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How To Lessen the Content of Lead in Maple Products

(PROGRESS REPORT)

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The suggestions made and the information set forth in this publication are, in the judgment of the writer, the best which are now available. Much research work will be carried on during the coming sugar-bush season with a view of attempting to discover some practicable means of preventing contamination of maple products with lead. Obviously, the results of such work will not be available until after the 1938 sugar season has closed. Meantime, for 1938, it behooves the producers to take such precautions as are practicable to lessen the extent of contamination or, indeed, to eliminate it entirely. It is recommended that sugar makers:

Gather sap often and boil it promptly.

Beware of sour sap.

Use every practicable means of keeping equipment clean. Discard terneplate evaporators.

Be especially careful in the use of terneplate buckets and other equipment.

Remove lead paint from all old equipment.

Use as little solder as possible in repairing equipment—and if possible, only pure tin solder.

Be careful in buying new equipment.

UNTIL FURTHER ADVISED, use no paint or enamel as a protective coating on buckets, etc.

Have their sirups tested for lead content at the State Department of Agriculture, in Montpelier. DO NOT SEND THE BEST SIRUP if

1. Gather Sap Often and Boil It Promptly.—If proper equipment is used and sap is promptly gathered and boiled, the sirup should contain little or no lead.
2. Beware of Sour Sap.—Sap should not be allowed to stand for a long time in buckets or tanks,

properly. They usually have proved unsatisfactory. Many chemists and others have tested several commercial products under laboratory conditions. Thus far, no protective coating seems to have been found which is surely successful, although some give much promise. After much discussion, the committee appointed by the Vermont commissioner of agriculture to study the situation at a meeting held December 21, 1937, stated that:

"It is the sense of this committee that it is unwise and impracticable to recommend to producers that they coat contaminating surfaces with any material that has not been tested in the field for one season. Such tests are to be made (during the spring of 1938 and the committee is to set up a suitable organization so that the coating found to be most suitable may be expeditiously applied to all unsatisfactory equipment in the summer of 1938."

It further expressed the opinion that:

"Meetings of producers should be called in which the seriousness of the situation should be brought to their attention as well as ways of avoiding lead contamination. Other sources of contact with the producer, such as the Grange, Farm Bureau and Extension Service, should be utilized in spreading the information."

Extensive trials will be carried on in the sugar bush in Quebec, New York, Vermont (under Experiment Station auspices), and else-where during the coming sugar season. Several protective coatings will be used under practical conditions. It is hoped that some feasible means of excluding lead at its source may be found, in which event Vermont sugar makers will be promptly advised in order that the coating may be applied far in advance of the 1939 sugar season.

IT IS TO BE REGRETTED THAT VARIOUS PARTIES, ILL-INFORMED OR MISINFORMED, ARE SUGGESTING THIS, THAT, OR THE OTHER PAINT FOR USE ON SAP BUCKETS. IT IS HOPED THAT FEW SUGAR MAKERS WILL BE THUS MISLED.

9. Deleading may be done in processing plants, but no satisfactory process has been devised that the producer can use.

It is claimed by some that filtering hot sirup through a felt strainer will remove some of the lead. It may very well remove coarser particles if any such occur; that it will lessen the amount in solution or in fine suspension is not as certain.

10. Testing for Lead.—The testing service at the office of the commissioner of agriculture in Montpelier will be continued in 1938. Sugar makers should understand that a test of one sample of first-run sirup does not tell the whole story. Samples should be taken (a half-pint) either from the evaporator, settling tank, or shipping container. They should represent the average rather than the best. It were better to know the worst by having the worst tested than to fool one's self by getting only the best tested. Packages should be carefully packed, properly labeled and carriage charges should be prepaid. The analysis fee—50 cents per sample—should accompany the package.

Important

It should be clearly understood that the fact that no suggestions are made for the time being concerning protective coatings does not mean that sugar makers should feel free to proceed as in the past, taking no special pains whatsoever to exclude lead. On the contrary, they should use every feasible means to that end, gathering sap frequently, boiling it promptly, preventing the souring of sap insofar as possible, doing away with terneplate evaporators and being especially careful in the use of terneplate buckets, etc., removing lead paint from buckets, tanks, etc., covering lead solder surfaces with pure tin solder, the latter being a difficult task. The reason why no suggestions as to protective coatings are made is simply this: that the committee representing the industry, appointed by the state commissioner of agriculture, having canvassed the entire situation, does not at the present time advise the use of coatings, preferring to wait until several such have been tried out under the practical conditions obtaining in the sugar bush before it makes definite recommendations.