Scott Laboratories
Laffort Presentation

Fining Basics and Gelatins

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What is Fining ?

The deliberate addition of an adsorptive compound that is followed by settling of partially soluble components from the wine.

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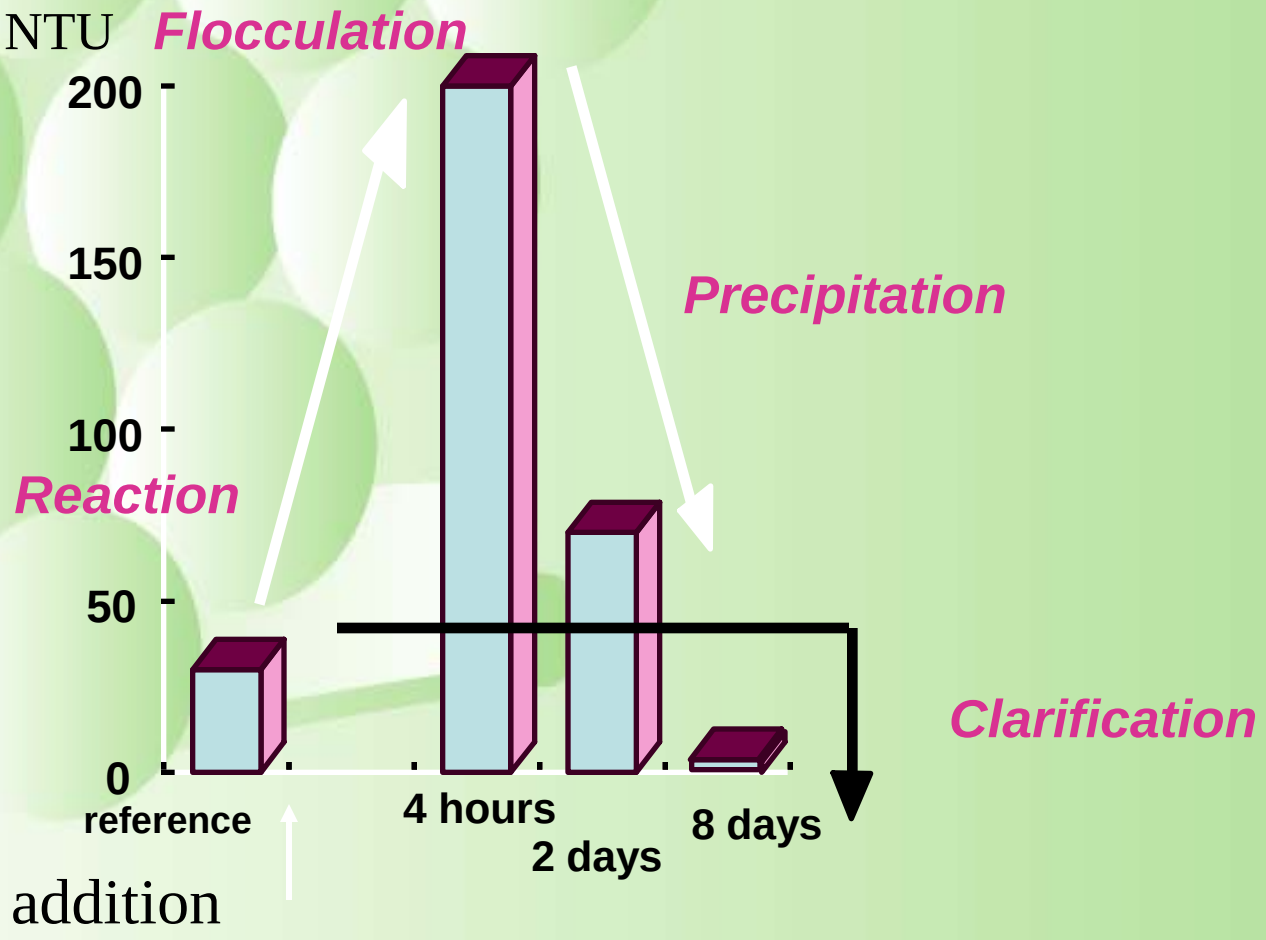
Why do we fine wine?

