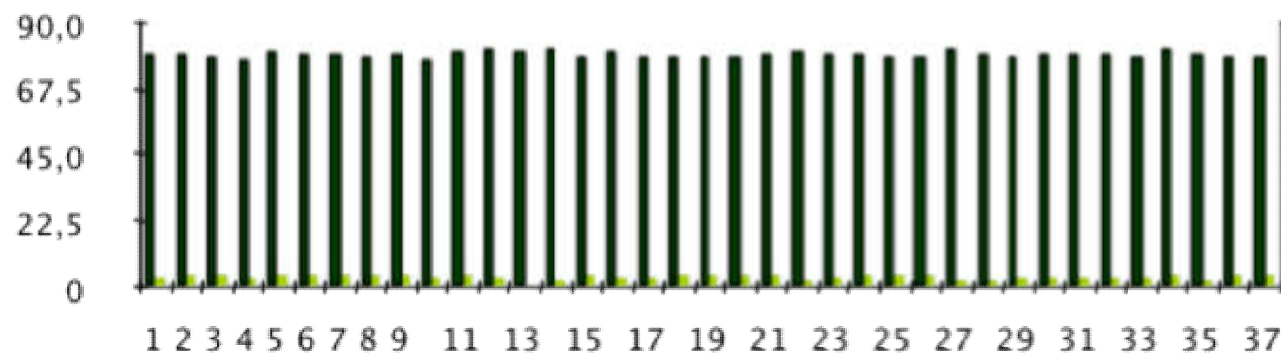
montebello

Granulated 1 to 2 mm



% Extraction

TCA initial ng/L



Source : internal data

montebello

	ASPECT	NOSE	MOUTH	RETRONOSE
BEFORE TREATMENT	Intense yellow	Very light cork wood walnut	Intense dryness Bitter	Medium cork
AFTER TREATMENT	Soft and bright yellow	Neutral Light wood Light walnut	Neutral Light bitter	Vanilla Light Almond



- Whitout co-solvent extraction ensures efficient extraction and allows working with finished corkstoppers with percentages greater than 70%.
- CO₂ circulation by pumping system that reaches 350 bar allowing treatment to 6000 Kg/h CO₂ .
- CO₂ full recovering by crystallization process.

Concepts supercritical fluid technology

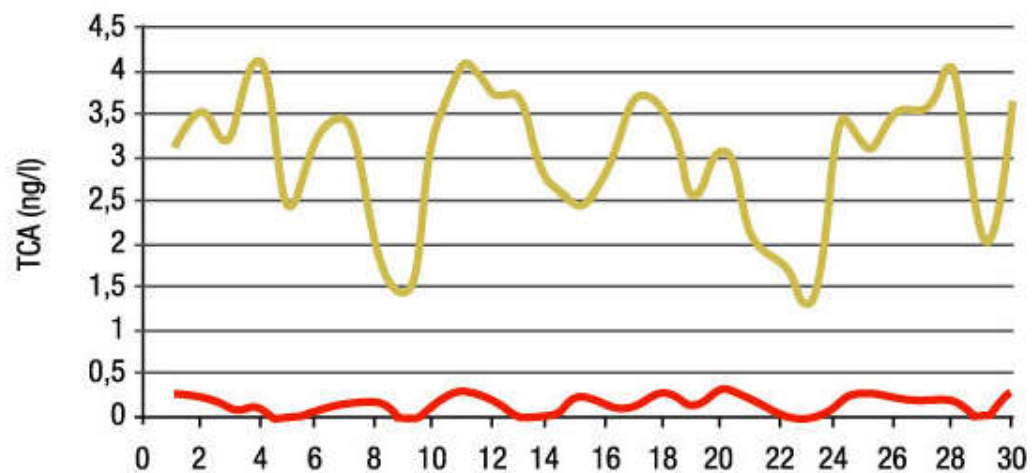
Conventional solvent extraction

- Low selectivity
- Solvent power difficult to modify
- Solvents harmful to the environment
- Difficulty to purify and recover the solvent

