

Juice “Extraction” from Sugared Fruit

Equipment:

2 goblets
2 watch glasses
if necessary kitchen paper

“Chemicals”:

200 g of strawberries or 5 mandarins
sugar

Safety:

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Procedure:

The strawberries are washed and allowed to dry on kitchen paper; alternatively, the mandarins are carefully peeled and cut into the individual segments. One half of the dry, uninjured berries or the pieces of mandarins is filled in a goblet so that there is as much space as possible left at the bottom.

A lot of dry sugar is sprinkled on the other part of the strawberries or mandarins and the fruit is then left until the crystals adhere to the surface (which should be the case after approx. 15 min). Subsequently, the sugared fruits are cautiously filled in the same way in the second goblet, i.e. there should be again some space left at the bottom. After the sugar has become noticeably moist (which may take 20 to 60 min), a few teaspoons of sugar are added in such a way that as few crystals as possible fall to the bottom of the goblet. Finally, each goblet is covered with one of the watch glasses and left to stand for two days.

Observation:

After a few hours, watery syrup begins to gather on the bottom of the glass beneath the sugared fruit; after two days, a volume of 30 to 40 mL can be obtained. However, there is no formation of a liquid in the case of the unsugared fruit.

Explanation:

The solvent water migrates from the more diluted solution inside the plant cells through the semipermeable cell membrane into the more concentrated sugar solution outside (which contains less water). The decisive factor for this process is the chemical potential of the solvent, which is lower in the more concentrated solution due to the lower solvent content.

Disposal:

The fruits can be disposed of with household waste or organic waste.

