

YEASTS AND ALCOHOL

Yeasts are a group of single-celled microscopic fungi. Not all are useful: some cause the spoilage of fruit and vegetables, some cause disease. Most of the yeasts used in making bread and alcoholic drinks are members of the genus *Saccharomyces*, or 'sugar fungi'. They metabolize sugar, produce carbon dioxide and alcohol. Strong odours or noxious substances are released, if at all, in only very small amounts. In this sense, they are 'clean' microbes. Essential to the yeasts' production of alcohol is their ability to survive on very little oxygen.

Yeasts introduce a variety of compounds into the grape juice or cereal 'wort' that contributes characteristic flavours, for example, they transform amino acids in the liquid into longer-chain alcohols. And when, after producing its limit of daughter cells by budding, a yeast cell dies, its enzymatic machinery digests the cell and releases its contents into the liquid.

Particular jobs are best done by particular kinds of yeasts. Baker's yeast, for example, should ideally produce little alcohol and a lot of carbon dioxide to do the work of raising bread dough. Two different species are commonly used in making beer. One, *Saccharomyces carlsbergensis* or *S. uvarum*, tolerates cold temperatures and falls to the bottom of the tank after fermentation; it is used in lager beers and in the bottle fermentation of champagne. The other, *Saccharomyces cerevisiae*, (*cerevisia* is Latin for 'beer'), does best at about 21°C, rises to the top of the tank, and is used for traditional English ales and beers. In wine making the situation is more complicated. The important yeasts are usually strains of a variety of *Saccharomyces cerevisiae* called *ellipsoideus* for their shape. But better than 100 different strains of several yeast species have been found growing on the skin or in the released juice of European grapes, and most starters, when they are used, contain at least several strains that may work in sequence during fermentation. In some districts, the grapes are allowed to ferment without a starter.

(from: McGee, *On Food and Cooking*, Unwin Hyman)

1 Say whether these statements are true or false and correct them when necessary.

- a. Yeasts are very tiny monocellular fungi.
- b. There are no harmful fungi.
- c. *Saccharomyces* are 'clean' microbes since they do not release bad odours nor harmful substances.
- d. Yeasts need a lot of oxygen to survive.

- e. Yeasts flavour the raw materials for making wine and beer.
- f. Carbon dioxide is needed to raise bread dough.
- g. More strains of yeasts are involved in wine making than in beer brewing.

2

Join these words into pairs to complete the definitions: acid, amino, baker's, bread, brewer's, cereal, dough, grape, juice, wort, yeast (2). Tip: copy the definitions in your indexed book.

- a. is a fungous substance used in the making of beer.
- b. is the liquid obtained by pressing grapes.
- c. is an infusion of malt consisting of a dilute solution of sugars that is fermented to form beer
- d. is the building block of proteins.
- e. is a fungous substance used to make bread raise.
- f. is a thick mixture of flour and water ready to be baked into bread.