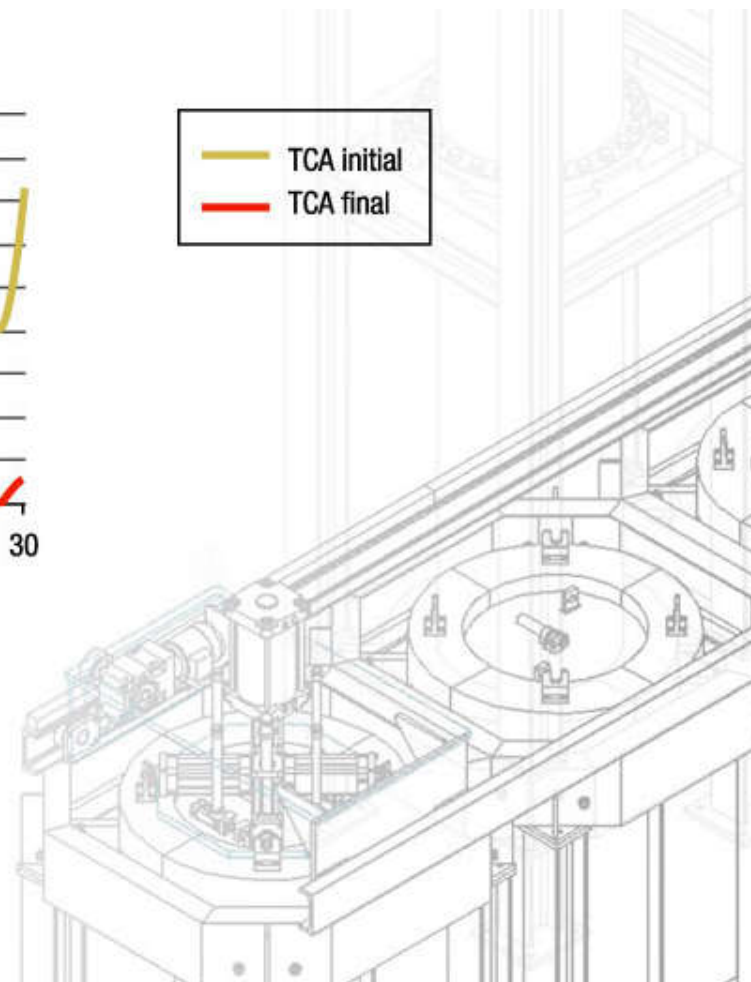
Extraction with CO₂ SC

- High selectivity
- Adjustable solvent power
- No harmful solvents to the environment
- Easy to purify: Flash system separation
- Extraction of higher quality product. High commercial value

Extraction of TCA with Supercritical CO₂



Source: Internal data



ANALYSIS OF A SAMPLE OF THOR PROCESS METHODOLOGY FOR IDENTIFICATION OF FLAVORS GC-O and GC-MS

IR DB5	IR DBWAX	Descriptor	Identification	FM%
1086	1853	Medicinal, phenol	2-Metoxiphenol (Guayacol)	83
1359	1799	Cork, humidity, closed	2,4,6-Tricloroanisol (TCA)	75
1095	2090	Skin, animal	m-/p- Crésol	53
1074	1430	Earth, pepper	3-Isopropil-2-metoxipirazina	51
1022	1619	Toast, Burn	2-Acetilpirazina	41
1261	1698	Anís	n.i.	33

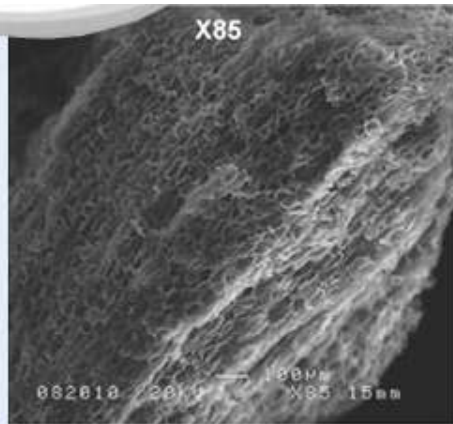
Source: Dra. Laura Culleré. Laboratory for Enology and Aroma analysis. - University of Zaragoza- SPAIN

	ASPECT	NOSE	MOUTH	RETRONOSE
BEFORE TREATMENT	Intense yellow	Very light cork Wood Walnut	Intense dryness Bitter	Medium cork
montebello	Soft and bright yellow	Neutral Light wood Light walnut	Neutral Light bitter	Vanilla Light Almond
Thor technology	Soft and bright yellow	Neutral Alcohol Light cookie Vanilla	Neutral Simple	Simple Alcohol

Source: Universitat Rovira i Virgili – Tarragona (SPAIN)