- Clarify wine and juices (removes fine particles)
  - Gelatins, Isinglass
- Remove tannins and brown polyphenolics
  - Gelatins, Casein, Albumin, PVPP (Polylact)
- Stabilization
  - Bentonite - removes protein
  - Tannins- Removes protein
- Remove unwanted odors
  - Copper Sulfate
  - Argilact
  - Activated Charcoal

Types of Fining Agents

- Bentonite- for removal of protein
- Gallic Acid Tannins- for removal of protein
- Proteins- removal of tannins
  - Gelatins
  - Albumin (egg white)
  - Casein (milk)
  - Isinglass (fish air bladders)
- PVPP (Viniclar)
- Copper Sulfate- oxidizes sulfur compounds
- Activated Charcoal- removes everything!
- Polysaccharides- Gum Arabic - Colloid protector

Mechanism of the clarification with fining agents



Myths about Fining

- Egg white is the most gentle method of fining tannins - Wrong
  - Ironically, it is the strongest and least specific and should be used only on wines destined to be aged
- Copper Sulfate only removes bad odors- Wrong! It oxidizes all thiols bad and good- reduces overall nose

Influences on Fining

Temperature

Protein fining → Low temperature

(except with Bentonite)

Salt effect

Sodium chloride or regular salt

Ferric salt for gelatins in white wines → Aeration

Over-fining and tannins in white wines (Gelatin)

Reaction Protein-Tannin help to flocculate

100 ppm of tannins / 5 to 6 ppm of gelatin in wine

Tips for a good fining

Always prepare the fining agents in water
(No wine dilution)

- Good dilution of the preparation (X liters of preparation / hl of wine)
- Add the preparation into a stirred wine (still moving)
- Closed circulation of the wine
- Add the preparation through a venturi effect (before the pump) controlling the addition
- Aerate lightly the wine
- Cool down the wine if necessary (50 to 60°F)

Albumin

Origin

Eggs

Presentation

Fresh egg white :

Need to be used same day

Powder : Acidification of fresh egg white then vacuum concentration at a low temperature.

Keep in a dry room at room temperature into a dry bag.

Egg Albumin

Role

Tannin and Color Stabilization

Structured wines.

Barrel matured wines.

Not recommended for young wines and white wines.

Clarification - Medium flocculation properties.

Doesn’t need to be completed with tannins or bentonite, except in rosé wines and white wines.

Egg Albumin

Dosage

50 to 150 ppm

3 to 6 fresh egg whites / barrel

(1 Fresh egg white = 3 gm. of active material)

Preparation

Dissolve 100 gm in water (at room temperature)

with 2 gm of salt.

Don’t make any foam or add foam into tank or barrel.

Ichtyocolle / Eisenglass

Origin

Gelatin extracted from fish Air-bladders.

(Sturgeon is no longer used in making of this fining agent)**.**

Presentation

<u>Powder or chips :</u> **The preparation is difficult.**

<u>Gel :</u> Ready to use but the preparation has a short shelf life.

Ichtyocolle

Role

Fining agent of the “Grand Vin blanc”

Enhances the brilliance of the wines

Clarification - SLOW to settle down.

(not sensitive to low temperatures)

The use of silica gel before the treatment can help to accelerate settling.

Can be associated to tannins into light white wines.

Ichtyocolle

Dosage

10 to 30 ppm

(Depends of the dry extract)

Preparation

Prepare a citric acid solution : (room temperature).

Sprinkle the product on the top of the solution and wait 3 to 4 hours to let it swell.

Dilute volume to volume in water the solution of Ichtyocolle before mixing into the wine (150 to 300 ml/hl).

No over-fining at the recommended dosage.

PVPP

Polyvinylpolypyrolidone

Origin

High molecular weight polymer of vinyl

Presentation

White powder :

Not soluble in water, organic solvent, mineral acids and alkaline.

Flocculates and precipitates quickly into the wine

Viniclar

Role

Reacts with the small size polyphenols

Oxidized white and rosé wines

Color : **Pinking** (and browning).

Flavors : Helps to prevent the **maderisation**.

Tannins

Removes some astringent and bitter tannins in red wine

Clarification - very good

Does not need tannins or silica gel

Viniclar

Dosage

Preventive treatment (wine) : 150 to 300 ppm

Curative treatment (wine) : 300 to 500 ppm

Oxidized must : 400 to 800 ppm

Maximum dosage allowed : 900 ppm

Preparation

Let Viniclar swell into 4 to 5 times its weight in water (or wine) during 1 hour.

