

Filtration and Beverage Treatment Products



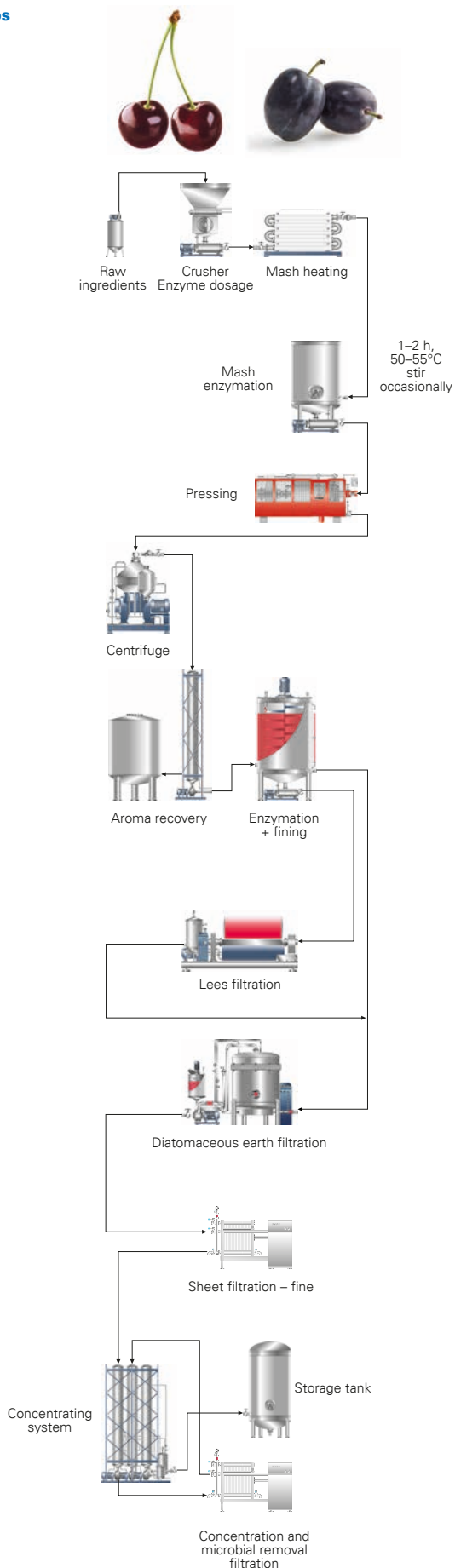
Fruit Juice and Fruit Wine Guide

EATON

Powering Business Worldwide

Fruit Juice Processing from Stone Fruit

Process steps



Production of concentrate from sour cherries, clear juice

Raw ingredients:

Ripe and sound, fresh or frozen fruit
Thawing of frozen fruit
Mash heating to 60–70°C
Mechanical stone removal, if required

Mash enzyme dosage:

Low pectin content eliminates mash enzymation and prevents instability of juices.

No mash maceration time.

Continuously fill the press to prevent stones from settling in the mash tank.

Juice extraction:

Using a press or decanter (only mash from fruit without stones). For belt presses increase thickness of non-destoned mash.

Pectin degradation: approx. 1–2 h at 50–55°C

Panzym® Pro Color enzyme: 20–50 ml/t or

Panzym BE XXL enzyme: 15–30 ml/t

For increased filterability: Panzym Flux enzyme: 10–30 ml/t
Check via alcohol test

Fining: 2–4 h at 50–55°C

SIHA PURANIT™/SIHA PURANIT UF fining agent: 500–1,000 g/t

Levasil® BF30 silica sol fining agent: 500–1,000 ml/t

Gelatine Fine Granules fining agent: 50–100 g/t

Plant protein as an alternative to gelatine:

SIHA® Pea Protein fining agent: 50–100 g/t

Lees filtration with

BECOLITE™ 5000 perlite

Dosage: 5–7 kg/m²

Diatomaceous earth filtration with

BECOGUR™ 200 diatomaceous earth (approx. 10%)

BECOGUR 3500 diatomaceous earth (approx. 90%)

Dosage: approx. 1–1.2 kg/t

Sheet filtration – fine with

BECO® KD 10 or BECOPAD® 350 depth filter sheets

Flow rate: 1,000 l/m²/h

Concentration with

simultaneous microbial removal and polishing filtration of semi-concentrate (35–40°Brix) at 70–80°C

with BECO SD 30 or BECOPAD 270 depth filter sheets

Flow rate: 500 l/m²/h

Production of concentrate from plums, clear juice

Raw ingredients:

Ripe and sound, fresh or frozen fruit
Thawing of frozen fruit
Mash heating to 50–55°C
Mechanical stone removal, if required

Mash enzyme dosage:

Panzym Pro Color enzyme: 100–150 ml/t or
Panzym BE XXL enzyme: 80–120 ml/t

Mash enzymation:

1–2 h at 50–55°C
Stir occasionally

Juice extraction:

Using a press or decanter (only mash from fruit without stones). For belt presses increase thickness of non-destoned mash.

Pectin degradation: approx. 1–2 h at 50–55°C

Panzym Pro Color enzyme: 50–80 ml/t or
Panzym BE XXL enzyme: 30–60 ml/t
For increased filterability: Panzym Flux enzyme: 10–30 ml/t
Check via alcohol test

Fining: 2–4 h at 50–55°C

SIHA PURANIT/SIHA PURANIT UF fining agent: 500 g/t
Levasil BF30 silica sol fining agent: 500–1,000 ml/t
Gelatine Fine Granules fining agent: 50–100 g/t
Plant protein as an alternative to gelatine:
SIHA Pea Protein fining agent: 50–100 g/t

Lees filtration with

BECOLITE 5000 perlite
Dosage: 5–7 kg/m²

Diatomaceous earth filtration with

BECOGUR 200 diatomaceous earth (approx. 10%)
BECOGUR 3500 diatomaceous earth (approx. 90%)
Dosage: approx. 1–1.2 kg/t

