

# Aconitic Acid in Sugar Beets

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In light of recent interest in the use of aconitic acid and its derivatives in the plastics industry (1)<sup>2</sup> and because of new developments in methods of recovery of this substance from plant juices, especially sugar bearing plants, (2, 3) an investigation was undertaken to determine the quantity of aconitic acid in sugar beets.

The finely ground beet samples were digested two hours in a 1-2% sulfuric acid solution filtered and analyzed for total aconitic acid (free and combined) by the Saffran-Denstedt modification of the Furth-Herrmann colorimetric method (4). Data obtained are shown in the following table:

Sample	Origin of Sample	Percent Aconitic Acid (Original Weight Basis)	Number of Samples
Beet roots	Sacramento Valley, Calif.	0.083	4
Crowns	Sacramento Valley, Calif.	0.084	4
Leaf Blades	Sacramento Valley, Calif.	0.031	4
Leaf Petioles	Sacramento Valley, Calif.	0.011	4
Leaf Blades	Arkansas Valley, Colo.	0.028	2
Leaf Petioles	Arkansas Valley, Colo.	0.009	2
Beet roots	Imperial Valley, Calif.	0.021	9
Whole Leaves	Imperial Valley, Calif.	0.035	8
Pulp Press Water	Imperial Valley, Calif.	0.002	15

As a check of the Furth-Herrmann method two large samples of pulp press water (the water pressed from the exhausted cossettes) were evaporated down and analyzed by the Roberts-Ambler decarboxylation method (5). The results were 0.007% and 0.002% for the Furth-Herrmann method compared with 0.0076% and 0.0057% for the Roberts-Ambler method. In light of the very small amounts involved these checks were considered satisfactory.

We believe that in view of the very low amount of aconitic acid found in this investigation commercial utilization of sugar beets or their by-products as a raw material for the recovery of this product is not feasible.

## Literature Cited

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<sup>2</sup> Numbers in parentheses refer to literature cited.