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Determination and Study of Reducing and Non-reducing Sugar from Different Food Samples

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Sugar is classified in two categories, reducing and non reducing sugar on the basis of free aldehydic and ketonic group . Reducing sugar contain free aldehydic group ketonic group and they reduce Fehling's solution & Tollen's Reagent. All monosaccharides are reducing sugar. Disaccharides may be reducing as well as non reducing . If the carbonyl groups of both the monosaccharide units in a diasaccharide are involved in linkage, the diasaccharides is non reducing i.e they cannot reduce Fehling solution & Tollen's reagent. On the other hand if one of the carbonyl group is free, the diasaccharides is reducing for eg:- sacrose. Sucrose is the most widely occurring diasaccharides . Sucrose is non reducing sugar . It indicates that the two hexoses must have joined through a glycosidic linkage between C-1 of glucose & C-2 of fructose . Reducing sugar can directly be titrated with a known amount of fehling solution which gives brick red colouration to the solution. This confirms the presence of free carbonyl group i.e. reducing whereas food samples containing non reducing sugar does not give this test. Fruit juice & sweet materials contains sugar. In the presence of reagents like Fehling A, Fehling B & Methylene Blue, reducing & non reducing sugar can be estimated.

Keywords: Reducing Sugar & Non-reducing Sugar Fehling solution A and Fehling Solution B.