Sheet filtration – fine with

BECO KD 10 or BECOPAD 350 depth filter sheets
Flow rate: 1,000 l/m²/h

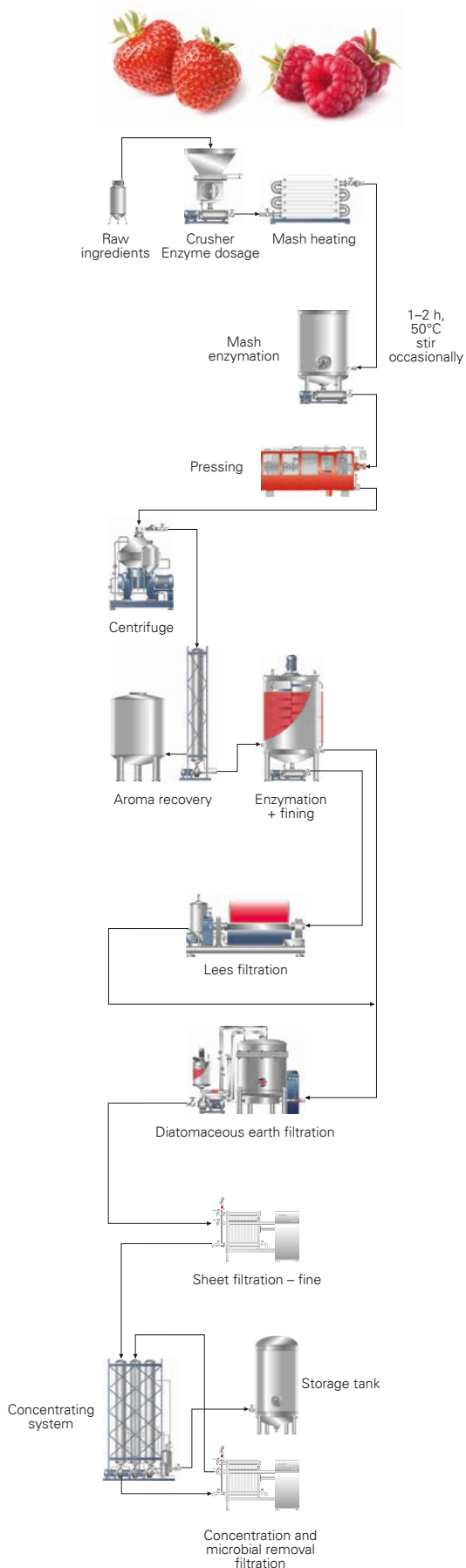
Concentration with

simultaneous microbial removal and polishing filtration of semi-concentrate (35–40°Brix) at 70–80°C with BECO SD 30 or BECOPAD 270 depth filter sheets
Flow rate: 500 l/m²/h



Fruit Juice Processing from Soft Fruit

Process steps



Production of concentrate from strawberries, clear juice

Raw ingredients:

Ripe and sound, fresh or frozen fruit
 Thawing of frozen fruit
 Mash heating to 50–55°C or
 cold enzyming at approx. 20°C to protect the color

Mash enzyme dosage:

Panzym Pro Color enzyme: 50–80 ml/t or
 Panzym BE XXL enzyme: 30–50 ml/t
 For frozen fruit, the dosages may have to be increased significantly.
 For cold enzyming, the dosages should be doubled.

Mash enzymation:

1–2 h at 50–55°C or
 2–4 h at 20°C
 Stir occasionally

Juice extraction:

Using a press or decanter

Pectin degradation:

approx. 1–2 h at 50–55°C
 Panzym Pro Color enzyme: 20–50 ml/t or
 Panzym BE XXL enzyme: 15–30 ml/t
 For increased filterability: Panzym Flux enzyme: 10–30 ml/t
 Check via alcohol test

Fining:

2–4 h at 50–55°C
 SIHA PURANIT/SIHA PURANIT UF fining agent: 500 g/t
 Levasil BF30 silica sol fining agent: 500–1,000 ml/t
 Gelatine Fine Granules fining agent: 50–100 g/t
 Plant protein as an alternative to gelatine:
 SIHA Pea Protein fining agent: 50–100 g/t

Lees filtration with

BECOLITE 5000 perlite
 Dosage: 5–7 kg/m²

Diatomaceous earth filtration with

BECOGUR 200 diatomaceous earth (approx. 10%)
 BECOGUR 3500 diatomaceous earth (approx. 90%)
 Dosage: approx. 1–1.2 kg/t

Sheet filtration – fine with

BECO KD 10 or BECOPAD 350 depth filter sheets
 Flow rate: 1,000 l/m²/h

Concentration with

simultaneous microbial removal and polishing filtration of
 semi-concentrate (35–40°Brix) at 70–80°C with
 BECO SD 30 or BECOPAD 270 depth filter sheets
 Flow rate: 500 l/m²/h

Production of concentrate from raspberries, clear juice

Raw ingredients:

Ripe and sound, fresh or frozen fruit
Thawing of frozen fruit
Mash heating to 50–55°C

Mash enzyme dosage:

Panzym Pro Color enzyme: 60–120 ml/t or
Panzym BE XXL enzyme: 50–100 ml/t
For frozen fruit, the dosages may have to be increased significantly.

