



# Review of Carbonic Maceration and Nouveau-style Wines

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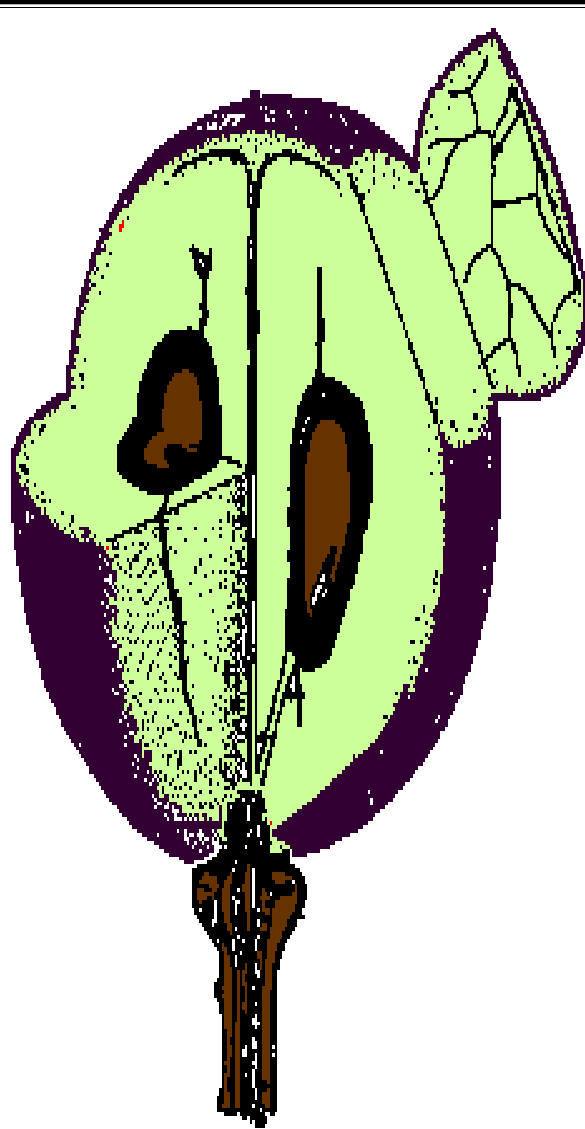
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**It's Beaujolais Nouveau Time!**

