Grondontleding by pekanneutbome

- Dries Bloem

- Hannes Hattingh

Pekan sensitief vir soutskade

- Osmotiese skade aan plant
- Wichita: meer sensitief
- Riverside: meer tolerant
- Elektriese geleiding EG in versadige grondpasta

EG Gewastoleransie

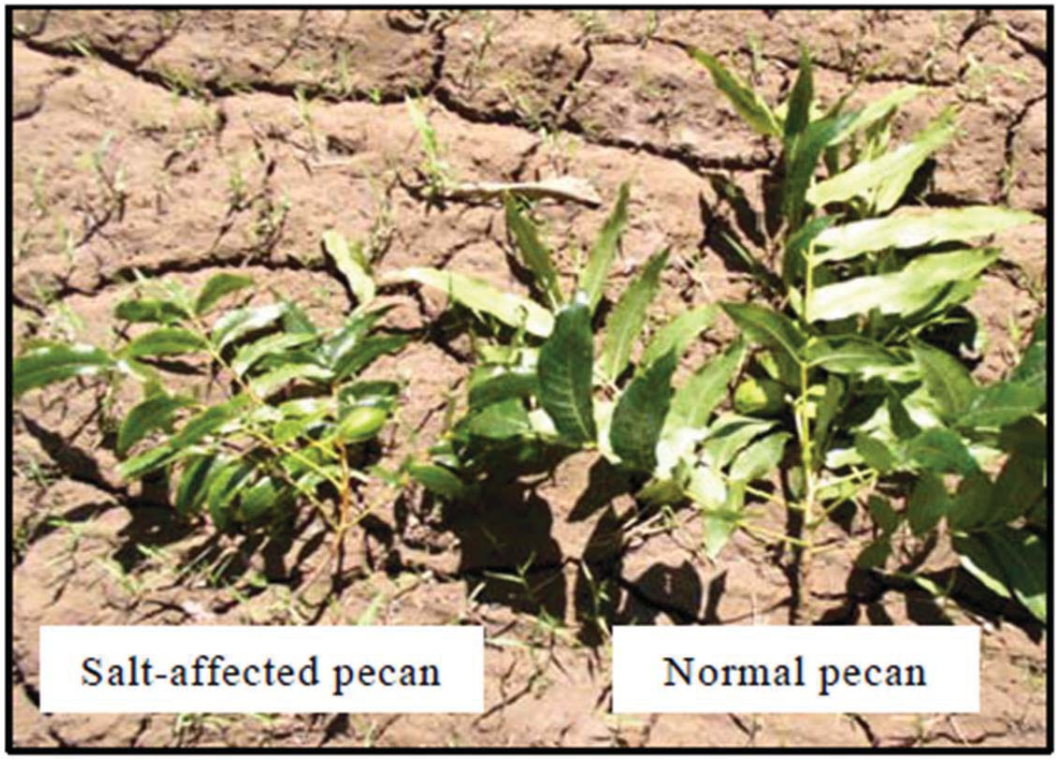
Sitrus	170 mS/m
Pekanneut	190 mS/m
Lusern	200 mS/m
Uie	216 mS/m
Aartappels	170 mS/m
Grondbone	320 mS/m
Mielies	350 mS/m
Sonneblom	480 mS/m
Sojabone	500 mS/m
Koring	600mS/m
Sorghum	680 mS/m
Katoen	770 mS/m