Mash enzymation:

1–2 h at 50–55°C
Stir occasionally

Juice extraction:

Using a press or decanter

Pectin degradation:

approx. 1–2 h at 50–55°C
Panzym Pro Color enzyme: 20–50 ml/t or
Panzym BE XXL enzyme: 15–30 ml/t
For increased filterability: Panzym Flux enzyme: 10–30 ml/t
Check via alcohol test

Fining:

2–4 h at 50–55°C
SIHA PURANIT/SIHA PURANIT UF fining agent: 500 g/t
Levasil BF30 silica sol fining agent: 500–1,000 ml/t
Gelatine Fine Granules fining agent: 50–100 g/t
Plant protein as an alternative to gelatine:
SIHA Pea Protein fining agent: 50–100 g/t

Lees filtration with

BECOLITE 5000 perlite
Dosage: 5–7 kg/m²

Diatomaceous earth filtration with

BECOGUR 200 diatomaceous earth (approx. 10%)
BECOGUR 3500 diatomaceous earth (approx. 90%)
Dosage: approx. 1–1.2 kg/t

Sheet filtration – fine with

BECO KD 10 or BECOPAD 350 depth filter sheets
Flow rate: 1,000 l/m²/h

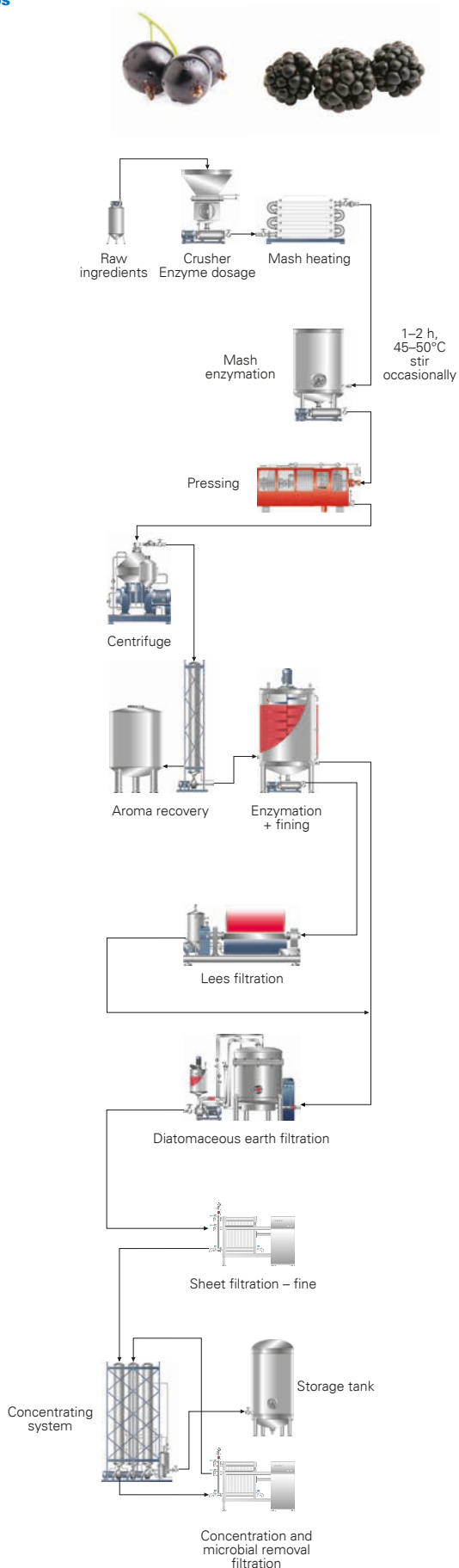
Concentration with

simultaneous microbial removal and polishing filtration of
semi-concentrate (35–40°Brix) at 70–80°C with
BECO SD 30 or BECOPAD 270 depth filter sheets
Flow rate: 500 l/m²/h



Fruit Juice Processing from Soft Fruit

Process steps



Production of concentrate from blackcurrants, clear juice

Raw ingredients:

Ripe and sound, fresh or frozen fruit

Thawing of frozen fruit

Mash heating to 45–50°C

Mash enzyme dosage:

Panzym Pro Color enzyme: 100–200 ml/t or

Panzym BE XXL enzyme: 80–160 ml/t

For frozen fruit, the dosages may have to be increased significantly.

Mash enzymation:

1–2 h at 45–50°C

Stir occasionally

Juice extraction:

Using a press or decanter

Pectin degradation:

approx. 1–2 h at 50–55°C

Panzym Pro Color enzyme: 30–60 ml/t or

Panzym BE XXL enzyme: 20–40 ml/t

For increased filterability: Panzym Flux enzyme: 10–30 ml/t

Check via alcohol test

Fining:

2–4 h at 50–55°C

SIHA PURANIT/SIHA PURANIT UF fining agent: 500–1,000 g/t

Levasil BF30 silica sol fining agent: 500–1,000 ml/t

Gelatine Fine Granules fining agent: 100–200 g/t

Plant protein as an alternative to gelatine:

SIHA Pea Protein fining agent: 100–200 g/t

Lees filtration with

BECOLITE 5000 perlite

Dosage: 5–7 kg/m²

Diatomaceous earth filtration with

BECOGUR 200 diatomaceous earth (approx. 10%)

BECOGUR 3500 diatomaceous earth (approx. 90%)

Dosage: approx. 1–1.2 kg/t

Sheet filtration – fine with

BECO KD 10 or BECOPAD 350 depth filter sheets

Flow rate: 1,000 l/m²/h

Concentration with

simultaneous microbial removal and polishing filtration of

semi-concentrate (35–40°Brix) at 70–80°C with

BECO SD 30 or BECOPAD 270 depth filter sheets

Flow rate: 500 l/m²/h

Production of concentrate from blackberries, clear juice

Raw ingredients:

Ripe and sound, fresh or frozen fruit
Thawing of frozen fruit
Mash heating to 50–55°C

Mash enzyme dosage:

Panzym Pro Color enzyme: 80–160 ml/t or
Panzym BE XXL enzyme: 60–120 ml/t
For frozen fruit, the dosages may have to be increased significantly.

