

# INFLUENCE OF THE ADDITION OF YEASTS AND NUTRIENTS ON THE COURSE OF ALCOHOLIC FERMENTATION AND SENSORY QUALITY OF CIDER



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# Apple wine (cider)

- Alcohol fermentation:

**Sugar → alcohol + carbon dioxide + energy**

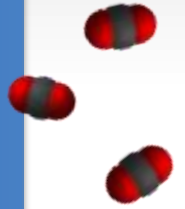


- *Saccharomyces* yeasts and non-*Saccharomyces* yeasts.

# Research question

- Which combinations of yeasts and yeast nutrients are optimal for the quality of apple wine in terms of chemical composition and sensory quality?
- How does the temperature and addition of different yeasts affect the course of alcoholic fermentation?

# Methods of work

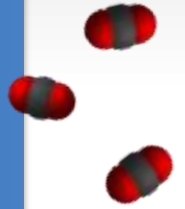


- Fermentation temperatures: 15 and 20 °C.
- Weighing of released CO<sub>2</sub>.



Fermentation bottles (Sedmak, 2019)

# Analysis



## CHEMICAL ANALYSIS

- ✓ pH value,
  - ✓ titratable acids ,
  - ✓ total acids,
  - ✓ sugar content,
  - ✓ alcohol,
  - ✓ volatile acids and
  - ✓ total dry extract.
- Apple juice*
- Apple wine*
- 
- A diagram consisting of two large right-facing curly braces. The first brace groups the first four items of the list (pH value, titratable acids, total acids, and sugar content) and is labeled 'Apple juice'. The second brace groups the last three items (alcohol, volatile acids and, and total dry extract) and is labeled 'Apple wine'. The two braces overlap, with the 'Apple wine' label positioned to the right of the 'Apple juice' label.

## SENSORY ANALYSIS

- rapid profiling method,
- 9-point hedonic scale

# Results

Alcoholic fermentation curves

Alcoholic fermentation kinetics

# Conclusions

- Faster and more intense alcoholic fermentation at higher temperature.
- More volatile acids at higher temperature.
- **Spontaneous alcoholic fermentation** in control samples - residual reducing sugars and minimum alcohol production

**Thank you for  
your attention!**