

Test Report Soil Fatigue January 2012 Test 34140- PRI- 037

Test 34140 Soil Fatigue Apple 2011

1. Test Description

Parcel	Test	Size	Nbr Trees	Plant Date	Duration
KAD - M2 - 07	34140	350 m ²	100	3/11	10 years

Soil Fatigue Apple 2011
Which measures can be taken to counteract soil fatigue?

Test Description	
Added substances to the plant hole::	
Var. 2: Mixture KAD	Substitutional substrate 15 l/Baum RhizoVital Dipping: 0,04 % solution Watering: 0,08 % solution 1 l/Tree, Repeated after 3 months Trichoderma watering: 0,2 % solution 1 l/Tree After 6 weeks 0,1 % solution 1 l/Tree Manna Soil Activator: 75 g /Tree
Var. 3: Mixture Kessler	GreenFit Koba: 75 g on wet root Substitutional substrate: 15 l / Tree OPF granular 11-0-5 20 g / Tree surface
Separating Tree:	Wellant / M 9

Preparatory Culture	Apple
Planting Material	Knipbaum
Planting Distance	1.00 m x 3.20 m
Added Substances	See variations
Cultivation Form	Slender spindle
Cultivation Method	IP
Test setup	5 trees x 4 iterations

@	Factor A (Sort)	Trees	VS	Origin
01	PRI - 037	80		BS van Rijn Wamel

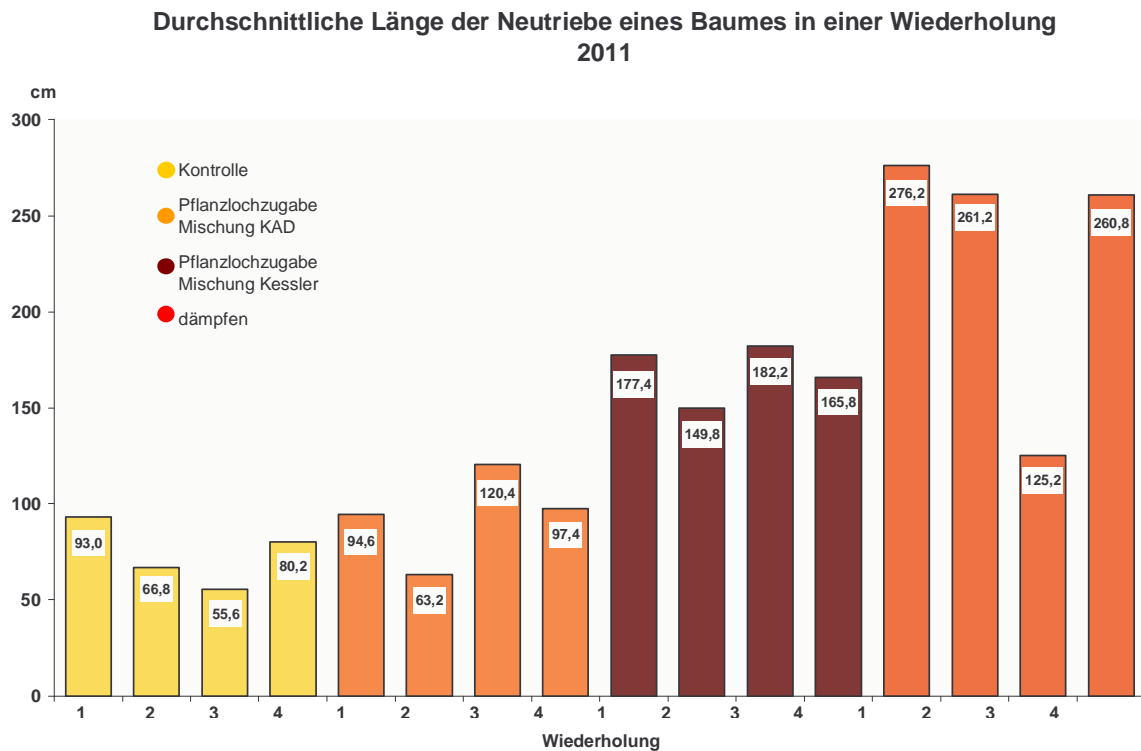
@	Faktor B (Root Stock)	Trees	VS	Origin
01	M 9	80		