Mash enzymation:

1–2 h at 50–55°C
Stir occasionally

Juice extraction:

Using a press or decanter

Pectin degradation:

approx. 1–2 h at 50–55°C
Panzym Pro Color enzyme: 20–50 ml/t or
Panzym BE XXL enzyme: 15–30 ml/t
For increased filterability: Panzym Flux enzyme: 10–30 ml/t
Check via alcohol test

Fining:

2–4 h at 50–55°C
SIHA PURANIT/SIHA PURANIT UF fining agent: 500–1,000 g/t
Levasil BF30 silica sol fining agent: 500–1,000 ml/t
Gelatine Fine Granules fining agent: 100–200 g/t
Plant protein as an alternative to gelatine:
SIHA Pea Protein fining agent: 100–200 g/t

Lees filtration with

BECOLITE 5000 perlite
Dosage: 5–7 kg/m²

Diatomaceous earth filtration with

BECOGUR 200 diatomaceous earth (approx. 10%)
BECOGUR 3500 diatomaceous earth (approx. 90%)
Dosage: approx. 1–1.2 kg/t

Sheet filtration – fine with

BECO KD 10 or BECOPAD 350 depth filter sheets
Flow rate: 1,000 l/m²/h

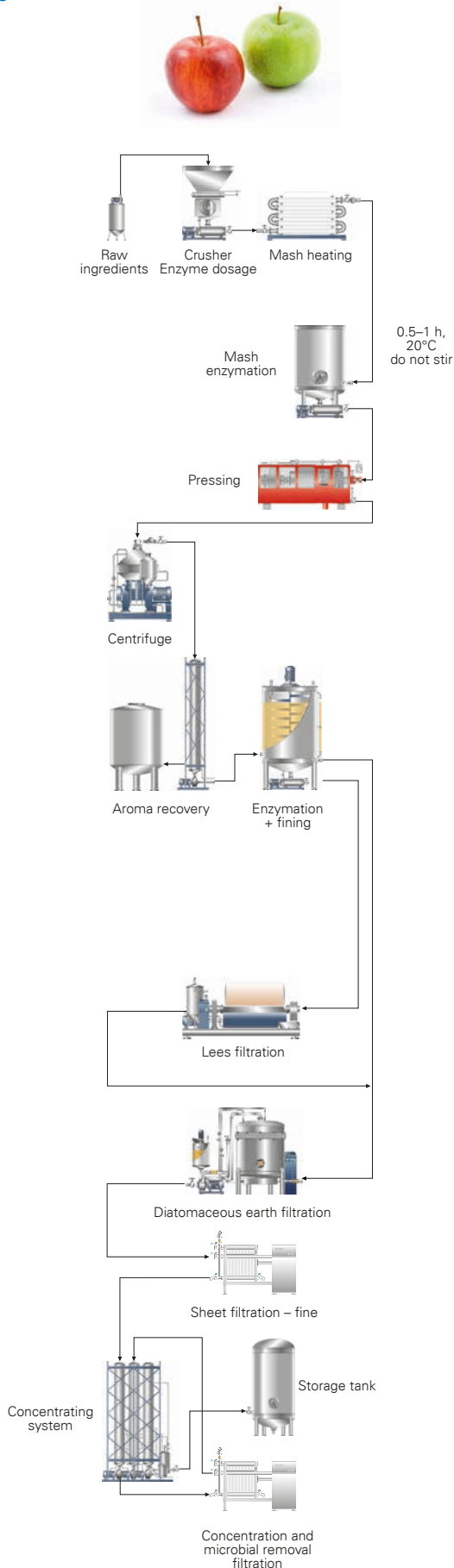
Concentration with

simultaneous microbial removal and polishing filtration of semi-concentrate (35–40°Brix) at 70–80°C with BECO SD 30 or BECOPAD 270 depth filter sheets
Flow rate: 500 l/m²/h



AJC and Fruit Juice Processing from Pomaceous Fruit

Process steps



Production of AJC with hot clarification and sterile filtration

Raw ingredients:
Ripe, sound, washed

Mash enzyme dosage:
Panzym YieldMASH XXL enzyme: 50–70 ml/t or
Panzym First Yield enzyme: 70–100 ml/t

Mash enzymation:
At approx. 20°C without stirring
Bucher press: 0.5–1 h
Belt press: 1 h
Decanter: 1 h

Juice extraction:
With possible secondary extraction
pomace/water ratio = 1:0.5–1

Starch degradation: approx. 1 h at 50–55°C
Panzym HT 300 enzyme: 20–60 ml/t or
Panzym AG XXL enzyme: 10–30 ml/t
Check via iodine test
Pectin degradation: approx. 1 h at 50–55°C
Panzym Pro Clear enzyme: 10–30 ml/t or
Panzym XXL enzyme: 10–30 ml/t
For increased filterability: Panzym Flux enzyme: 10–30 ml/t
Check via alcohol test
Fining: 2–4 h at 50–55°C
SIHA PURANIT/SIHA PURANIT UF fining agent: 1,000 g/t
Levasil BF30 silica sol fining agent: 500–1,000 ml/t
Gelatine Fine Granules fining agent: 100–200 g/t
Plant protein as an alternative to gelatine:
SIHA Pea Protein fining agent: 100–200 g/t

Lees filtration with
BECOLITE 5000 perlite
Dosage: 5–7 kg/m²

Diatomaceous earth filtration with
BECOGUR 200 diatomaceous earth (approx. 10%)
BECOGUR 3500 diatomaceous earth (approx. 90%)
Dosage: approx. 1–1.2 kg/t

Sheet filtration – fine with
BECO KDS 12 or BECOPAD 350 depth filter sheets
Flow rate: 1,000 l/m²/h

Alternative: Ultra filtration (UF), if necessary with following
sterile filtration (ACB/TAB) with BECO PROTECT® CS 115 0.2 µm
as pre-filter and BECO MEMBRAN PS Pure 0.2 µm
as final filter cartridges

Concentration with
simultaneous microbial removal and polishing filtration of
semi-concentrate (35–40°Brix) at 70–80°C with
BECO SD 30 or BECOPAD 270 depth filter sheets
Flow rate: 500 l/m²/h

Production of clear apple juice with cold clarification

Raw ingredients:

Ripe, sound, washed

Mash enzyme dosage:

