

CANOPY ION EXCHANGE MECHANISMS

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Cooperators

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Objectives

The broad goal of this work is to better understand mechanisms controlling foliar ion exchange (foliar leaching and uptake) in forest trees.

Methods:

Integrated field and laboratory experiments are being conducted with sugar

Multiple paired branches were selected to receive treatments on two replicate open-grown trees. One branch per pair was manually defoliated in early July.

Significant Findings

RATIO OF STEM/WHOLE-BRANCH LEACHING ON A SURFACE-AREA-BASIS

Cl	Na	K	Ca	Mg	NO ₃	SO ₄	SC
1.84	1.02	1.02	1.73	2.45	1.5		

[REDACTED]

The relative small surface area of stems however contributes to its contribution in

[REDACTED]

RATIO OF STEM/WHOLE-BRANCH ION QUANTITY IN THROUGHFALL

Na	K	Ca	Mg	NO ₃	SO ₄	Cl
0.69	1.03	0.16	0.92	0.03	0.96	1.06

The ions contributed to the throughfall amount to 100% of the total quantity

[REDACTED]

Separate year

In 1992 the objective is to evaluate the contribution of leaf surface

[REDACTED]

Identifying Sources

[REDACTED]