# Black Grape Berry



## Anthocyanins (red color)

100% skins

0% seeds

0% juice

## Tannins (astringency, bitterness)

50% skins

45% seeds

5% juice

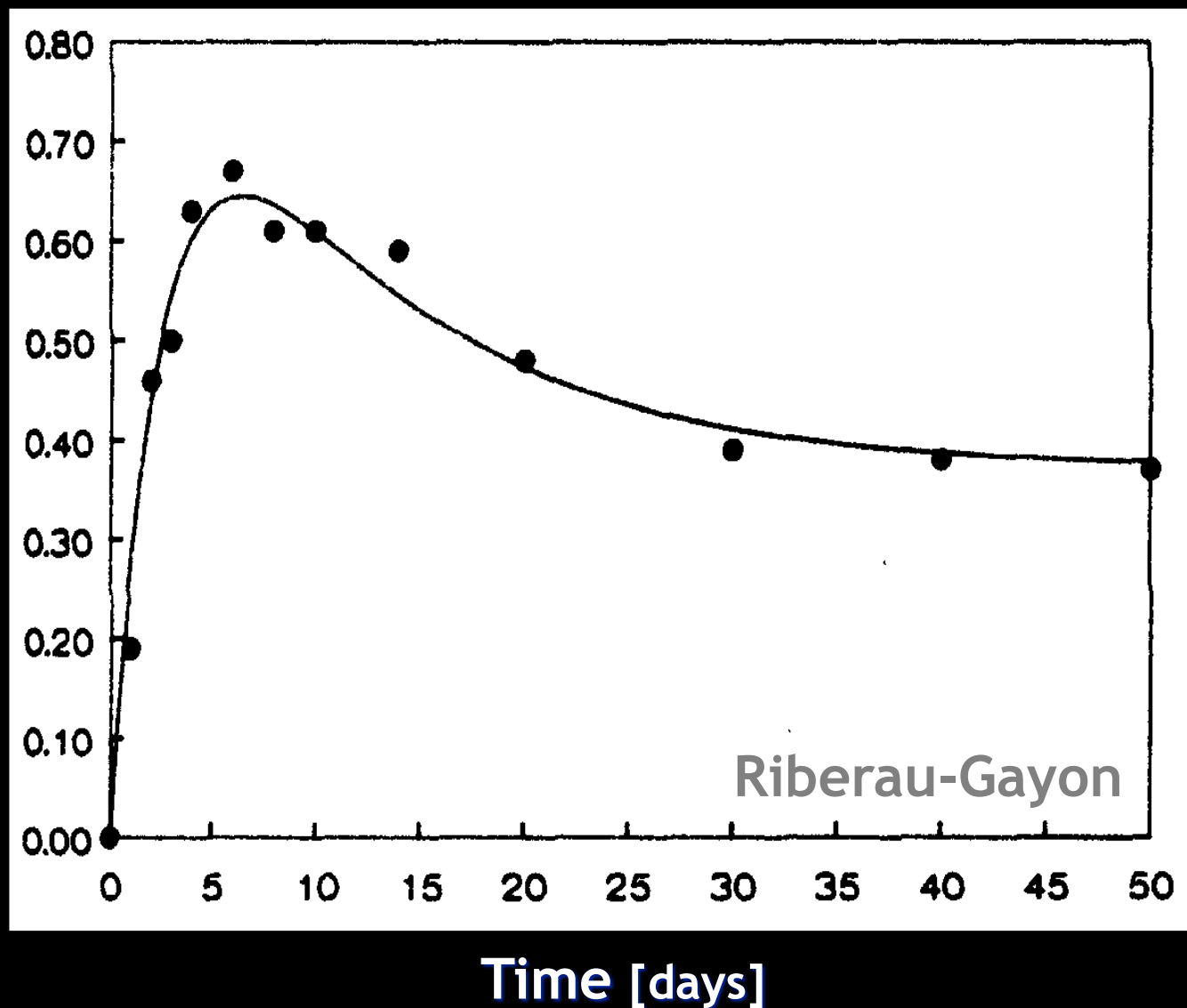
## Phenolics (anthocyanins, tannins)