Panzym YieldMASH XXL enzyme: 50–70 ml/t or
Panzym First Yield enzyme: 70–100 ml/t

Mash enzymation:

At approx. 20°C without stirring
Bucher press: 0.5–1 h
Belt press: 1 h
Decanter: 1 h

Juice extraction:

With possible secondary extraction
pomace/water ratio = 1:0.5–1

Without previous aroma recovery

Starch degradation:

approx. 4 h at approx. 20°C
Panzym F2 enzyme: 50–150 ml/t
Check via iodine test

Pectin degradation:

approx. 4 h at approx. 20°C
Panzym Pro Clear enzyme: 10–30 ml/t or
Panzym XXL enzyme: 10–30 ml/t
For increased filterability: Panzym Flux enzyme: 10–30 ml/t
Check via alcohol test

Fining:

2–4 h at 50–55°C or 4–8 h at approx. 20°C
SIHA PURANIT/SIHA PURANIT UF fining agent: 500–1,000 g/t
Levasil BF30 silica sol fining agent: 500–1,000 ml/t
Gelatine Fine Granules fining agent: 100–200 g/t
Plant protein as an alternative to gelatine:
SIHA Pea Protein fining agent: 100–200 g/t

Lees filtration with

BECOLITE 5000 perlite
Dosage: 5–7 kg/m²

Diatomaceous earth filtration with

BECOGUR 200 diatomaceous earth (approx. 10%)
BECOGUR 3500 diatomaceous earth (approx. 90%)
Dosage: approx. 1–1.2 kg/t

Sheet filtration – fine with

BECO KDS 12 or BECOPAD 350 depth filter sheets
Flow rate: 1,000 l/m²/h

Alternative: Ultra filtration (UF), if necessary with following
sterile filtration (ACB/TAB) with BECO PROTECT CS 115 0.2 µm
as pre-filter and BECO MEMBRAN PS Pure 0.2 µm
as final filter cartridges

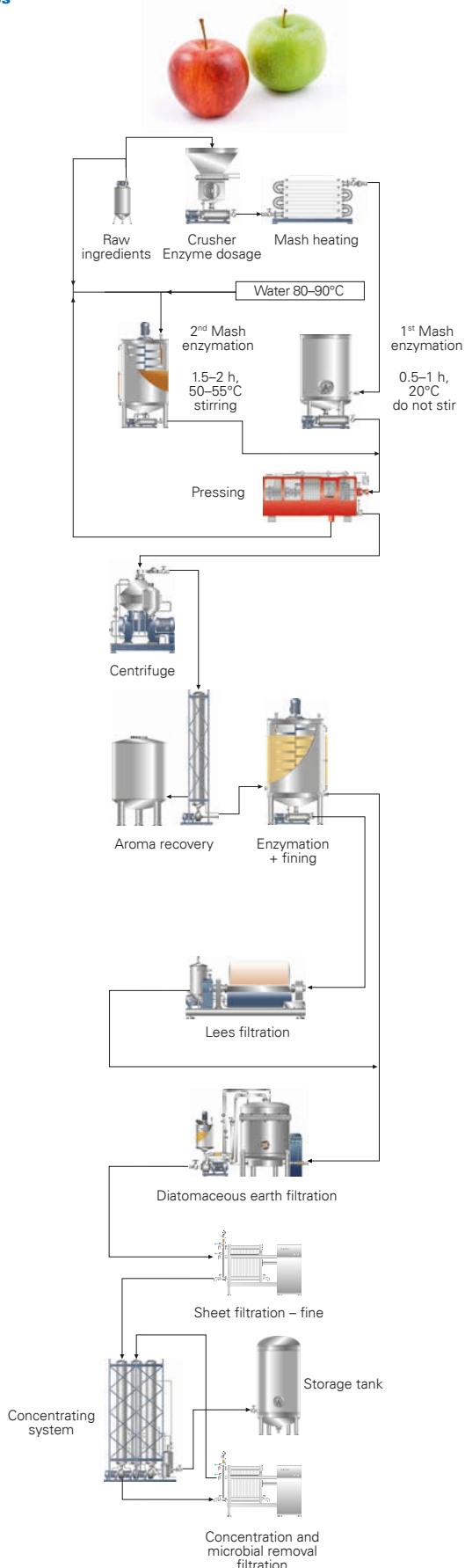
Particle filtration before bottling with

BECO PROTECT PG depth filter cartridges (5 µm)
Flow rate: 800 l/h/30" filter cartridge
Storage or bottling



Mash Enzymation and Fruit Juice Processing from Pomaceous Fruit

Process steps



Yield increase through 2nd mash enzymation

Raw ingredients:

1 part pomace from 1st pressing
+ 0.6–1 part (depending on first yield from 60–80%)
Demineralized water at 80–90°C

Mash enzyme dosage, depending on first yield:

Panzym Second Yield enzyme
a) 80% yield: 250–500 ml/t pomace
b) 70% yield: 160–380 ml/t pomace
c) 60% yield: 120–240 ml/t pomace

2nd mash enzymation tenure:

1.5–2 h at 50–55°C
With vigorous stirring

Juice extraction:

Using a press or decanter
possibly followed by blending of 1st juice and 2nd juice

Starch degradation:

approx. 1 h at 50–55°C
Panzym HT 300 enzyme: 20–60 ml/t or
Panzym AG XXL enzyme: 10–30 ml/t
Check via iodine test

Pectin degradation:

approx. 1 h at 50–55°C
Panzym Pro Clear enzyme: 10–30 ml/t or
Panzym XXL enzyme: 10–30 ml/t
For increased filterability: Panzym Flux enzyme: 10–30 ml/t
Check via alcohol test

Fining:

2–4 h at 50–55°C
SIHA PURANIT/SIHA PURANIT UF fining agent: 1,000 g/t
Levasil BF30 silica sol fining agent: 500–1,000 ml/t
Gelatine Fine Granules fining agent: 100–200 g/t
Plant protein as an alternative to gelatine:
SIHA Pea Protein fining agent: 100–200 g/t

