

### E0003

**Structural Preferences of *N*-Substituted Monosaccharide Derivatives.** W. H. Ojala,<sup>1</sup> S. E. Hanson,<sup>1</sup> T. M. Skrypek,<sup>1</sup> J. M. Smieja,<sup>1</sup> R. J. Sabo,<sup>2</sup> J. M. Ostman,<sup>2</sup> C. R. Ojala<sup>2</sup>; <sup>1</sup>Chemistry Dept, Univ. of St. Thomas, St. Paul, MN 55105 USA, <sup>2</sup>Chemistry Dept, Normandale Community College, Bloomington, MN 55431 USA.

Reaction of a nitrogenous base with a monosaccharide yields a derivative with a structure of interest on multiple levels. At the molecular level, is the derivative an open-chain Schiff base (I) or a cyclic glycosylamine (II)? Is the cyclic derivative a pyranosylamine or a furanosylamine? Do the ring and any substituents assume preferred conformations? At the crystal structure level, are certain intermolecular interactions favored? Do these lead to similarities in packing arrangement from structure to structure?

We have determined the structures of a series of nitrogenous derivatives of mannose, galactose, arabinose, and ribose. In most cases the crystalline derivative is a glycopyranosylamine. Among the *N*-aryl derivatives, those of a given sugar tend to be isostructural regardless of the substitution on the aryl ring. In addition to their interest as a class of compounds, these derivatives individually possess features worth noting; e.g. the *N*-phenylribopyranosylamine hemihydrate occurs in both <sup>4</sup>C<sub>1</sub> and <sup>1</sup>C<sub>4</sub> conformations in the same crystal structure, and the *N*-(4-nitrophenyl)-arabinopyranosylamine is a potential NLO material.