CELL STRUCTURE

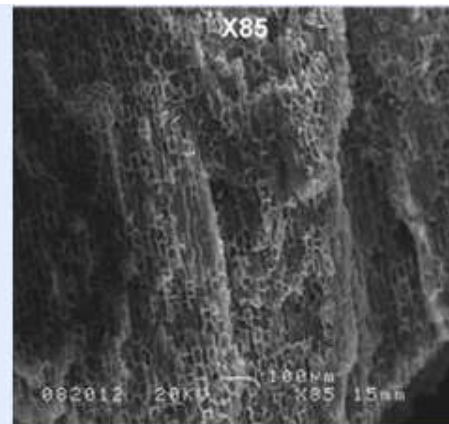
After CO₂



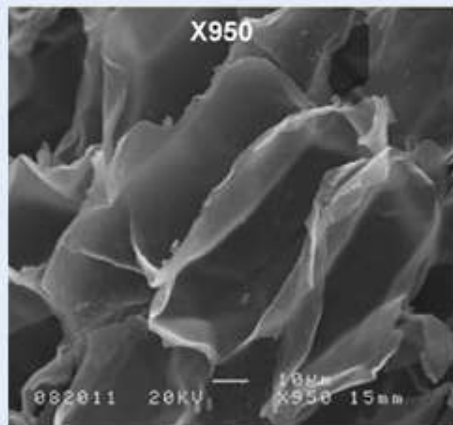
Suberin
remains intact



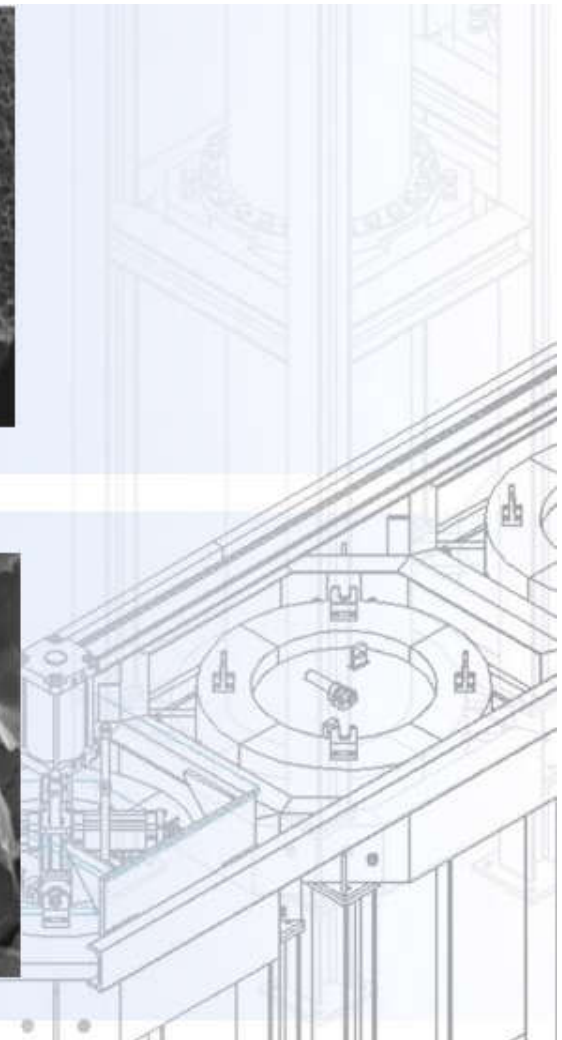
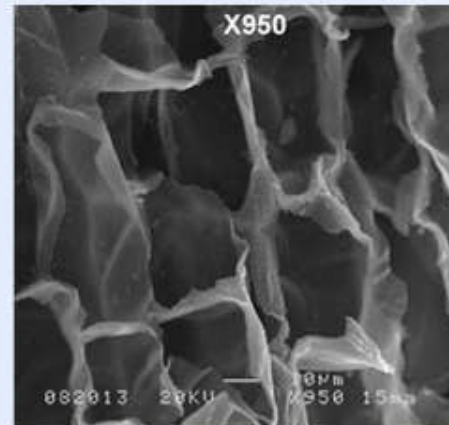
Before CO₂