After incorporation into wine mix without aerating in order to maintain in suspension over 30 to 45 minutes.

Gelatins

Origin

Hydrolyzed Animal (Porcine) Collagen

Presentation

Gecoll Supra: Liquid

Gelarom: Liquid

Gelatin Extra No. 1: powder

Gelatins

Role

Removal of Tannins- Reacts with tannins in a selective manner according surface charge density

- Removes some astringent and bitter tannins in red wine
- Enhances aroma and flavor
- Decreases microbial load

Clarification - very good

Does not need tannins or silica gel

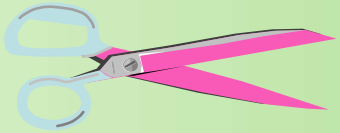
ORIGIN

Collagen

triple helix structure
abundant proline percentage

↓

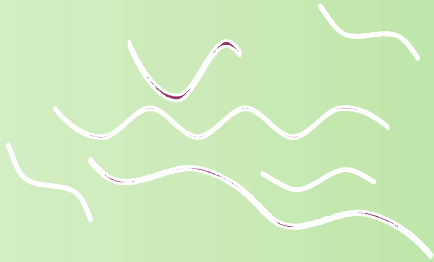
Hydrolysis



destruction of structure

↓

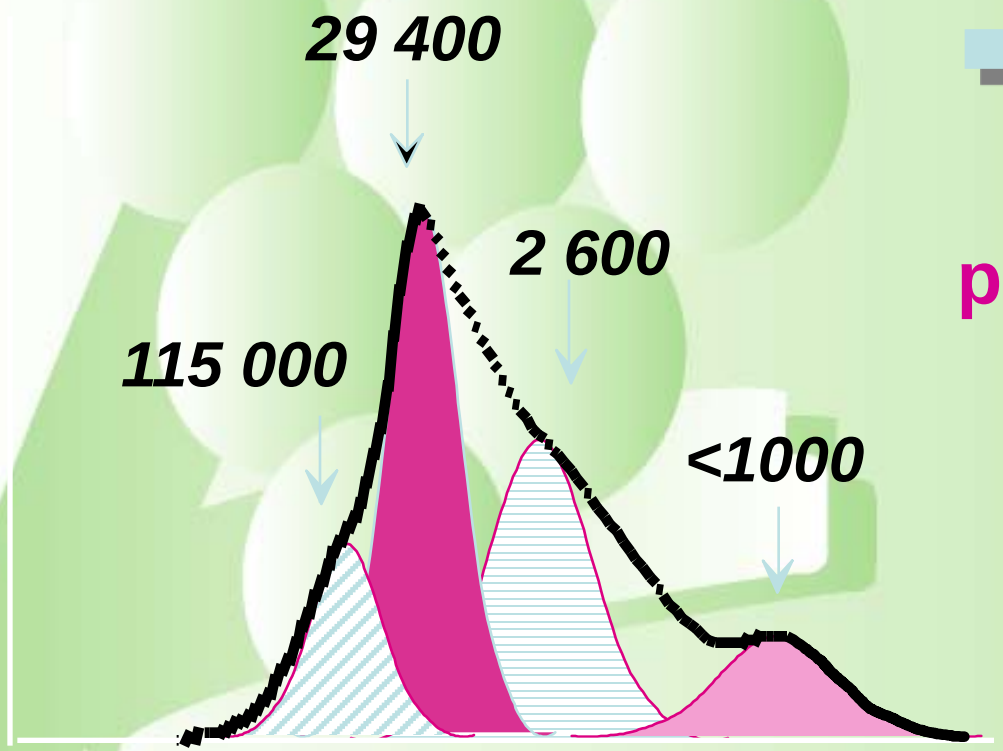
Gelatin



proteinic and polypeptidic fractions

MASS

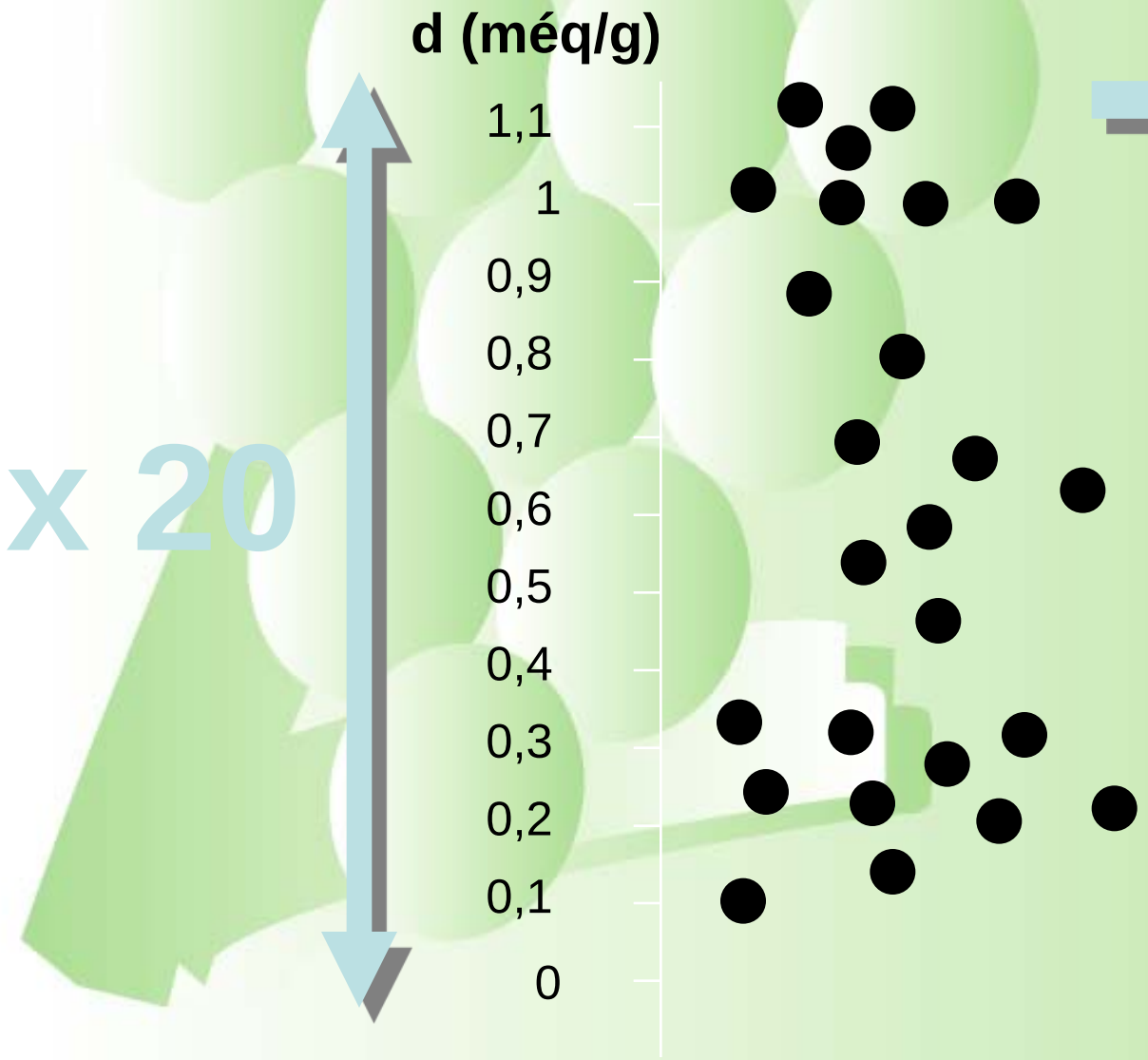
Exclusion Chromatography



GELATINS :