@	Faktor C (Treatment)	Bäume
01	Control	20
02	Added substance to plant hole: Mixture KAD	20
03	Added substance to plant hole: Mixture Kessler	20
04	Steaming: 4 hours , 30-35 cm deep, 85°C	20

2. Sprout Length

Average sprout length of PRI-037 July/August 2011

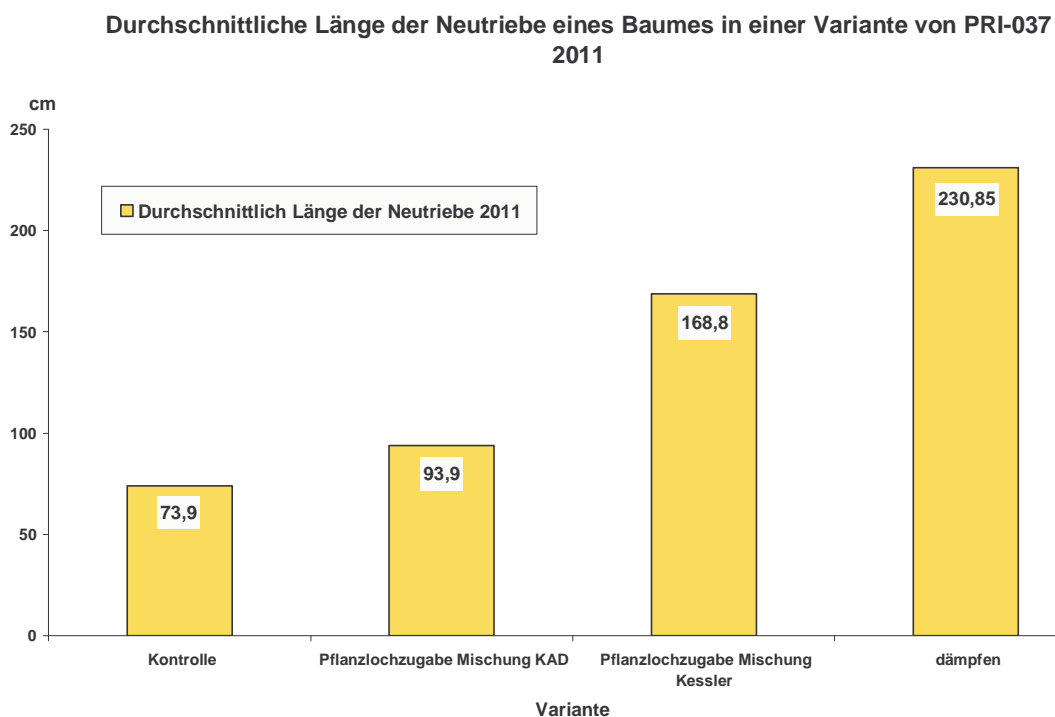
a) Per iteration



(from left to right: control, mixture "KAD", mixture "Kessler", soil steaming)

Average length of new shoots of trees per iteration 2011

b) Per variation



Average length of new shoots of one tree per variation of PRI-037 2011

(from left to right: control, mixture "KAD", mixture "Kessler", soil steaming)

3. Leaf Quality

Findings of plant analysis in July 2011

a) Main nutrients

Treatment	% of dry mass					
	Nitrogen	Sulfur	Phosphor	Potassium	Magnesium	Calcium
Control	2,68	0,28	0,27	1,66	0,16	1,1
Added substance to plant hole: Mixture KAD	2,76	0,29	0,24	1,59	0,16	1,06
Added substance to plant hole: Mixture Kessler	2,68	0,29	0,21	1,55	0,17	1,33
Steaming	2,89	0,30	0,21	1,33	0,19	1,32

b) Micronutrients

Treatment	mg/kg dry mass				
	Boron	Copper	Manganese	Iron	Zinc
Control	19,9	22,8	88,6	75,6	65,9
Added substance to plant hole: Mixture KAD	19,5	25,5	95,0	70,8	71,4
Added substance to plant hole: Mixture Kessler	18,9	25,8	112,1	82,2	74,4
Steaming	18,6	25,2	106,8	71,8	72,8

c) Potassic calcium values

Diagramm der Blattanalyse vom Juli 2011 von Kali Calciumwerte der Sorte PRI - 037 auf Pflanzlochzugabe bei Bodenmüdigkeit