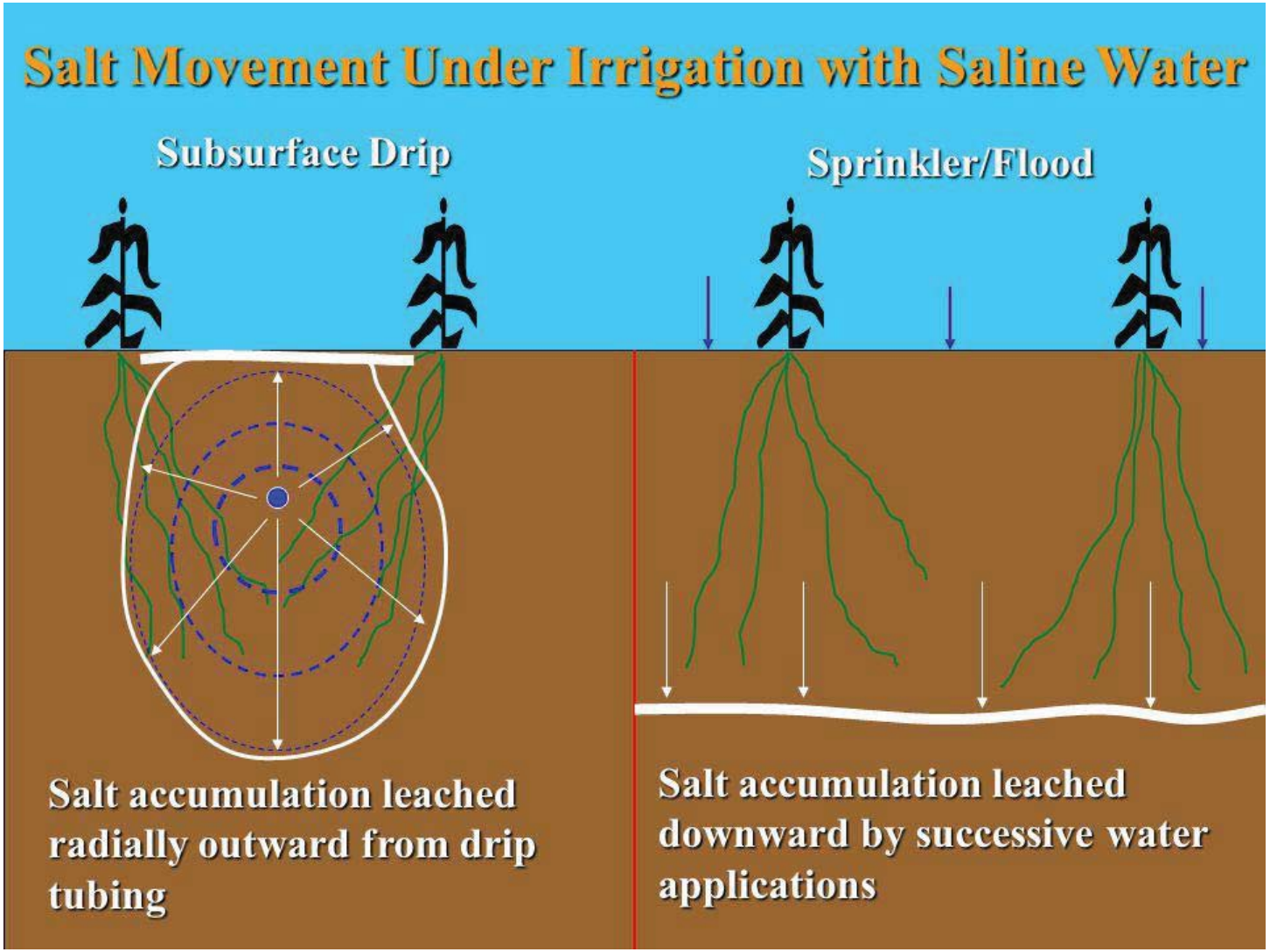
Bronne van sout in grond

- Besproeiingswater
- Kunsmis
- Mis en kompos
- Gips:
- 1ton/ha = 40 mS/m

Simptome: Soutskade

- Swak wortelontwikkeling
- Plante toon vogstremming
- Swak groei
- Kleiner neute
- Blaarrante skroei




Salt Movement Under Irrigation with Saline Water
Subsurface Drip
Sprinkler/Flood
Salt accumulation leached radially outward from drip tubing
Salt accumulation leached downward by successive water applications

