

## **Quadrant II – Notes**

**Programme:** B. Sc. (Hons.) Agri.

**Subject:** Horticulture

**Course Code:** HORT- 366

**Course Title:** Post Harvest Management and value addition of Fruits and Vegetables

**Module Name:** Fermented and non-fermented beverages

**Module No:** 12

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### **Notes :**

#### **Fermented and non-fermented beverages**

- Great demand in World for beverages
- Increasing life style
- Canning, fermentation and bottling have been in focus
- Cold drinks, fruit juices have important place
- Good processing strength
- Consumption of carbonated beverages has increased

#### **Fermentation and fermented beverages**

- Decomposition of carbohydrates of microorganisms or enzymes is called fermentation
- The keeping quality of alcoholic beverages, vinegars, and fermented pickles depends upon the presence of alcohol, acetic acid and lactic acid
- Wines, beers, vinegar, fermented drinks, fermented pickles etc., are prepared by these processes.

#### **Fruit based fermented products**

- Alcoholic beverages are made out of carbohydrate rich foods

- Beverages produced from fruits are termed as Wines
- Wine distillates are called as brandies
- A. Van Leeuwenhoek described yeast in grapes
- First publication fermentation by Lavoisier
- Pasteur on spoilage and control called as father of fermentation

### **Wine preparation**

- Preparation of starter culture: in slant, compressed or tablet form added to juice or pulp, Plugged container, Kept in warm place 25-30°C, ready culture after 24 hrs
- Preparation of must: juice or pulp form. If more acidic fruits diluted with water, added calcium or potassium or Pectinol, SO<sub>2</sub> or KMS is added, heated for 35 min at 122°F
- Fermentation: 20-25 °C till whole sugar is consumed completely, measured o Bx periodically
- Siphoning/ filtering
- Maturation: 6 months to 2-3 years
- Clarification: bentonite, celite treatment to make it crystal clear
- Blending aproict+ plum to avoids acidic nature
- Pasteurization: 62°C for 15-20 mins

### **Factors affecting wine quality**

1. **Yeast:** *Saccharomyces ceravisiae var. ellipsoideus* affects formation of alcohol and esters
2. **Enzymatic treatment:** filtration and pectinolytic enzymes for nutritional, sensory and color appeal
3. **Temperature:** low temperature improve wines
4. **Ageing:** maturation of wine after fermentation process, taste and aroma improves
5. **Sensory qualities** of source fruit: final product

## **Types of non fermented beverages**

**Pure fruit juice:** natural juice pressed out of fruit

### **Juice beverages:**

1. Squash: moderate juice and sugar
2. Cordial: clear and sweetened
3. Sherbet: clear syrup artificially flavoured
4. Syrups: clear extract of fruits concentrated with sugar
5. Juice concentrate: removal of water by heat or freezing
6. Juice powder: powdered

**Carbonated products:** dissolved Carbon dioxide to give off gas and pungent taste

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