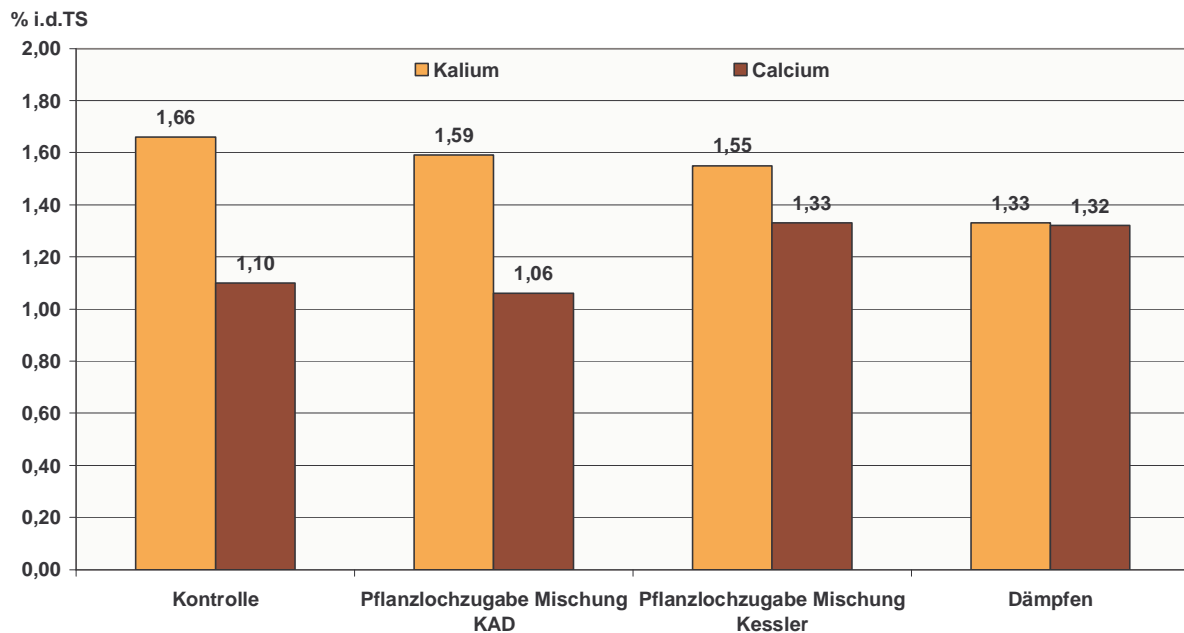


Diagram of potassic calcium values from leaf analysis made on July 2011 of sort PRI 037 per variation (from left to right: control, mixture "KAD", mixture "Kessler", soil steaming)