Total in berry  $\approx$  5000 mg/kg

Total in wine  $\approx$  2000 mg/L

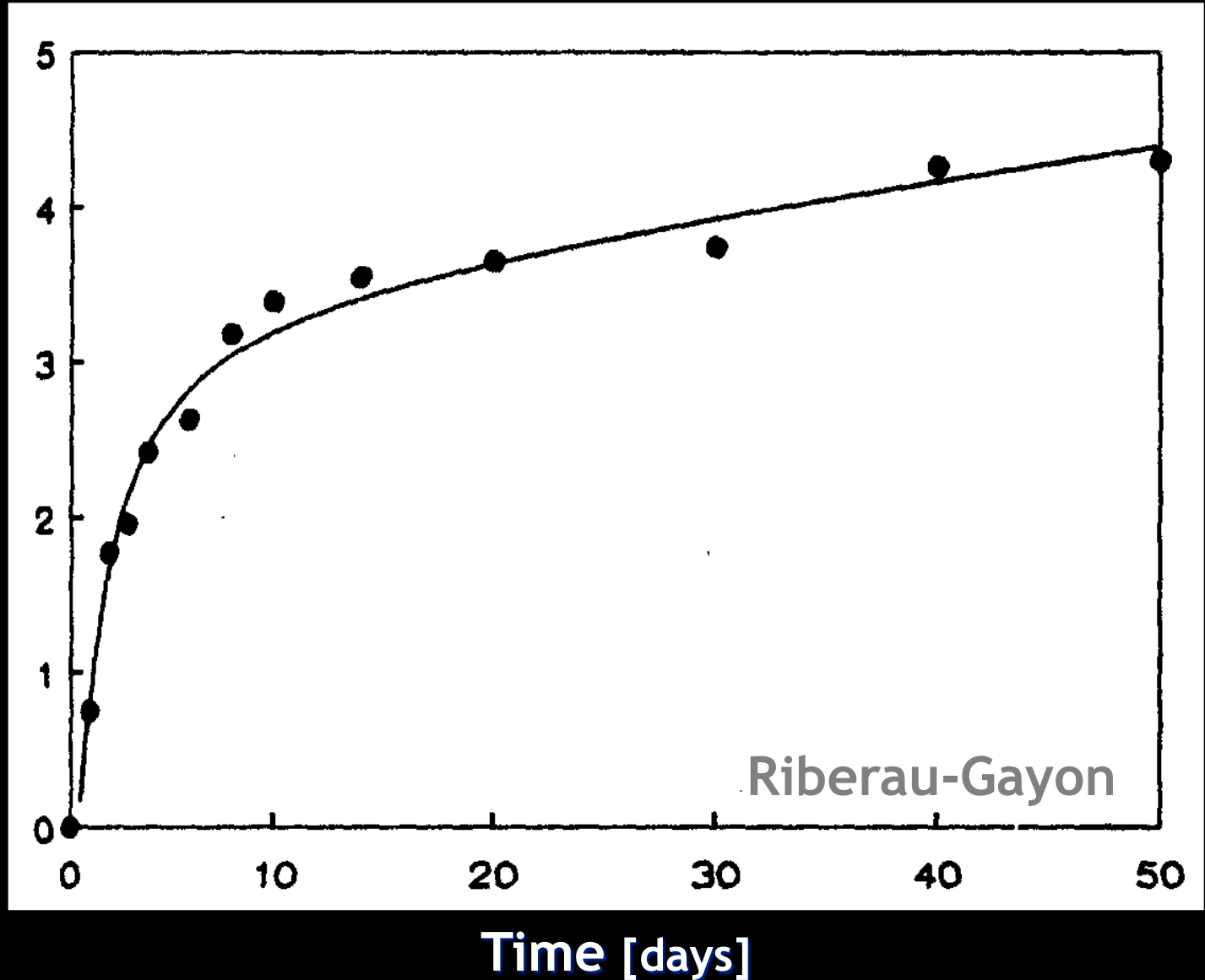
# Extraction of Anthocyanins

Anthocyanins  
[mg/L]



