

4.7: Malt

Malt is the name given to a sweetening agent made primarily from barley. The enzymes from the germ of the seeds become active, changing much of the starch into [maltose](#), a complex sugar. Maltose has a distinct flavor and is used for making yeast products such as bread and rolls. Malt is considered to be relatively nutritious compared to other sweeteners.

Malt is available as:

- Flour
- Malt syrup
- Malt extract
- Dried malt

The flour is not recommended since it can lead to problems if not scaled precisely. Malt syrup is inconvenient to work with, as it is sticky, heavy, and bulky. Dried malt is the most practical, though it must be kept protected from humidity.

There are two distinct types of malt:

- Diastatic malt flour is dried at low temperature, thus retaining the activity of the diastatic enzymes.
- Non-diastatic malt flour is darker in color. It is treated at high temperature, which kills the enzymes, and the result is non-diastatic malt.

Crushing malted grain in water produces malt syrup. This dissolves the maltose and soluble enzymes. The liquid is concentrated, producing the syrup. If the process is continued, a dry crystallized product called dried malt syrup is obtained.

Malt syrup has a peculiar flavor, which many people find desirable. It is used in candy, malted milk, and many other products. The alcoholic beverage industry is the largest consumer of malt by far, but considerable quantities are used in syrup and dried malt syrup, both of which are divided into diastatic and non-diastatic malt.

Both diastatic and non-diastatic malts add sweetness, color, and flavor to baked products. Both are valuable since they contain malt sugar, which is fermented by the yeast in the later stages of fermentation. Other sugars such as glucose and levulose are used up rapidly by fermenting yeast in the early stages of fermentation. Diastatic malt is made with various levels of active enzymes. Malt with medium diastatic activity is recommended. Normally, bread bakers will find sufficient enzymes in well-balanced flour from a good mill, so it is unnecessary to use diastatic malt.

When using dry diastatic malt, about the same weight should be used as liquid regular diastatic malt. Adjustment is made at the factory insofar as the enzyme level is increased in the dry product to compensate. Since the dry type contains about 20% less moisture than the liquid type, add water to make up the difference if dry diastatic malt is substituted for malt syrup.

The main uses of malt in the bakery are to:

- Add nutritive value, as it is rich in vitamins and essential amino acids
- Lengthen shelf life through its ability to attract moisture
- Help fermentation by strengthening the gluten and feeding the yeast Make products more appealing through browning of the crust
- Add unique flavor to products when used in sufficient quantity

Table 1 shows the suggested use levels for malt.

Table 1 Recommended level of malt for various baked goods

Product	Percentage of Flour Weight
White pan bread	0.5-1.5
Sweet goods	1.5-3.0
French/Italian bread	0.5-2.0
Whole wheat bread	5.0-9.0
Pretzels	1.5-6.0
Hard rolls	3.0-5.5

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