

Fruit and vegetable processing relies heavily on auxiliary raw materials impacting their physical, chemical, sensory, and nutritional properties. Water is crucial, categorized into uses for processing (requiring potable quality), steam generation, and hygiene/cooling. Technological water quality is paramount; hard water can harden vegetables or affect sugar syrup gels, while soft water causes nutrient loss. Water hardness should be tailored to the product (e.g., 3° for beans, 5–9° for peas). Oxygen in water can cause corrosion, mitigated by boiling; neutral or slightly basic pH is ideal to prevent corrosion and toxicity. Steam generator water must be very soft and free of iron bacteria. Cooling and hygiene water should meet drinking water standards, with industrial water acceptable only for cleaning. Granulated sugar, characterized by uniform crystals and complete water solubility, is used in processing, with concentration measured by refractometers or areometers. Solubility varies with temperature; solutions are often prepared with heated water. Corn syrup (liquid glucose), used in marmalades, improves texture, shine, and reduces sweetness. Salt adds flavor and acts as a preservative, but impurities like magnesium chloride can cause issues. Salt solubility is only slightly affected by temperature. Vinegar, from various sources, preserves some vegetables. Citric, tartaric, and lactic acids are also used. Pectin preparations, classified as strong (>50% methyl ester) or weak (