various protein and polypeptide fractions

CHARGE



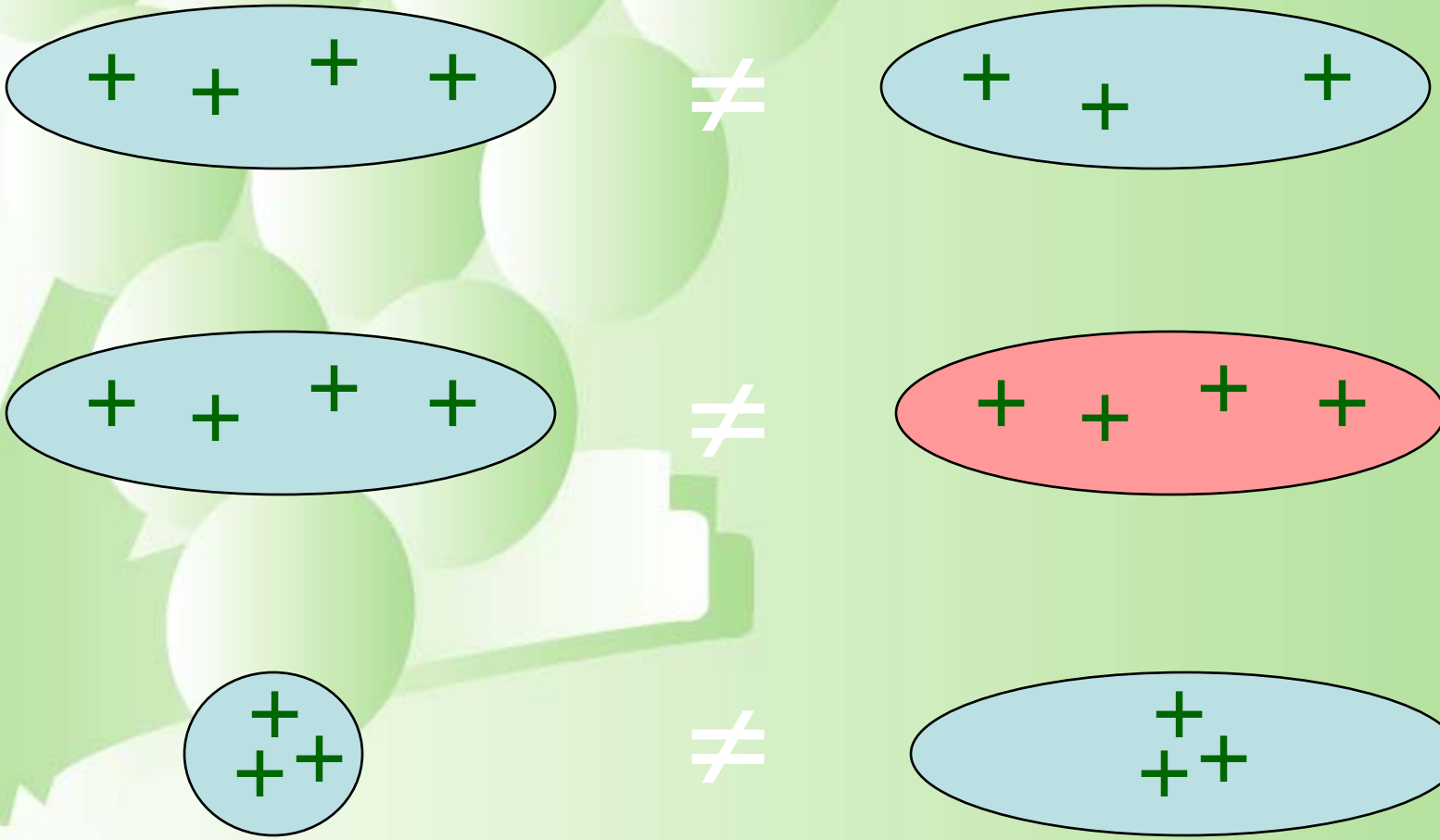
GELATINS :

- positive surface charge density,

- in relation with gelatin quality

Standard conditions :
synthetic solution
pH = 3,5
5 g/l tartaric acid
12 %vol.

