

# ORGANOLEPTIC ANALYSIS OF WINES

Diseases, vices and organoleptic deficiencies of wines



# **Diseases, vices and organoleptic deficiencies of wines**

## **PLAN:**

- Organoleptic deficiencies of wines, causes and remedies
- Organoleptic defects of wines, causes and methods of correction
- Wine diseases, causes and methods of control

# Regulatory document

- ГОСТ 32030-2013 Table wines and table wine materials. General specifications:  
«For the production of table wines and table wine materials used:
  - fresh grapes for machine and manual harvesting for industrial processing ГОСТ 31782»
- ГОСТ 31782-2012 Fresh grapes for machine and manual harvesting for industrial processing. Technical conditions: «Mass fraction of berries damaged by diseases and pests: no more than 10 %»



# Terms and definitions

**Disadvantages of wines** - minor deviations of the organoleptic characteristics from the desired image with the possibility of correction by various technological methods

**The vices of wine** – wine sensory faults occurred from the violation of technological conditions of production, generally with full or partial correction

**Diseases wines** – deep changes in the chemical composition of wines under the action of yeast and bacteria failure to comply with sanitation requirements, leading to deterioration of the wine, until the complete loss of consumer qualities

Requirements to taster at organoleptic analysis:

*Sensitivity to quality defects – knowledge of the diseases, vices, faults of wines and the ability to detect them*

# Smells of wine

Smells of wine - foreign odors that are not typical of healthy wine, caused by diseases, vices, various defects in the technology of wine preparation and storage.

Cause of smells:

the appearance of life products of pathogenic microorganisms for wine (yeast, bacteria) in quantities much higher than their normal content in wine.

Products that cause unpleasant tones:

mainly volatile acids (acetic, lactic, propionic, butyric) and their ethyl esters, as well as acetoin, acetamide, diacetyl

In some cases, specific tones are a varietal feature of the grapes:

obtrusive, monosyllabic strawberry tone-Vitis labrusca varieties and hybrids (Isabella, Lydia, etc.)

animal tones (wet dog hair or horse sweat)

medicinal plants

# Sources and groups of flavoring substances:

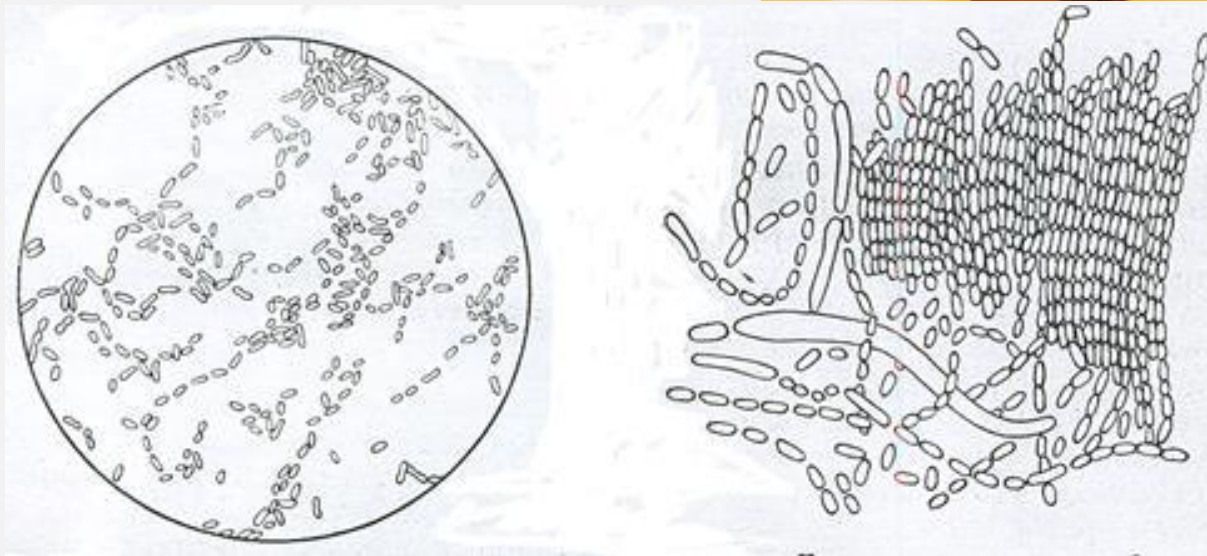
- Grapes-primary
- Yeast and bacterial cells are secondary
- Chemical transformation of components: sugars, amino acids, phenolic substances-tertiary
- Oak wood-tertiary

# Organoleptic disadvantages of wines

Disadvantage	Cause
loss of transparency	colloidal or bacterial turbidity
presence of sediment (for finished products)	loss of the colloid, cash or crystal precipitation
weathering tones	oxidation of aroma-forming substances with air oxygen
hydrogen sulfide rear end	formation of sulfur-containing substances, including hydrogen sulfide, due to lack of oxygen
the varietals of aromas	low-quality raw materials, violation of technology
pronounced astringency	excess of phenolic substances with astringent taste (in red wines due to the phenolic maturity of raw materials and processing methods)
sharp acidity	high content of organic acids, especially malic
flat taste	low content of organic acids