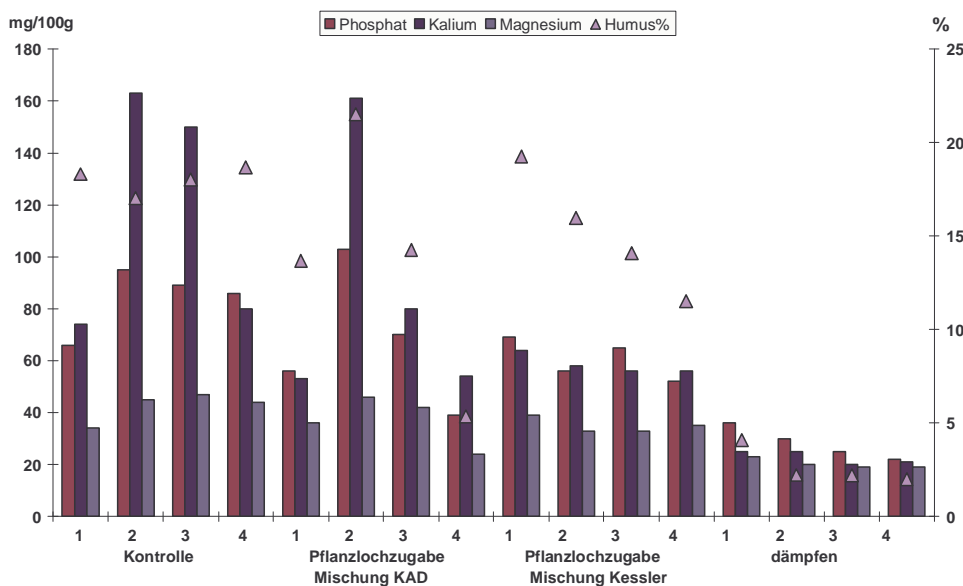
Potassium Calcium

4. Soil Quality

Findings of soil analysis November 2011

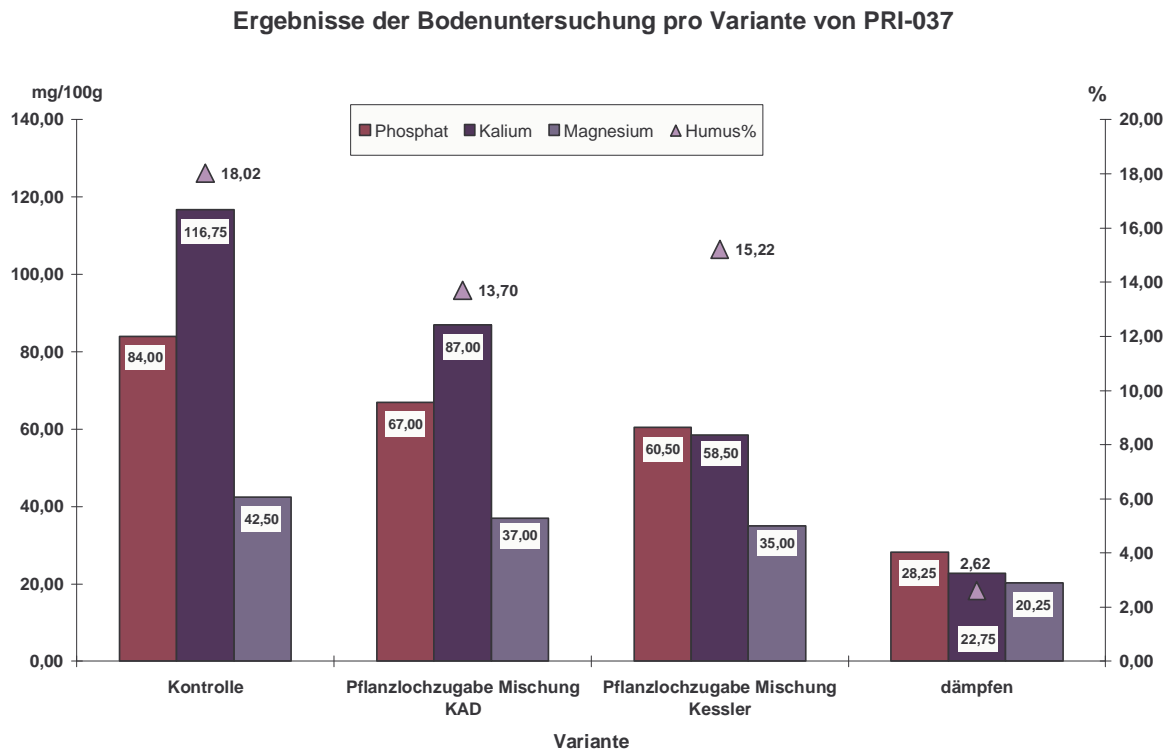
a) Per iteration (from left to right: control, mixture "KAD", mixture "Kessler", soil steaming)