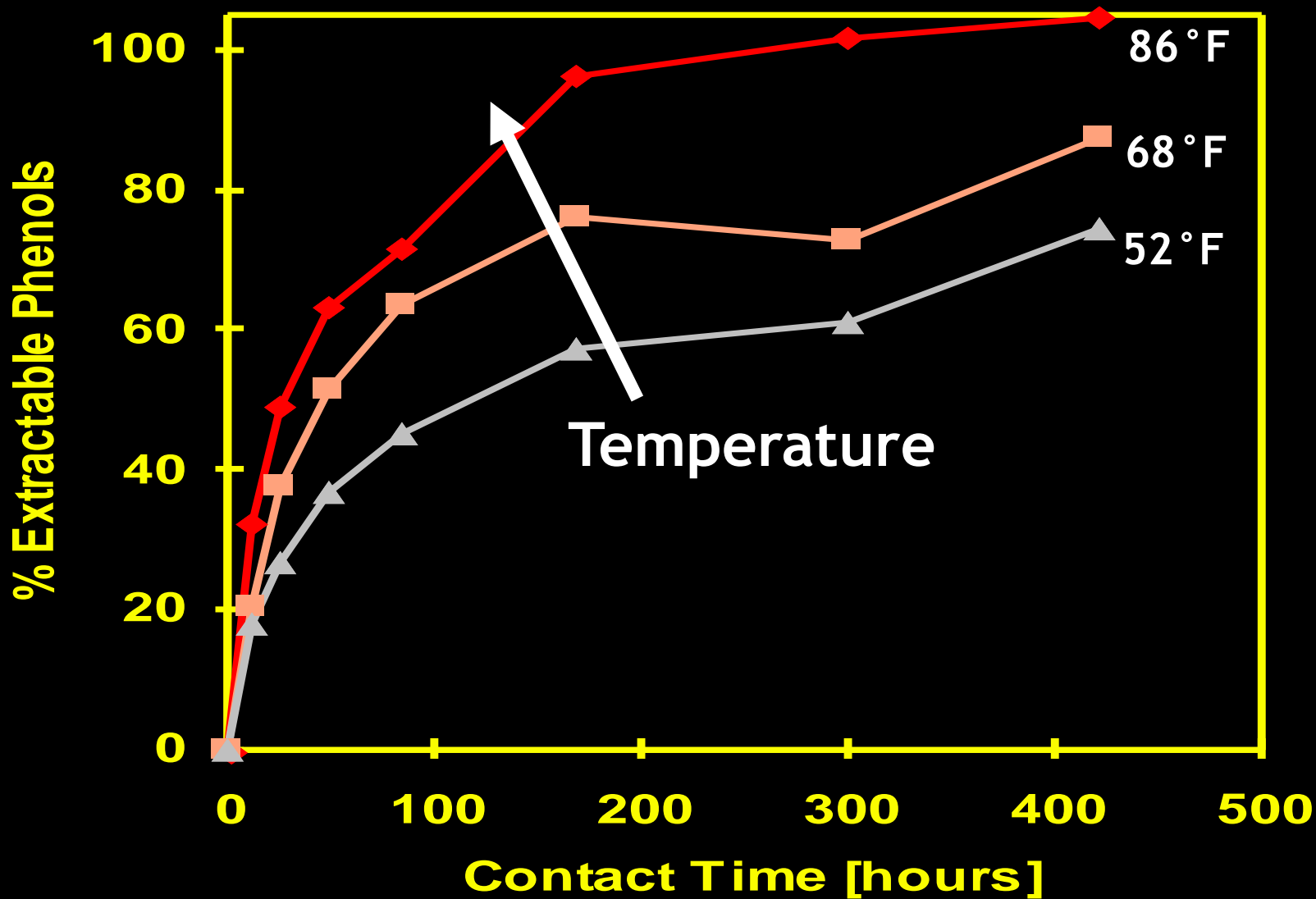
# Extraction of Tannins

Tannins  
[mg/L]