Lees filtration with

BECOLITE 5000 perlite
Dosage: 5–7 kg/m²

Diatomaceous earth filtration with

BECOGUR 200 diatomaceous earth (approx. 10%)
BECOGUR 3500 diatomaceous earth (approx. 90%)
Dosage: approx. 1–1.2 kg/t

Sheet filtration – fine with

BECO KDS 12 or BECOPAD 350 depth filter sheets
Flow rate: 1,000 l/m²/h

Alternative: Ultra filtration (UF), if necessary with following
sterile filtration (ACB/TAB) with BECO PROTECT CS 115 0.2 µm
as pre-filter and BECO MEMBRAN PS Pure 0.2 µm
as final filter cartridges

Concentration with

simultaneous microbial removal and polishing filtration of
semi-concentrate (35–40°Brix) at 70–80°C with
BECO SD 30 or BECOPAD 270 depth filter sheets
Flow rate: 500 l/m²/h

Production of naturally cloudy apple juice

Raw ingredients:

Fully ripe (low starch content), sound and washed

Mash enzyme dosage:

Panzym YieldMASH XXL enzyme: 30–50 ml/t or
Panzym First Yield enzyme: 40–60 ml/t

1st Mash enzymation:

0.5–1 h at approx. 20°C
Without stirring

Juice extraction:

Using a press or decanter

Vitamin C dosage: 200–400 g/t *
directly into the buffer tank

Removal of instable solids via centrifuge

Early pasteurization without long intermediate storage to prevent solid loss of stability through enzymatic activity and fermentation.

Storage or filling:

If no centrifuge was used for the removal of instable solids, the juice should be drawn off the coarse unfiltered sediment in the storage tank prior to bottling.

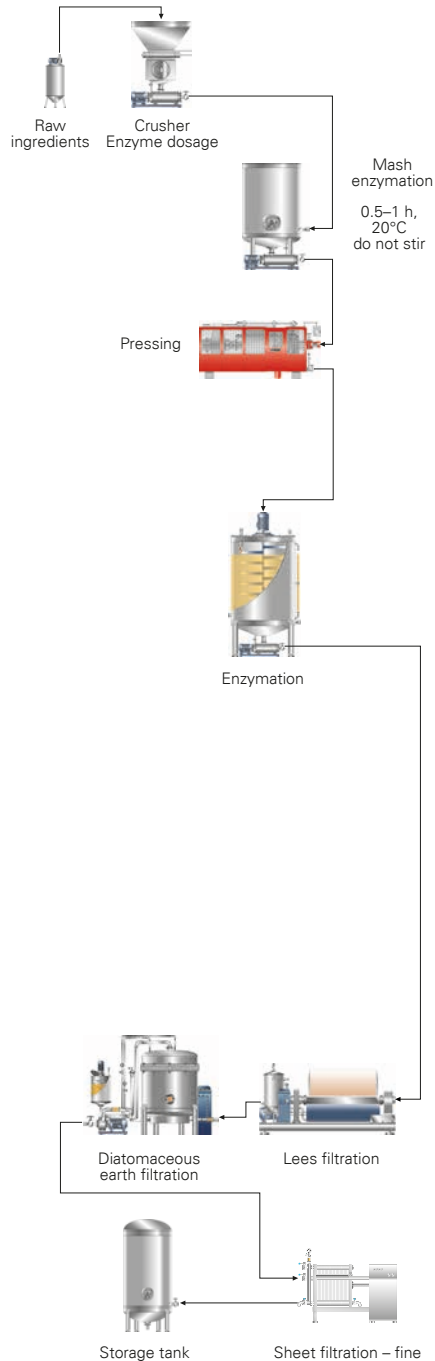
* Please refer to national law



Fruit Juice Processing from Pomaceous, Pitted and Soft Fruit

Small-scale fruit processors and fruit distilleries: Recommendations for processing of clear juices

Process steps



Pomaceous fruit, clear juice

Raw ingredients:

Pomaceous fruit: Apple, pear, quince
Ripe, sound, washed and grinded fruits

Mash enzymation:

Approx. 1 h at 20°C, without stirring
Panzym Univers enzyme: 10 ml/hl
Pay attention to an even distribution of enzyme in the mash

Juice extraction:

Pressing

Oxidation protection, as required:

Ascorbic acid stabilizer: 20–40 g/hl

Juice enzymation:

2–4 h at 20°C:

Starch degradation:

Panzym F2 enzyme: 0.5–2 ml/hl

Pectin degradation:

Panzym Univers enzyme: 1–2 ml/hl

Fining:

6–8 h at 20°C:

SIHA PURANIT fining agent: approx. 100 g/hl
(at pH < 3.5 and 20°C SIHA Ca-Bentonite G fining agent:
approx. 100 g/hl)

Levasil BF30 silica sol fining agent: 50–100 ml/hl

Gelatine Fine Granules fining agent: 10–30 g/hl
(higher dosing required for fruit rich in tannin)

Plant protein as an alternative to gelatine:
SIHA Pea Protein fining agent: 10–30 g/hl

Lees filtration with

BECOLITE 5000 perlite: 5–7 kg/m²

Coarse filtration:

BECOGUR 200 diatomaceous earth: approx. 10% at 100–200 g/hl
BECOGUR 3500 diatomaceous earth: approx. 90% at 100–200 g/hl
or BECOPAD 580 depth filter sheet

Fine filtration:

BECOPAD 350 depth filter sheet

Particle filtration before bottling with

BECO PROTECT PG depth filter cartridges (5 µm)

Flow rate: 800 l/h/30" filter cartridge

Bottling at approx. 80°C, depending on germ load and
heat holding time

Pitted fruit/soft fruit, clear juice

Raw ingredients:

