

Y

Y See yield coefficient.

Y chromosome One of the pair of sex-determining chromosomes that occurs in organisms that have chromosomal sex determinants. In man, it is the male chromosome.

yeast Any fungus that exists generally in the form of single cells and that reproduces by budding or fission. The grouping of such organisms as 'yeasts' cuts across the normal taxonomic classification of fungi. Important genera include *Saccharomyces*, *Kluyveromyces*, *Torulopsis* and *Candida*, which are used in the production of alcoholic beverages, fuel alcohol (ethanol), enzymes, single cell protein and baking.

yeast autolyzate An autolyzate produced using yeast as the starting material. The autolyzates are the result of the action of intracellular enzymes, primarily proteases, on polymeric substances in the cells. The process is carried out at a temperature (between 40 and 55°C) that kills the yeast, but does not inactivate the enzymes. The process is initiated by the addition of plasmolyzing agents. The final product is pasteurized and concentrated. Such autolyzates are produced from spent brewers' yeast or primary grown bakers' yeast. The process is valuable since it produces meat-like flavours. The product is used in culture media and foods.

yeast classification Yeasts that show a sexual stage (forming ascospores or basidiospores) are classified in the appropriate group. Asporogenous yeasts are classified with the Fungi Imperfecti. In some instances, equivalent species can be found in both the asporogenous yeasts and in asexual species.

yeast extract A yeast autolyzate that has been further treated to remove solids by filtration. Such extracts are completely water-soluble and form clear coloured solutions.

yield The net recoverable amount of the desired product from a reaction or process. This may be expressed in terms of the percentage yield or the ratio of final product to starting material.

yield coefficient (Y) A number that relates the amount of product generated for a given input. Coefficients are calculated on the basis of the assumed biochemical pathways and metabolic activities of the culture under question. For instance, for yeasts the substrate yield coefficient (Y_s) is 0.075 for an anaerobic system and 0.54 for an aerobic system using glucose as substrate. Under aerobic conditions, Y_s values for biomass production from various raw substrates are as follows: acetate 0.36; methanol 0.4; ethanol 0.68; n-paraffins 1.03. Values for Y_O (grams of cells per gram of oxygen used) range from 0.5 for n-paraffins to over 1 for glucose. Y_{cal} is used to denote the weight of cells in grams per kilocalorie of heat evolved.

yield stress The value of shear stress below which there is no flow.

yoghurt A fermented milk product that is produced from a standard mix of whole, partially defatted milk, condensed skimmed milk, cream and nonfat dried milk. Alternatively, milk may be partly concentrated by removal of 15–20 percent water in a vacuum pan. The culture organisms are a mixture of *Lactobacillus bulgaricus* and *Streptococcus thermophilus*.