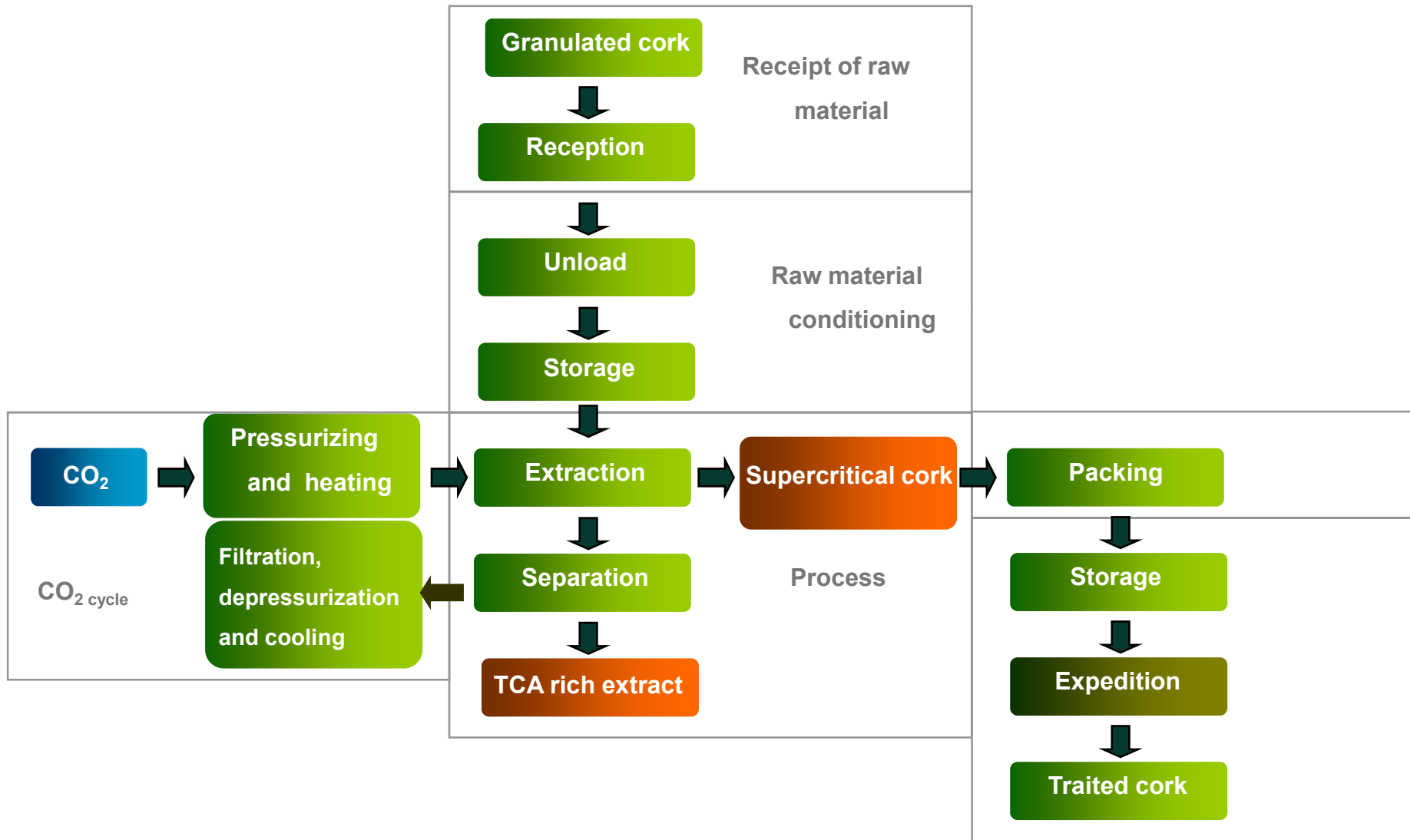


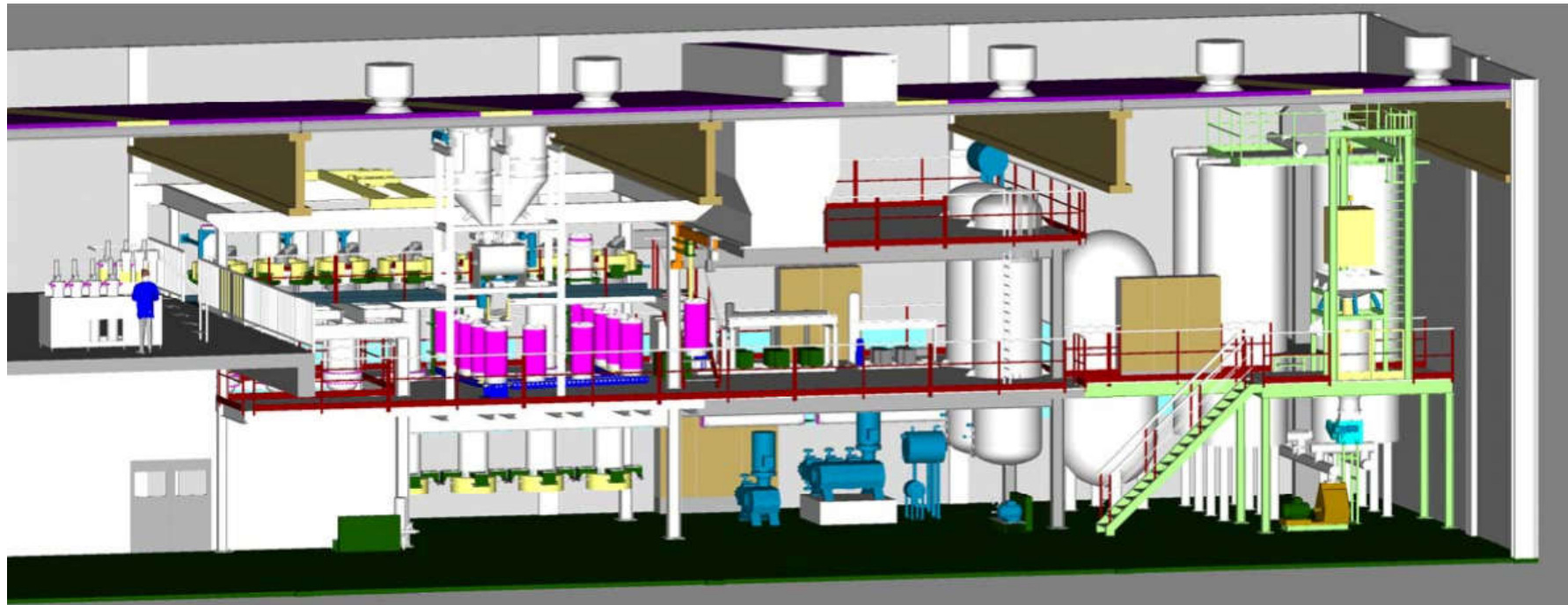