Pitted fruit: Cherry, plum, mirabelle plum
Soft fruit: Blackcurrant, strawberry, blackberry
Ripe, sound, washed and grinded fruits

Mash enzymation:

1–2 h at 45–55°C, occasional stirring
Rich-colored fruit: Panzym Univers enzyme: 10 ml/hl

Alternatively for cherry processing:

Hot pressing at 60–70°C without using enzymes

Juice extraction:

Pressing

Juice enzymation:

2–4 h at 50–55°C or
8–12 h at 20°C:
Panzym Univers enzyme: 2–8 ml/hl

Fining:

1–2 h at 50–55°C or
4–8 h at 20–30°C
SIHA PURANIT fining agent: 25–50 g/hl
(at pH < 3.5 and 20°C SIHA Ca-Bentonite G fining agent:
approx. 25–50 g/hl)
Levasil BF30 silica sol fining agent: 50–200 ml/hl
Gelatine Fine Granules fining agent: 5–20 g/hl
Plant protein as an alternative to gelatine:
SIHA Pea Protein fining agent: 5–20 g/hl

Lees filtration with

BECOLITE 5000 perlite: 5–7 kg/m²

Coarse filtration:

BECOGUR 200 diatomaceous earth: approx. 10% at 100–200 g/hl
BECOGUR 3500 diatomaceous earth: approx. 90% at 100–200 g/hl
or BECOPAD 580 depth filter sheet

Fine filtration:

BECOPAD 350 depth filter sheet
Colored juices: BECOPAD 450 depth filter sheet

Particle filtration before bottling with

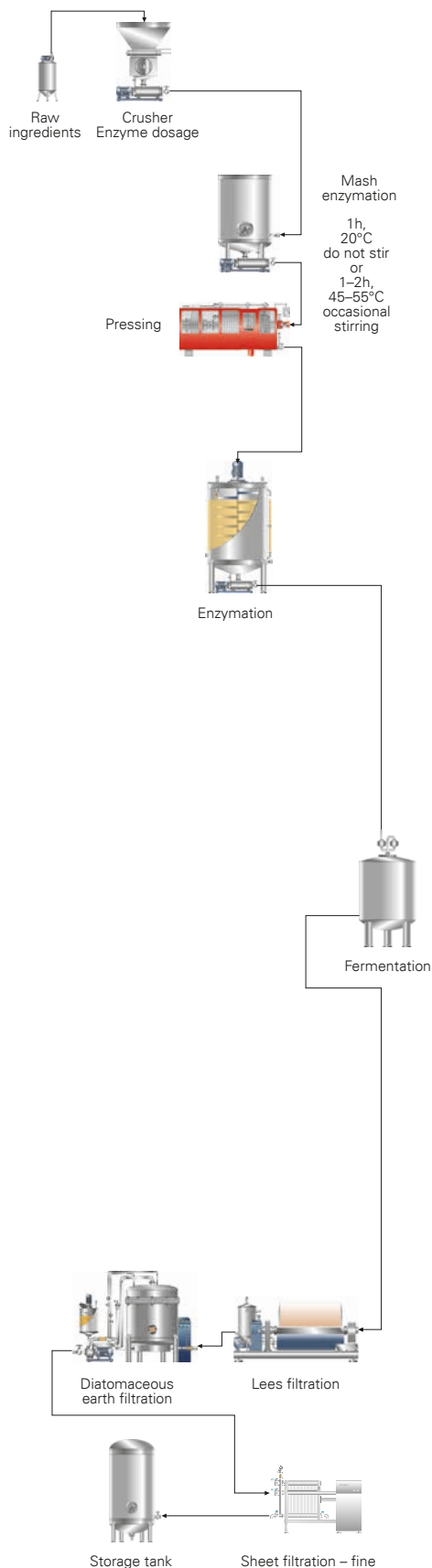
BECO PROTECT PG depth filter cartridges (5 µm)
Flow rate: 800 l/h/30" filter cartridge

Bottling at approx. 80°C, depending on germ load and
heat holding time



Fruit Wine Processing from Pomaceous, Pitted and Soft Fruit

Process steps



Fruit wine

Raw ingredients:

Pomaceous fruit: Apple, pear quince
 Pitted fruit: Cherry, plum, mirabelle plum
 Soft fruit: Blackcurrant, strawberry, blackberry
 Ripe, sound, washed and grinded fruit

Mash enzymation:

Pomaceous fruit: approx. 1 h at 20°C without stirring, Panzym Unvers enzyme: 10 ml/hl
 Pitted and soft fruit: 1–2 h at 45–55°C, occasional stirring
 Rich-colored fruit: Panzym Unvers enzyme: 10–30 ml/hl

Juice extraction:

Pressing

Juice stabilization:

Addition of sulfur to pressed juice:
 SIHA Potassium Pyrosulphite stabilizer: 3–10 g/hl
 Addition should follow the microbiological burden of incoming fruit

Juice enzymation:

Starch degradation (pomaceous fruit): Panzym F2 enzyme: 0.5–2 ml/hl
Pectin degradation: Panzym Unvers enzyme: 0.5–2 ml/hl
No holding time: Starch and pectin degradation occur during fermentation

Chaptalization, as required

Acification:

Lactic Acid 80% stabilizer: max. 3.75 g/l* (optional for fruits low in acid)

Fermentation (make sure to only use cleaned fermentation vessels with fermentation air locks):

SIHA Active Yeast 3: 20 g/hl
 SIHA Active Yeast 8 (Burgundy Yeast): 20 g/hl
 Rehydration of active dry yeast in juice water mixture (50:50) with
 SIHA® SpeedFerm™ yeast nutrient

Yeast nutrient:

Fermentation Salt yeast nutrient: max. 100 g/hl, step-wise addition until mid
 of alcoholic fermentation
 SIHA Vitamin B₁ yeast nutrient: max. 0.6 g/1,000 l
 SIHA PROFERM™ H+² combined yeast nutrient: max. 40 g/hl

After fermentation:

