DETERMINATION OF CELL SAP CONCENTRATION BY THE FREEZING POINT METHOD.¹

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It has been discovered that the freezing-point method can be used to determine the concentration of the soil solution directly in the soil from any maximum down to a very low minimum moisture content. The results yielded by this method are really revolutionary as far as the concentration of the soil solution is concerned. These data have been reported elsewhere.²

In the present note it is desired to call attention to the fact that as a result of its successful application in the aforesaid study the freezing-point method can now be used to investigate many other problems. The results of these studies probably will be as surprising as those of the concentration of the soil solution in the soil. One of these problems that may be mentioned at this time is the determination of the concentration of the plant cell sap. Instead of extracting the cell sap to determine its lowering of the freezing point and consequently its concentration, the latter can be ascertained directly in the plant. This can be accomplished by crushing the plant tissue, placing it in the freezing tube, inserting the thermometer, and following the procedure as described in the bulletin already cited. Considerable work has already been done upon the subject, and the results obtained have fulfilled the anticipation, namely, the concentration of the cell sap is greater when determined directly in the plant than in the extracted cell sap. (Michigan Agricultural Experiment Station, East Lansing, Mich.)

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