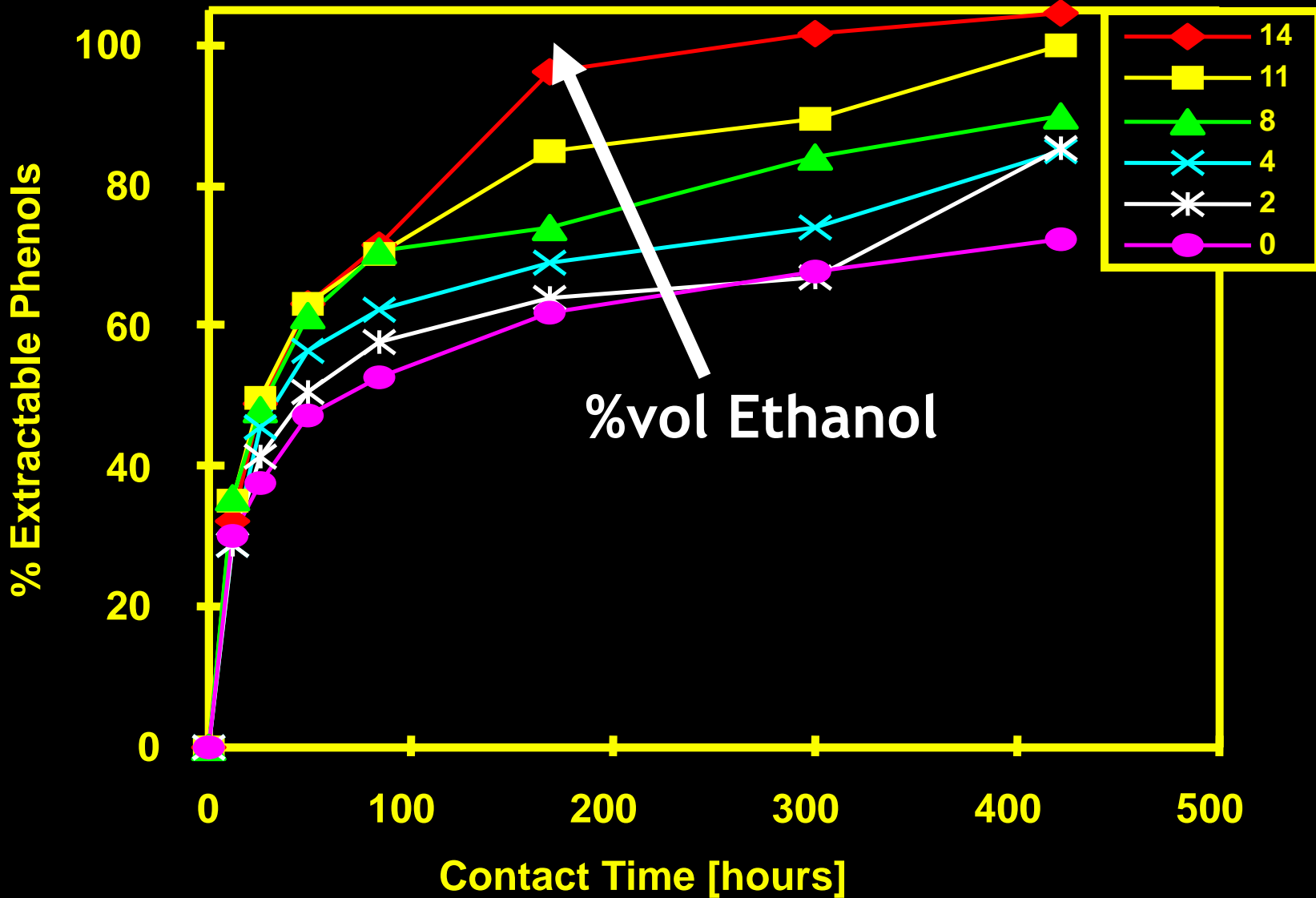


# Extraction and Temperature





# Extraction and Alcohol



# Destemming → Crushing



# Punching down the Cap

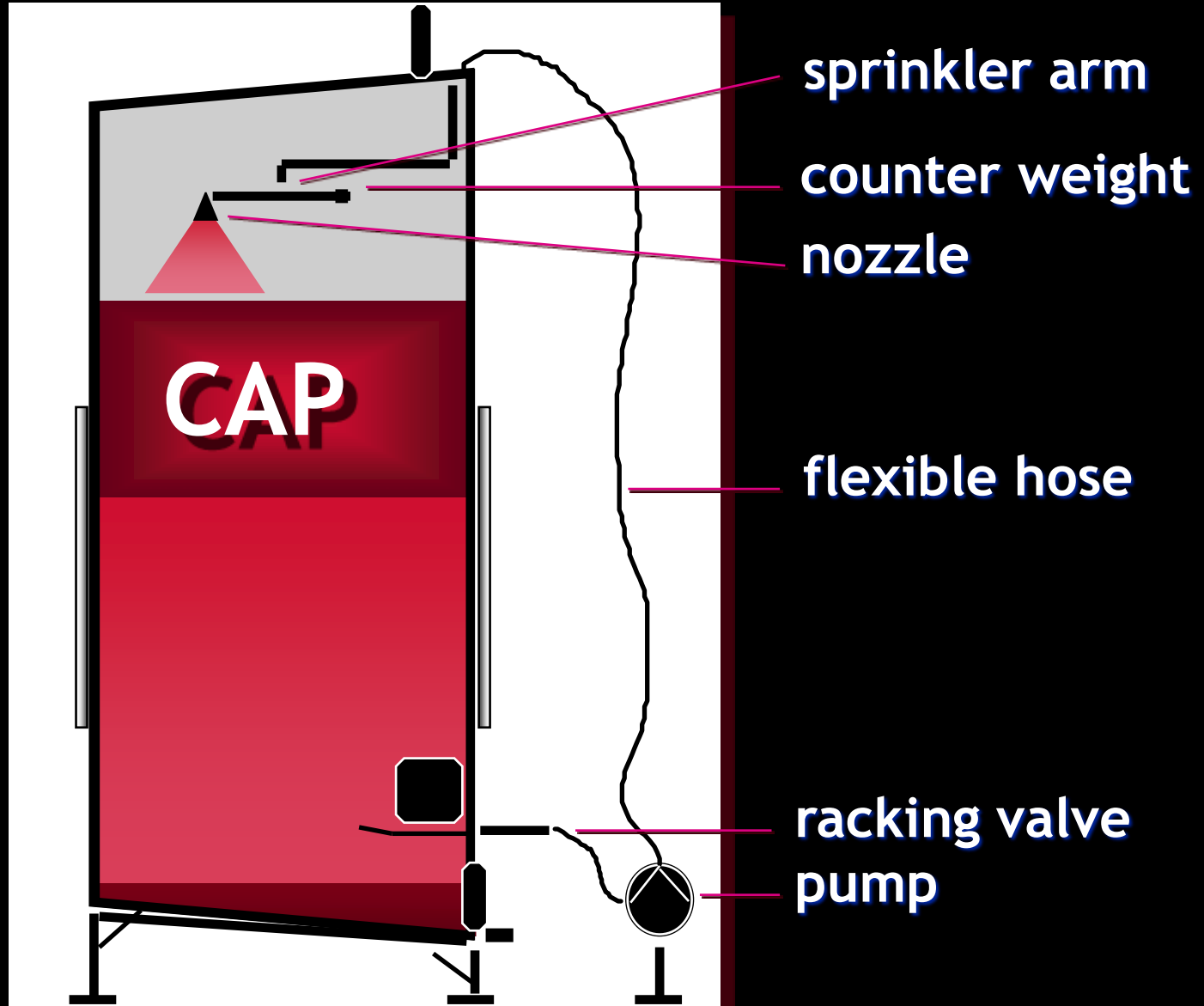




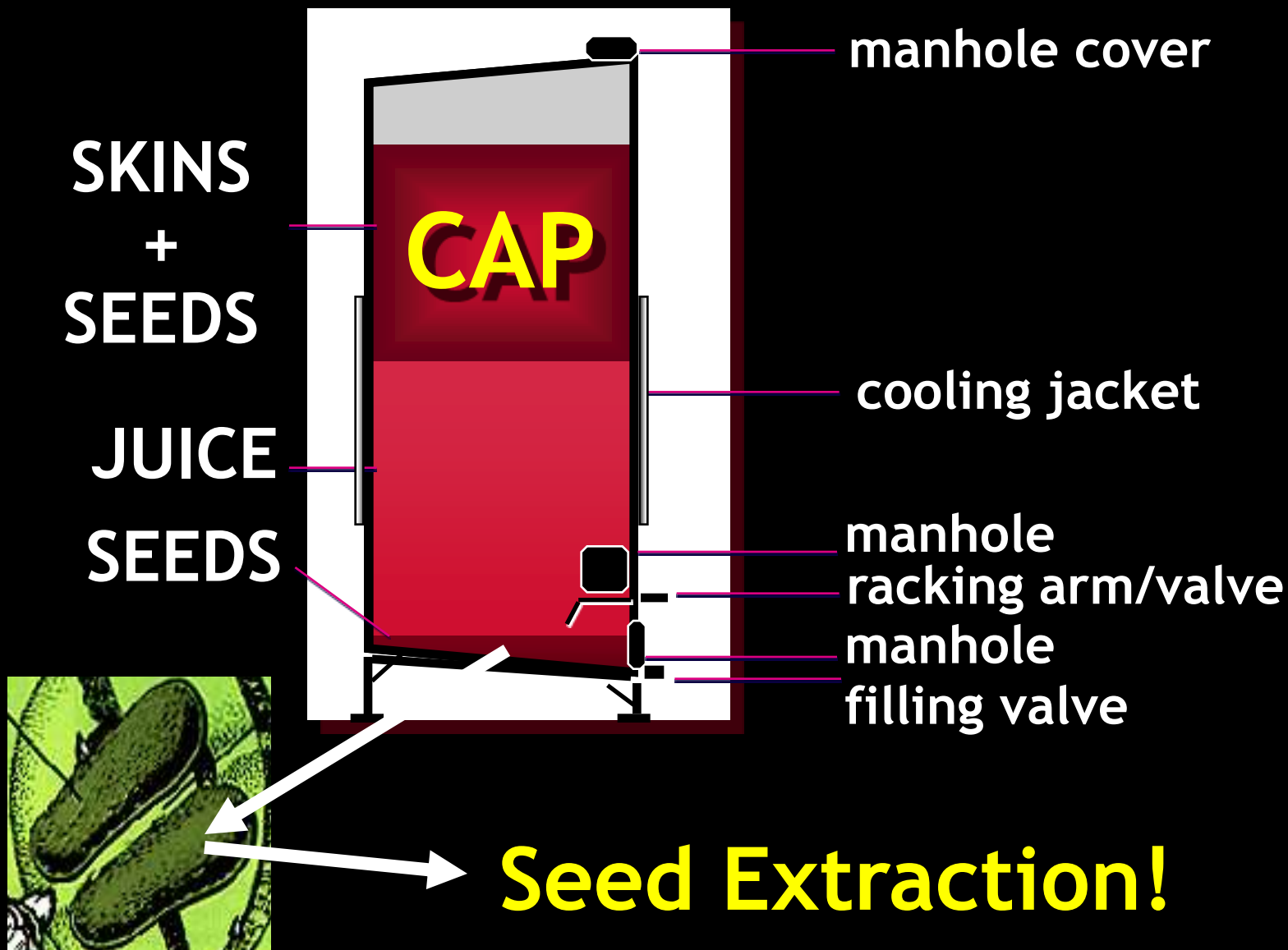
# Punching down the Cap



# Pumping over the Cap



# "Extended Maceration"





# Carbonic Maceration

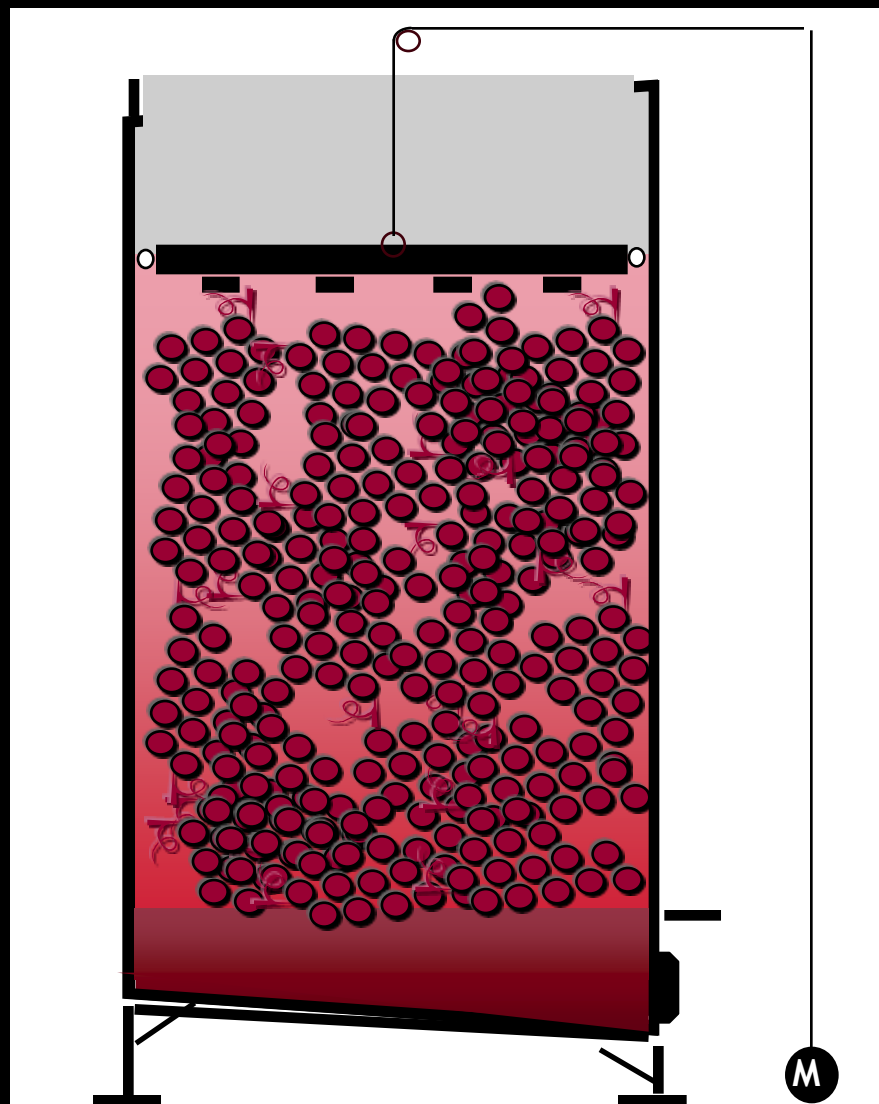
- Whole clusters = intact, non-destemmed berries
- Carbon dioxide ( $\text{CO}_2$ ) = anaërobic atmosphere at 85-95 °F
