

## With or Without Sugar

### The scientific explanation

Sugar not only sweetens the sorbet - it is also responsible for its texture. When sugar is dissolved in water, the result is a syrup whose freezing temperature is lower than that of water alone - so the higher the sugar concentration, the lower the freezing temperature. As water starts to freeze in a syrup, the remaining unfrozen water becomes, in effect, a more concentrated syrup, resulting in small ice crystals in a sea of concentrated syrup. If the syrup is highly concentrated, less water will freeze in it, so its texture will become a kind of thick soup. The rule is to add four cups of fruit puree to one cup of sugar (about 20-30%). When the correct ratio of fruit puree to sugar is maintained, enough small ice crystals are formed, which are surrounded by sweet syrup, giving rise to a soft and creamy texture.