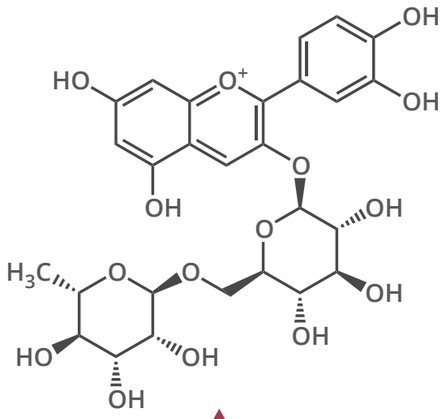
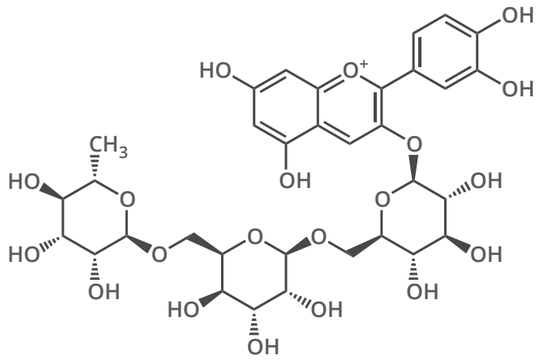
THE CHEMISTRY OF CHERRIES

Cherries are a popular summer fruit, and come in both sour and sweet varieties. Here we look at the chemical differences between the two.

SWEET CHERRIES AND SOUR CHERRIES

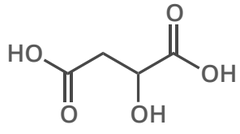


CYANIDIN-3-O-RUTINOSIDE



CYANIDIN-3-GLUCOSYLRUTINOSIDE

Cherry colour is due to the presence of compounds called anthocyanins. Sweet and sour cherries usually contain both of the compounds shown, but sweet cherries contain primarily cyanidin-3-o-rutinoside, whereas in sour cherries cyanidin-3-glucosylrutinoside is more abundant. Sour cherries also contain anthocyanins in greater concentrations.



MALIC ACID

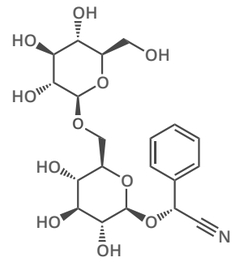
Sour cherries: 1.2–1.9%
Sweet cherries: 0.7–0.9%

Sour: pH 3.1-3.6

Sweet: pH 3.7-4.5

The tart flavour of sour cherries is due to the presence of a greater amount of malic acid. They have a titratable acidity of 1.2–1.9% of malic acid. Sour cherries also contain less sugar than sweet cherries.

POISONOUS PITS



AMYGDALIN

HYDROGEN CYANIDE

BLACK CHERRY
~2.7mg/g

RED CHERRY
~3.9mg/g

Cyanogenic glycosides are found in the seeds of a number of fruits, including apples and apricots, and cherries are no exception. Their pits contain amygdalin, a compound which, when broken down during digestion, releases poisonous hydrogen cyanide. While a large number of the pits would need to be eaten by humans to see toxic effects, much less is needed for animals. Other parts of the cherry tree, including the leaves, are also toxic to animals.