SURFACE CHARGE DENSITY of GELATINS



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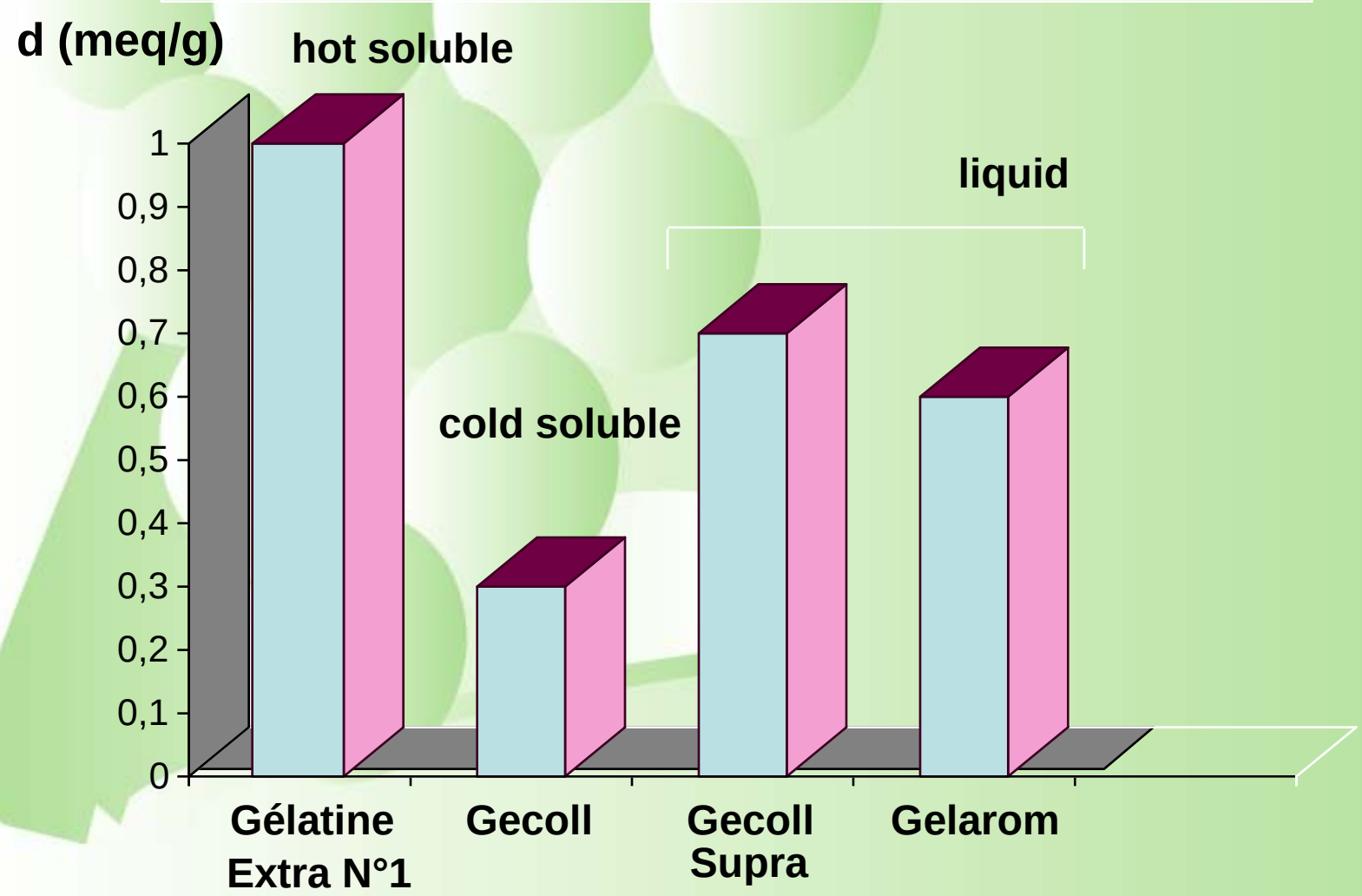

Gelatins

Dosage

Gecoll Supra : 400-1000 ppm

Gelarom : 300-600 ppm

Gelatine Extra No, 1 : 60-100 ppm

***Must be kept warm at all times during addition (95-104°F)**

Preparation

Gecoll Supra and Gelarom should be diluted 1:1 in water or gradually added directly during a pump-over

Maximum effectiveness in one week then rack.

Gelatins

Preparation

Gelatine Extra No 1 requires some extra care in that it must be kept warm (94-104º F) to dissolve and during addition

Gelatins

Application

Gecoll Supra

- best used to fine out astringent polyphenols
- Enhances fruit flavors in wine
- Good for use of hard pressed wines

Gelarom

- Treatment for moldy musts
- Enhances bouquet in finished wines

Gelatine Extra No. 1

- Very large surface charge density
- Best for polishing tannins

Gelatins

	Structured balanced wine	Astringent Wine	Balanced wine	Unbalanced light wine	Aromatic light wine
Gelarom					
Gélatine Extra N°1					
Gecoll Supra					
Albumin					

and Scott Labs
Thank you for
coming