- Maceration/partial fermentation by grapes' own enzymes
- Uncrushed grapes pressed after 8-10 days; yeast added
- Complete alcoholic fermentation at 60-70 °F

# Carbonic Maceration



**Gamay**

# Carbonic Maceration



# Carbonic Maceration

A large, woven basket filled with whole clusters of dark purple grapes. The grapes are densely packed and appear to be in the process of being macerated. The basket is made of a dark, textured material, possibly wicker or bamboo. The lighting is somewhat dim, highlighting the rich color of the grapes.

Whole clusters/berries in gas  
vs. whole clusters/berries to must

# Semi-Carbonic Maceration

Whole clusters/berries in gas  
vs. whole clusters/berries to must

# Carbonic Maceration

## Destemming Or Whole Berry?





# Carbonic Maceration

What Gas:  $\text{CO}_2$ ,  $\text{N}_2$ ,  $\text{Ar}$ ?



# Carbonic Maceration Pressurized Or Not?





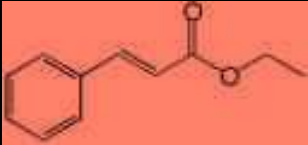
# Carbonic Maceration

## What Beer to Drink?



# Carbonic Maceration

**It's Beaujolais Nouveau Time!**

- Fruity wines (cherry, strawberry, banana, cinnamon)
- Distinct aroma ?? 
- Lost varietal character ??
- Reduced acidity, more alcohol (+2%) ??
- Low in tannins, no oak ?? => *fast sale*
- Little aging potential or not ??



# Carbonic Maceration

**It's Beaujolais Nouveau Time!**

- Space/time requirements
- Fruit loading/removal
- Heating capabilities
- Bacterial/yeast infections
- Varietal considerations



@ 1:00 pm

Wine Flaw

Sensory Evaluation

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