Thortechnology



Suberin
remains intact

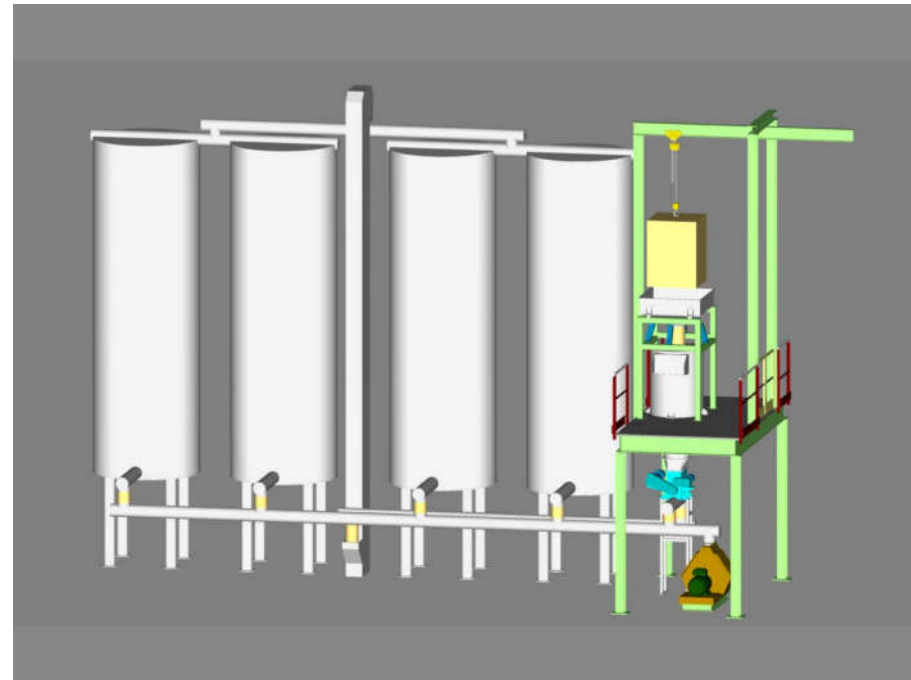
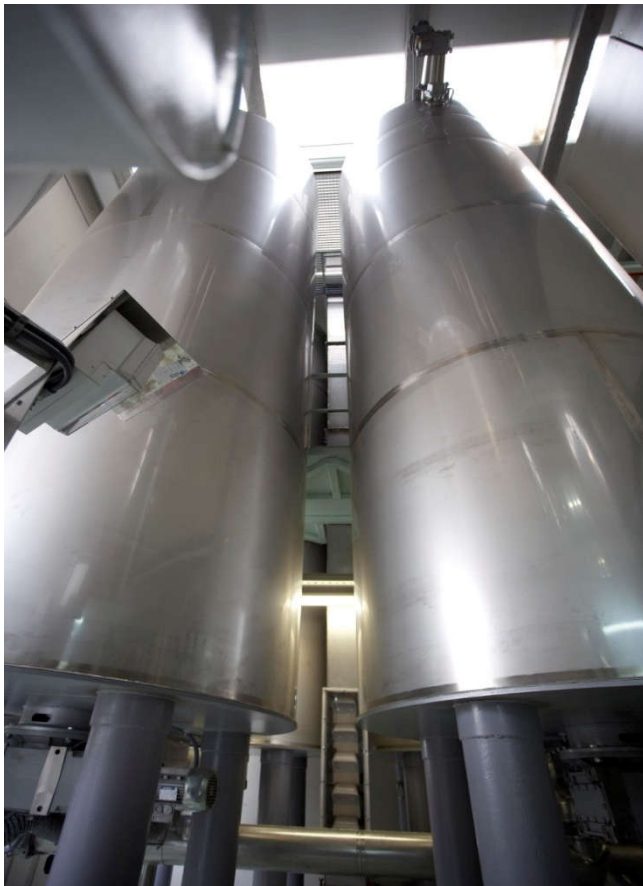