Ergebnisse der Bodenuntersuchung pro Wiederholung von PRI-037



Results of soil analysis per iteration of PRI-037

b) Per variation

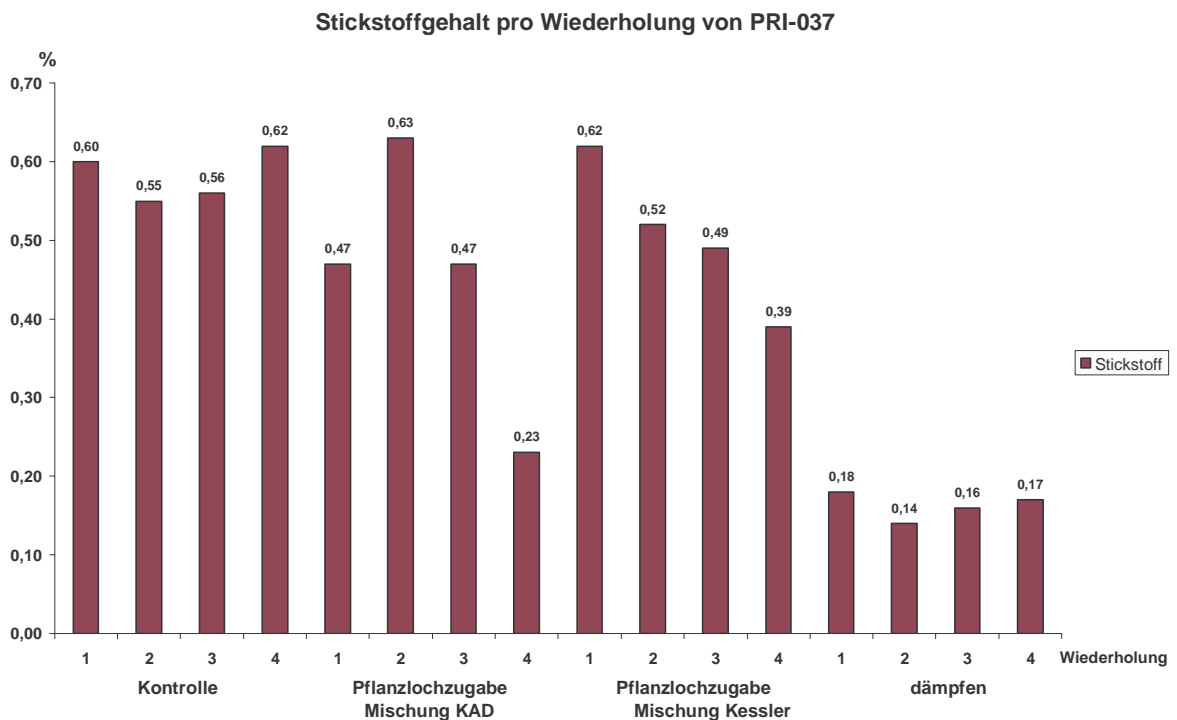


Results of soil analysis per variation of PRI-037

Phosphate, Potassium, Magnesium, Humus

(from left to right: control, mixture "KAD", mixture "Kessler", soil steaming)

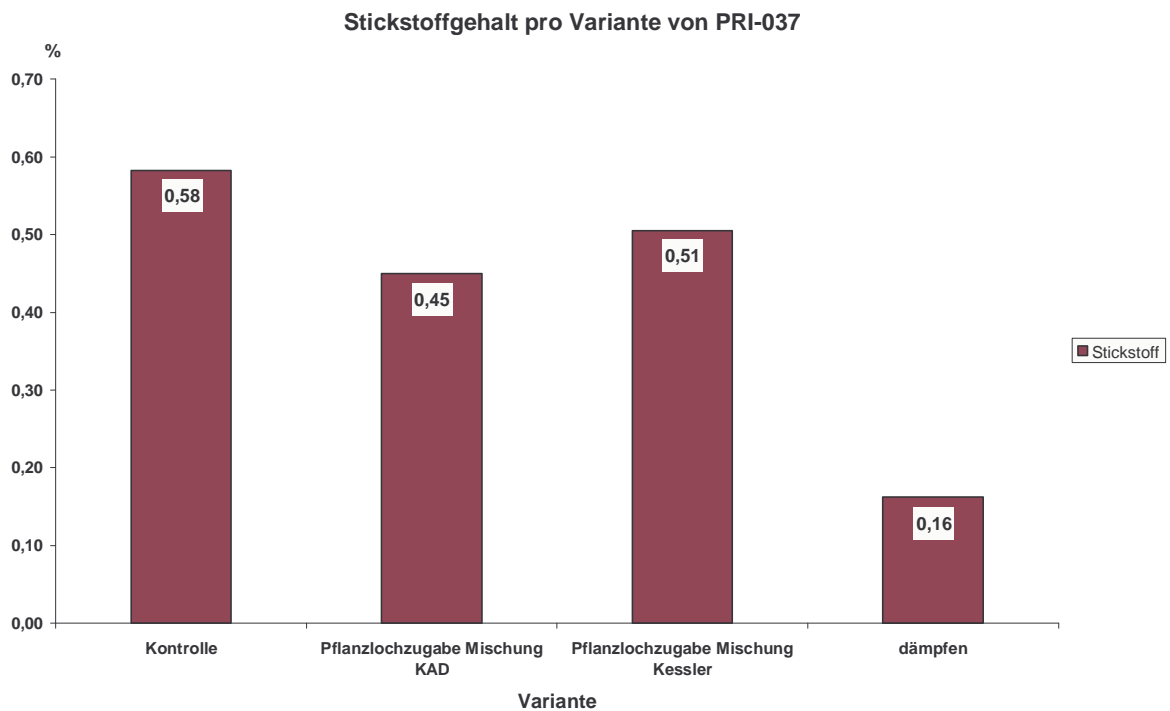
c) Nitrogen content (Total nitrogen) per iteration



