

Effectivity of lime sulphur as a flower thinning agent

Effektivität von Schwefelkalk zur Blütendünnung

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Introduction

In 1999, various experiments were carried out to test the thinning properties of lime sulphur on Elstar in the Netherlands. Experiments were carried out under different conditions, using different spraying techniques. Results ranged from very good to insufficient. What causes this variability?

Method and materials

The spray was applied using a hand flower sprayer, a spraying can and an orchard sprayer. The trials were carried out under different conditions. Individual flower clusters were labelled. Fruitlets were counted after fruitset and June drop.

Thinning % by lime sulphur and circumstances in different experiments

	Technique	Water/ha l/ m tree height	Time of day	After fruitset	After June drop
Experiment 1: 1 x 1,6 vol% ¹	Flower sprayer	Abundant	21.00 h	40 %	56 %
Experiment 2: 1 x 1,6 vol% ¹	Spraying can	885	21.00 h	35 %	52 %
Experiment 3: 1 x 1,3 vol% ² 2 x 1,3 vol% ³	Orchard sprayer	600	11.00 h	12 % 16 %	0 % 5 %

¹ 2 days after full bloom ² full bloom ³ full bloom and 5 days after

Conclusions about lime sulphur as a thinning agent:

- 12-40% fruit thinning after fruitset; equal to conventional thinning agents.
- 0-52% fruit thinning after June drop. In exp. 1 and 2 the extra thinning after fruitset was caused by Apple sawfly. In exp. 3 the initial thinning results were compensated by less natural thinning.
- In exp. 1 and 2 there was a significant reduction of hand labour. In exp. 3 there was hardly any reduction of labour in hand thinning after June drop, but possibly more flower initiation for the following year.
- No phytotoxicity and no fruit russetting.
- Decrease of 0,4 seeds/fruit.

Questions for further research

What causes the variability in results? Is it best to apply the agent while tree is in full bloom? Is efficacy improved by using more water and applying in the evening?

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Zusammenfassung

In 3 verschiedene Umstände ist die Blütenausdünnung vom Schwefelkalk versucht. Die Wirkung wechselt von 12 bis 40% abhängig von Spritzgerät, Anwendungszeit und Wassermenge. Die Daten nach Junifall sind gestört durch schweren Apfelsägewespenbefall. Durch die Spritzungen ist die Dünnungsarbeit im Juli kaum verringert, aber die Chance auf Blütenknospen für nächsten Jahr verbessert. Über Nebenwirkungen von diesen Anwendung von Schwefelkalk ist noch zu melden: keine Blattbeschädigung, keine Berostung und 0,4 Samen weniger pro Frucht.