



Results of honey analyses as printed by the IBM computer are discussed by Dr. J. W. White, Jr. and Dr. R. E. Lothrop, Assistant Director of the Eastern Utilization Research and Development Division. Dr. Lothrop is well known to beekeepers and processors, having devoted about ten years to honey research. — USDA Photo by M. C. Audsley.

# A Survey of American Honeys

## 10. Summary<sup>1/</sup>

This is the last of a series of ten articles  
on the different honeys of America.

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<sup>1/</sup> Last in a series of articles describing a large-scale study of the composition of honeys from over the United States. Complete data interpretation and conclusions will appear in a forthcoming Department of Agriculture publication.

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**I**N THE PREVIOUS articles in this series, we have attempted to describe briefly the high-lights of our analytical survey of the composition of American honeys. We have presented average values for the composition of honey, based on 490 analyses, and for honeydew based on 14 analyses. A listing of 74 types of honey and 4 honeydews has been included which shows generally how the various kinds of honey compare with average values and with one another.

The kinds of sugars, rare and common, that are found in honey were discussed. All honey samples were found to have the same sugars present, but the relative amounts did differ considerably.

Differences in composition of honey have been considered that can be ascribed to area of production. Probably the only reliable way to assess this factor is by statistically comparing average values for several samples of the same type of honey from different areas.

In other articles the relationship of color and of granulating tendency of honey to its composition were discussed. It was shown that the granulating tendency of honey can be predicted from its dextrose and water content. A D/W ratio of 1.70 or less generally means a non-granulating honey, while a value

of 2.10 or more predicts a relatively rapid complete granulation. Values between these imply partial granulation.

In comparing dark honeys with light honeys, we have confirmed that the former show higher ash and nitrogen contents. We have also shown that the dark honeys are lower in dextrose and levulose content, granulate less, and are higher in acids.

Storage of honey at ordinary temperatures has been seen to cause considerable loss in free simple sugars, increases in more complex sugars, some increase in acids and rather considerable (3% per month) losses in diastase content.

The laboratory work in this project, representing nearly 10,000 separate analyses, was carried out by the individuals named in the first article in this series. We could not have done this work without the active cooperation of hundreds of honey producers, packers, extension specialists, apiary inspectors, national and state organizations and their officers and others. They cannot be named here, but we are greatly appreciative of their cooperation.

All of the individual analytical results, complete descriptions of all samples, and names of those cooperating appear in the final technical bulletin to be published by the Department of

Data obtained by analysis of honey was processed on the computer by Charles Hopkins of the Computing Laboratory of the Agricultural Research Service at Beltsville.—USDA Photo.



Agriculture. This will also contain descriptions of the analytical methods used, a review of the literature and show the statistical evaluations of the data.

In addition to the principal tables of data, averages are included for all floral types and blends in which more than one representative was present. Average values of all honey samples as classified by plant family is given, and a table showing the average composition of honey from each of the 47 states having samples, as well as a map showing sample distribution.

No mention has been made in these articles of the flavor of honey. This does not mean that it is not considered important, but simply that it is difficult to measure and practically impossible to describe. It is, of course, probably the most important single attribute of honey, and possibly the one that is least understood chemically. More attention should be given to flavor and its maintenance in honey, especially protection against processing factors within our control.

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