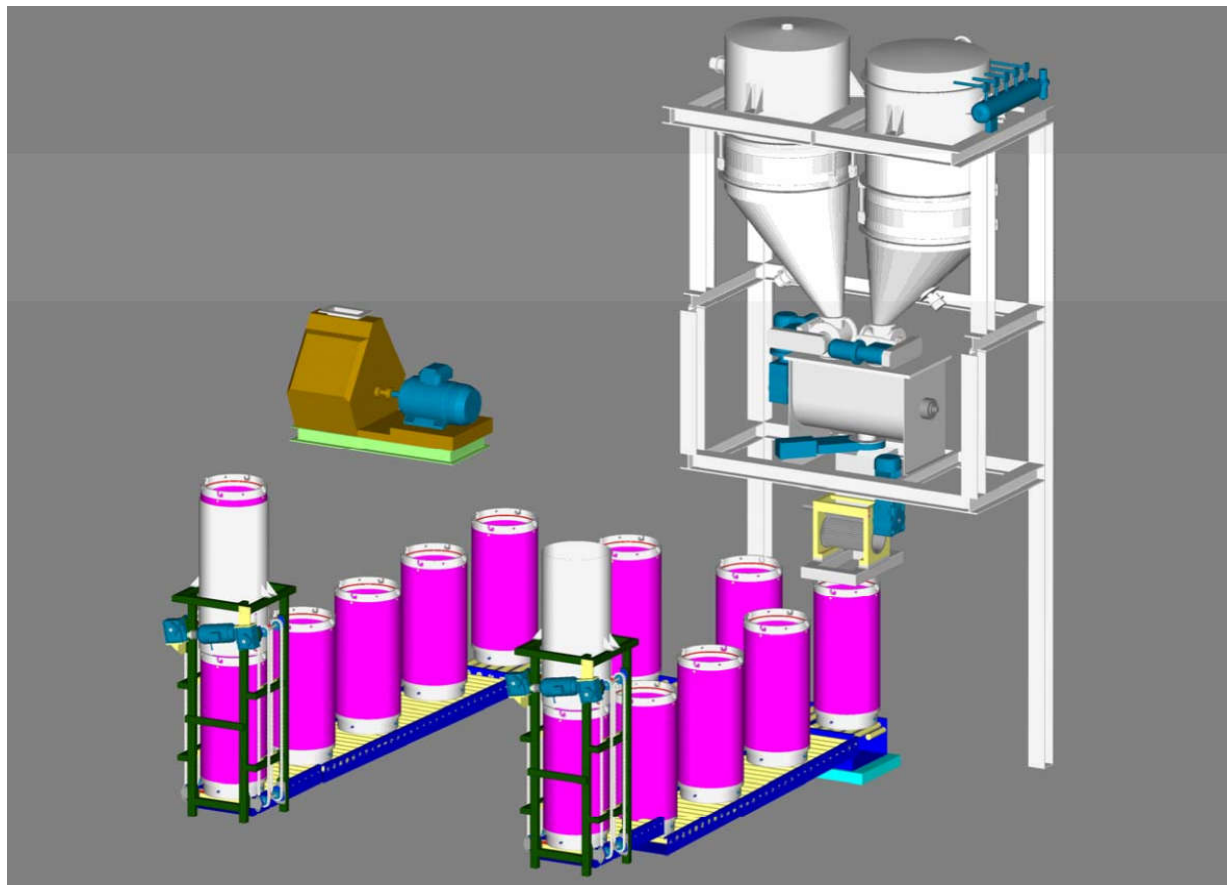




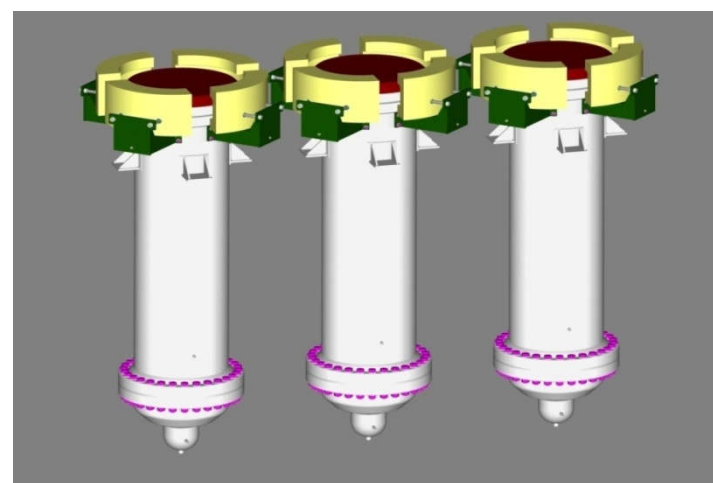
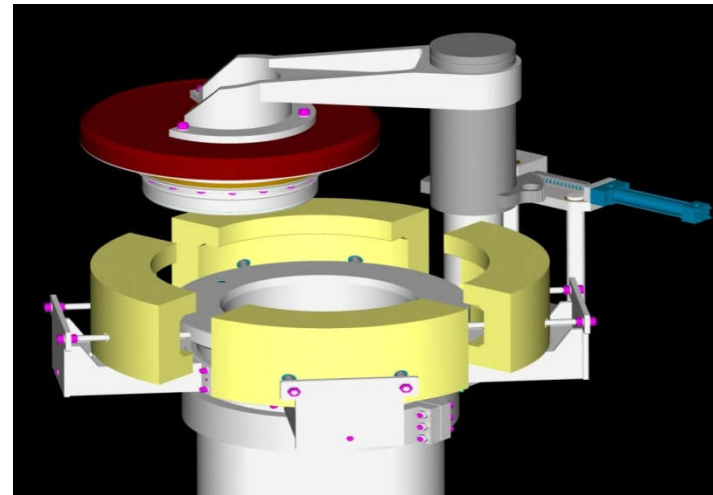
STORAGE