Racking followed by sulfurization with
 SIHA Potassium Pyrosulphite stabilizer: 10–16 g/hl

Fining:

SIHA Active Bentonite G fining agent: approx. 25–100 g/hl
 (at pH < 3.5 SIHA Ca-Bentonite G fining agent: ca. 100 g/hl)
 Levasil BF30 silica sol fining agent: 50–200 g/hl
 Gelatine Fine Granules fining agent: 5–20 g/hl
 (higher dosing required for fruit rich in tannin)
 Plant protein as an alternative to gelatine:
 SIHA Pea Protein fining agent: 5–20 g/hl

Stabilization:

SIHA Potassium Pyrosulphite stabilizer: Target value, free SO₂: 35–50 mg/l
 Potassium Sorbate stabilizer: max. 26.8 g/hl (for wines with residual sugar)

Lees filtration with

BECOLITE 5000 perlite: 5–7 kg/m²

Coarse filtration:

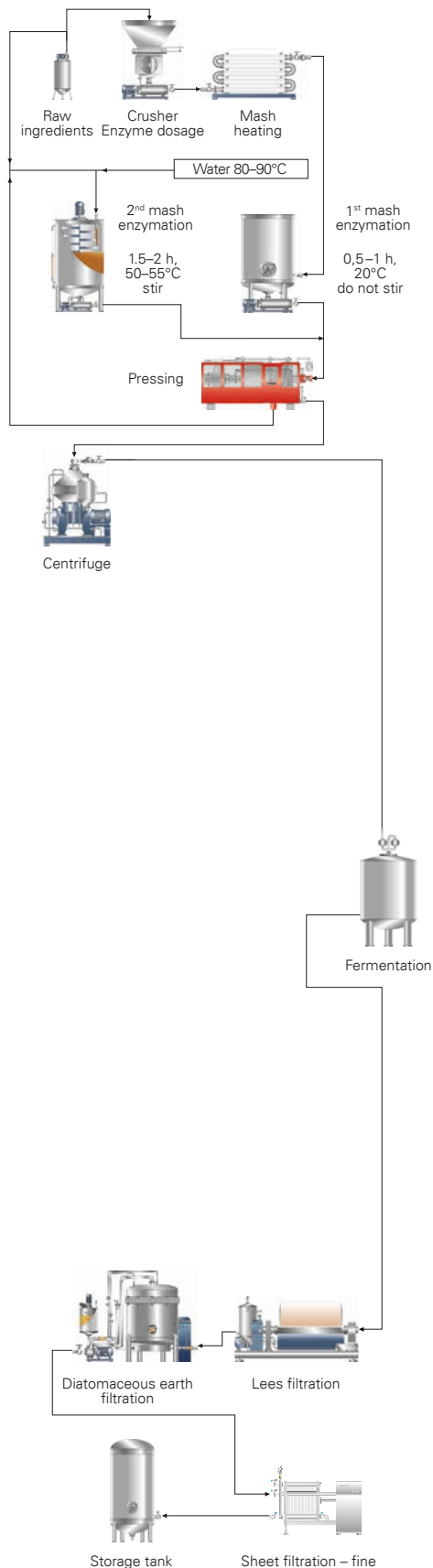
BECOGUR 200 diatomaceous earth: approx. 10% at 100–200 g/hl
 BECOGUR 3500 diatomaceous earth: approx. 90% at 100–200 g/hl
 or BECOPAD 580 depth filter sheet

Fine filtration:

BECOPAD 350 depth filter sheet
Microbial removal or sterile filtration: BECOPAD 220 depth filter sheet or
 alternatively BECO PROTECT CS 115 and
 BECO MEMBRAN PS Pure filter cartridges 0.45 µm or 0.65 µm

Fruit Wine Processing from Apples and Pears (Cider)

Process steps



Cider

Raw ingredients:

Ripe, sound and washed fruit

1st mash dosage:

Panzym First Yield enzyme: 7–10 ml/hl

1st mash enzymation:

0.5–1 h at approx. 20°C, without stirring

Possible process step: Juice extraction with secondary extraction (2nd mash enzymation):

Maximum yield, Panzym Second Yield enzyme: 10–20 ml/hl pomaceous fruit
1.5–2 h at 50–55°C, with vigorous stirring

Juice extraction:

Possibly blending of first and second juice

Alcoholic fermentation:

SIHA Active Yeast 3 or SIHA Active Yeast 8 (Burgundy Yeast): 20 g/hl
Rehydration of active dry yeast in juice water mixture (50:50) at 35°C

Fermentation temperature: 17–22°C

Enzymation/alcoholic fermentation:

Panzym Flux enzyme: 1–3 ml/hl for pectin degradation and improved sedimentation
Higher alcohol yield with Panzym HT 300 enzyme: 2–3 ml/hl

Rehydration of active dry yeast:

SIHA SpeedFerm yeast nutrient: 20 g/hl

Yeast nutrients/alcoholic fermentation:

Fermentation Salt yeast nutrient: max. 100 g/hl, step-wise addition until mid of alcoholic fermentation
SIHA Vitamin B₁ yeast nutrient: max. 0.6 g/1,000 l
SIHA PROFERM H⁺ combined yeast nutrient: max. 40 g/hl

Optional: Malolactic fermentation (MLF):

SIHALACT™ Oeno lactic acid bacteria (citrate-positive) after alcoholic fermentation (see Wine Navigator brochure, chapter MLF)

Lees filtration with

BECOLITE 5000 perlite: 5–7 kg/m²

Diatomaceous earth filtration:

BECOGUR 200 diatomaceous earth: approx. 10% at 100–200 g/hl
BECOGUR 3500 diatomaceous earth: approx. 90% at 100–200 g/hl

Stabilization:

Cold stabilization: BECO Steril 40 or BECO KDS 15 depth filter sheets
Room temperature: BECOPAD 220, BECO KD 10 or BECO Steril 40 depth filter sheets

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