# Acetic bacteria are spread by the fruit fly (fruit fly).

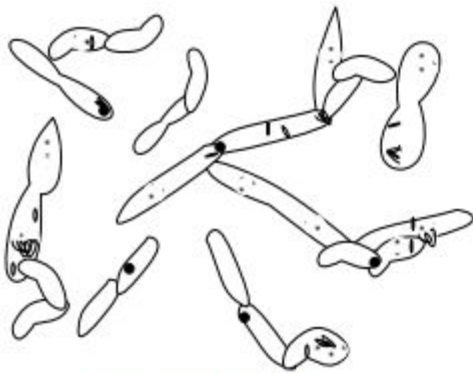
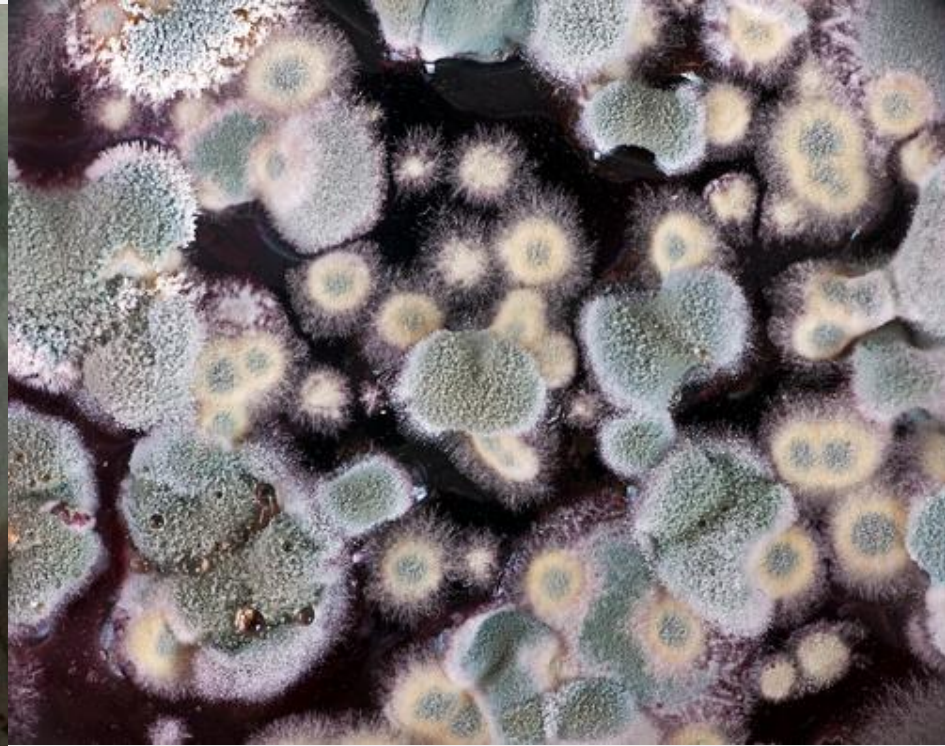
- Fruit Drosophila (small Drosophila, common Drosophila (*Drosophila melanogaster*))



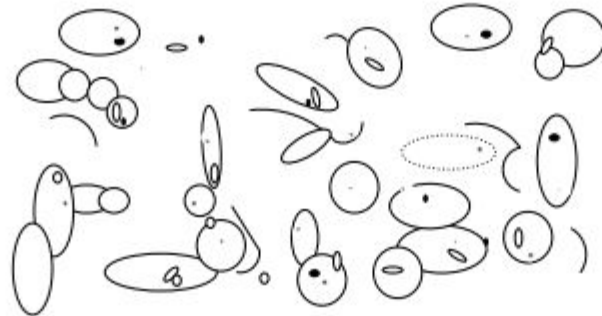
Acetic bacteria



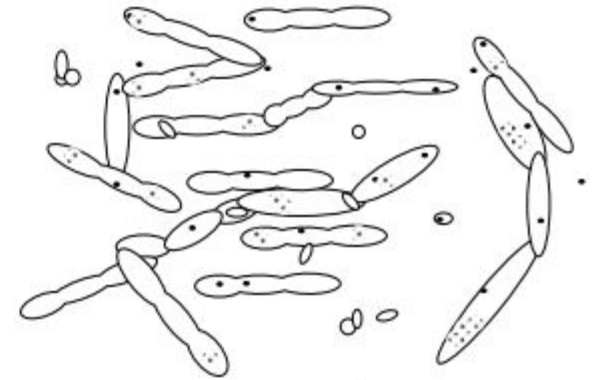
# LAS



*Candida mycoderma*



*Hansenula anomala*



*Pichia alcoholophila*

# Lactic acid souring

Lactic acid souring, including mannitol fermentation - fermentation of sugars by heterofermentative lactic acid bacteria.

Lactic acid souring is mainly subjected to strong and dessert wines, less often dry low-acid wines with residual sugar.

Bacteria are facultative anaerobes, have a high alcohol resistance (15-20% vol.) and the ability to digest fructose with the formation of alcohol mannitol.

The form of pathogen cells – short sticks, single, chain, long filaments in precipitation up to 20-50 microns.

# Lactic acid souring

## The stage of the disease and manifestation of the organoleptic drawbacks:

### 1. Loss of gloss

The appearance of Muti and "silky waves" consisting of a huge number of bacteria.

2. as the disease develops, there are unpleasant sour tones in the aroma and sweet-sour, sharp taste, sometimes "mouse tone".

Low acidity (pH > 3.5), the presence of yeast autolysis products, and high temperature contribute to the occurrence of the disease.

When the disease occurs, the content of sugars in wine decreases, the amount of acetic and lactic acids increases, carbon dioxide is released, and mannitol is often formed.

Prevention measures: sulfitation of wort during settling, fermentation on pure yeast cultures, cooling, early removal of wine from yeast, acidification of wine.

Sick wine in the early stage is treated with sulfitation, pasting, filtration and pasteurization.