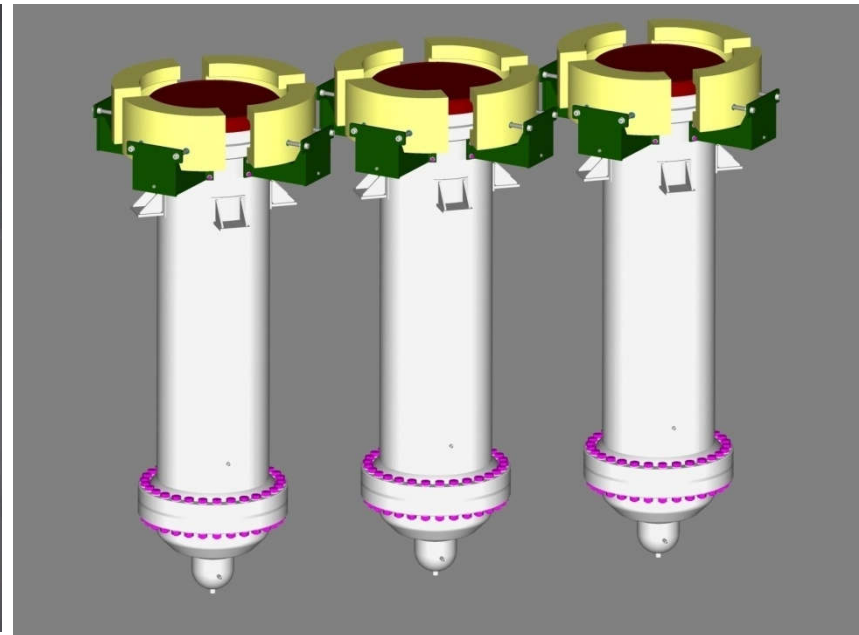
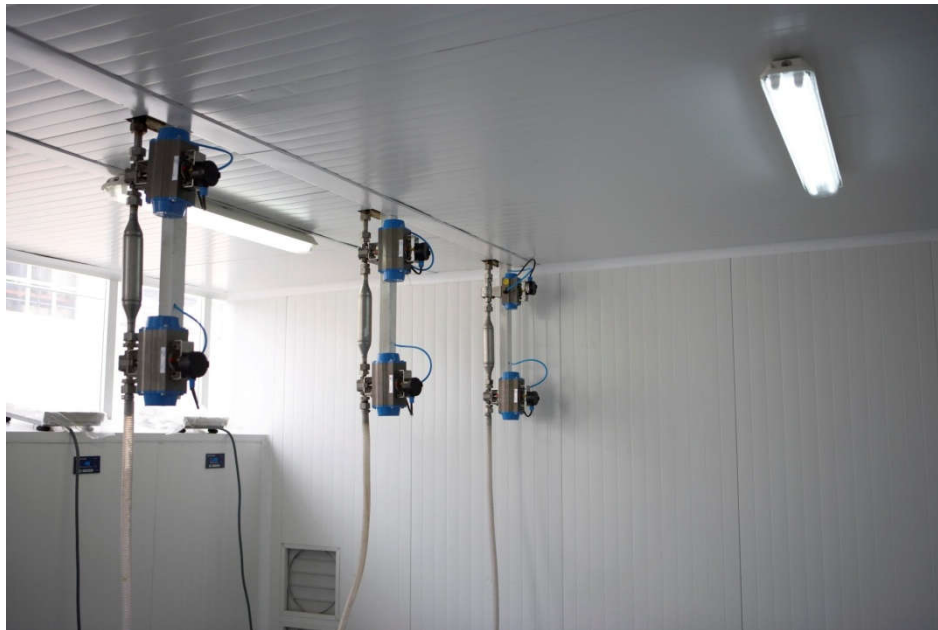
FILLED BASKETS

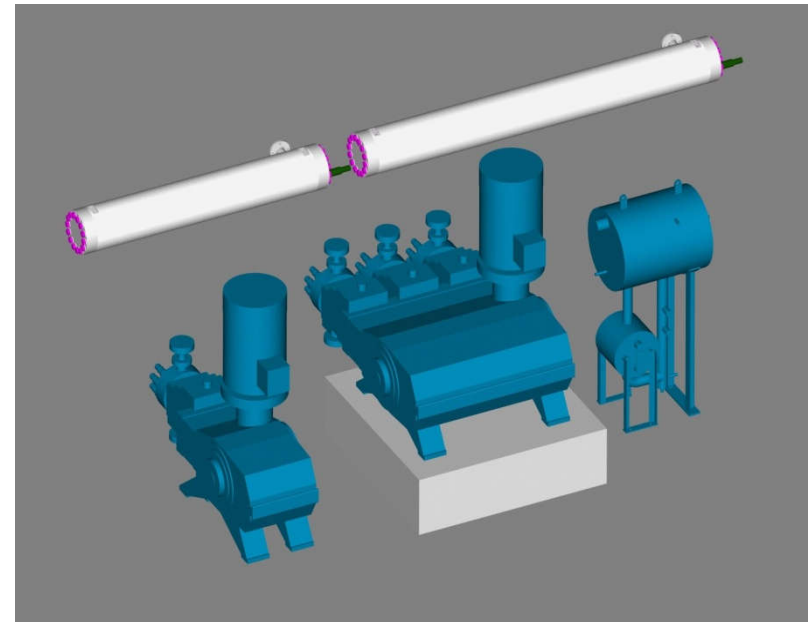


EXTRACTORS



TCA's SEPARATION





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