An Investigation of the Causes of Sugar-apple Leaf Scorch

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Summary

The objective of this investigation was to find out if the leaf scorch of sugar apple（*Annona squamosa* L.）C.V.Large Scale was damaged by salt spray. The necrotic areas first appear at the leaf tips and upper margins on old and young leaves,as the condition of the plants worsens,the scorch spreads towards the midrib between the leaf veins and gradually progresses in inverted shape and eventually the leaves shed.

The first sugar-apple orchard located at Tunghe village on whicn leaf scorch is detectable is 200 meters from the Pacific Ocean and the second sugar-apple orchard located at Peinan village on which leaf scorch is not detectable is 13 kilometers from the Pacific Ocean. The leaves and the fruits of the two orchards were sampled for comparing the difference in Cl and Na contents.

The contents of ascorbic acid, oven dry weight, calories,S, P, K and Cu of summer fruit pulp in 1997 at Tunghe were significantly higher than that of at Peinan respectively，but moisture content just opposite；the rest of analytic items were not obviously different be tween the two locations.

The fruits of the summer and the winter in 1997 as well as the summer （two times,Jan.5 and Jan.22）in 1998 were sampled for analyzing the concentrations of the fruit Cl and Na.On the fresh weight basis,the concentrations of the fruit Cl and Na at Tunghe were 76.6,59.0,45.4,182.8,199.5mg /100g, and 44.6,28.5,17.9,33.4,27.1mg/100g, and at Peinan were53.7,54.0,34.9,113.5,112.0mg/100g, and 28.0,7.8,16.5,19.7,21.3mg/100g , respectively, the former was significantly higher than the latter. The concentrations of the fruit pulp Cl and Na at Tunghe were missing,61.5,103.3,106.8,110.2 mg/100g, and 30.3,37.3,24.4,37.1,30.5mg/100g ,and at Peinan were missing,32.5,69.0,60.1,51.3mg /100g, and 25.6,8.4,19.3,22.5,18.5mg/100g , respectivly, the former was remarkably higher than the latter。

The leaves of the sugar apple were collected for analysis on Oct.,Nov.,Dec., in 1997 and on Jan .,Feb.,Aug.,Sept.,Oct.,Nov.,Dec., in 1998 and Jan.,Feb.,Jun.,Jul., in 1999. On dry weight basis,the leaf Cl and Na concentrations at Tunghe were 6740,11265,8946,9563,10028,6600,4747,4759,4852, 5598,5211,7321,5526 μg/g and missing, 1988,1038,988,1099,543,615,636,865,1290,1026,627,609 μg/g,respectively,and at Peinan were 2845,4416,4241,4876,5547,4353,3847,3852,3570,3006,2338, 2466,4289,4725 μg/g, and missing, 295,298,362,338,469,466,473,476,476,451,516,425,481 μg/g, respectively, the former was significantly higher than the latter。

Based on the data of two years investigation, no matter summer fruit or winter fruit, the Cl and Na concentrations of fruit skin, fruit pulp, and leaf at Tunghe were remarkably higher than Peinan. It indicated that the leaf scorch of the sugar apple near the Pacific Oceam was caused by excessive amount of Cl and Na from salt spray, and the tentative leaf standards for visible leaf scorch symptoms were Cl over 5000 μg/g（0.5%）and Na over 800 μg/g（0.08%）。

Keywords：Investigation, Sugar apple, Leaf scorch, Salt spray.

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