Nitrogen content per iteration of PRI-037

(from left to right: control, mixture "KAD", mixture "Kessler", soil steaming)

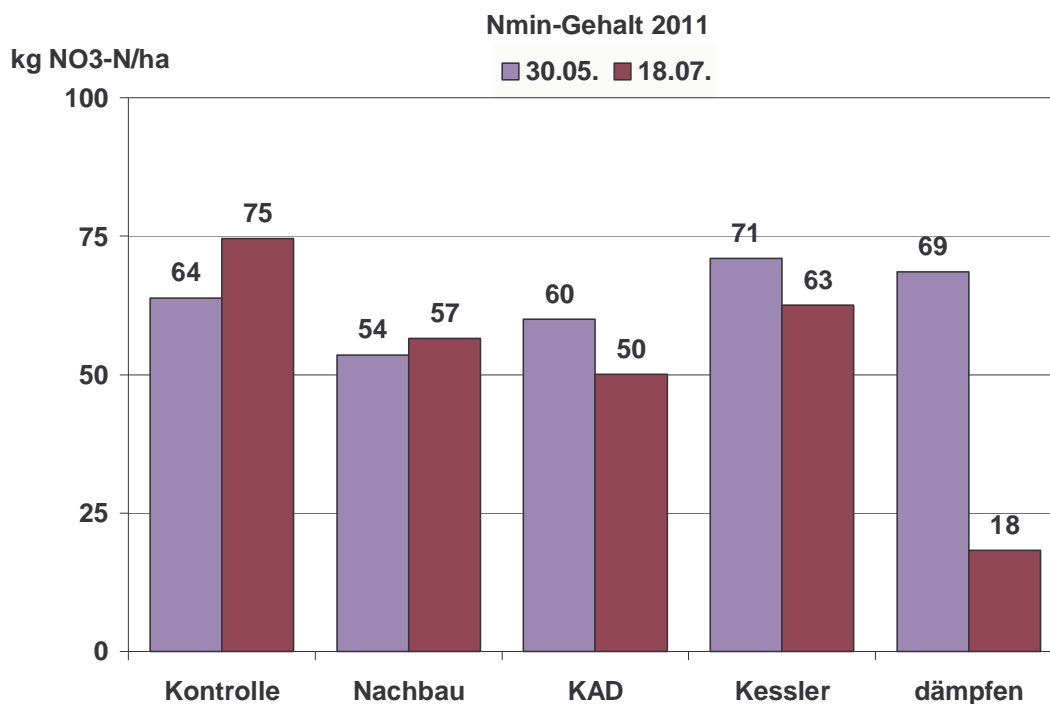
d) Nitrogen content (Total nitrogen) per variation



Nitrogen content per variation of PRI-037

(from left to right: control, mixture "KAD", mixture "Kessler", soil steaming)

e) Nitrate content per variation



Nitrogen content 2011

(from left to right: control, mixture "KAD", mixture "Kessler", soil steaming)