Voorbeeld

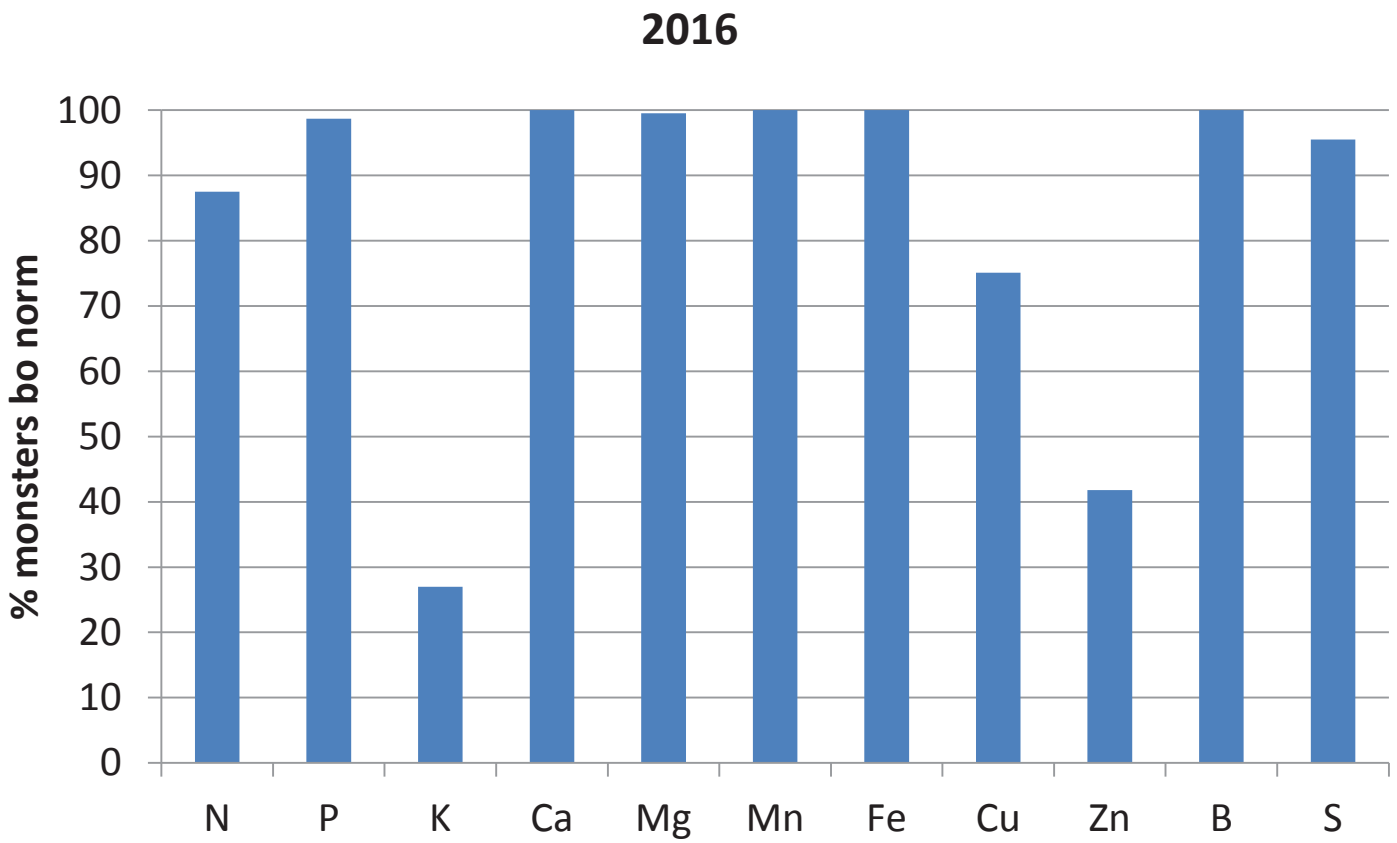
Monster No	EG mS m^{-1}
Huisblok 0-15	62
Huisblok Middel 50	80
Huisblok Onder 85	371
Langs Huisblok 0-15	76
Langs Huisblok Middel 50	137
Langs Huisblok Onder 85	1128

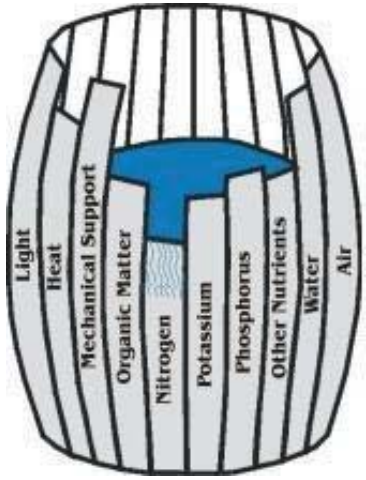
Bestuur soute

- Monitor EG in bogrond en ondergrond
- Loog soute uit
- Gips: maks 3 ton/ha = 300 gram/m^2
- Mis: maks 10 ton/ha = 1 kg/m^2
- Kies gedreineerde grond vir nuwe ontwikkeling
- Waterontleding

Blaarontledings 182 bome

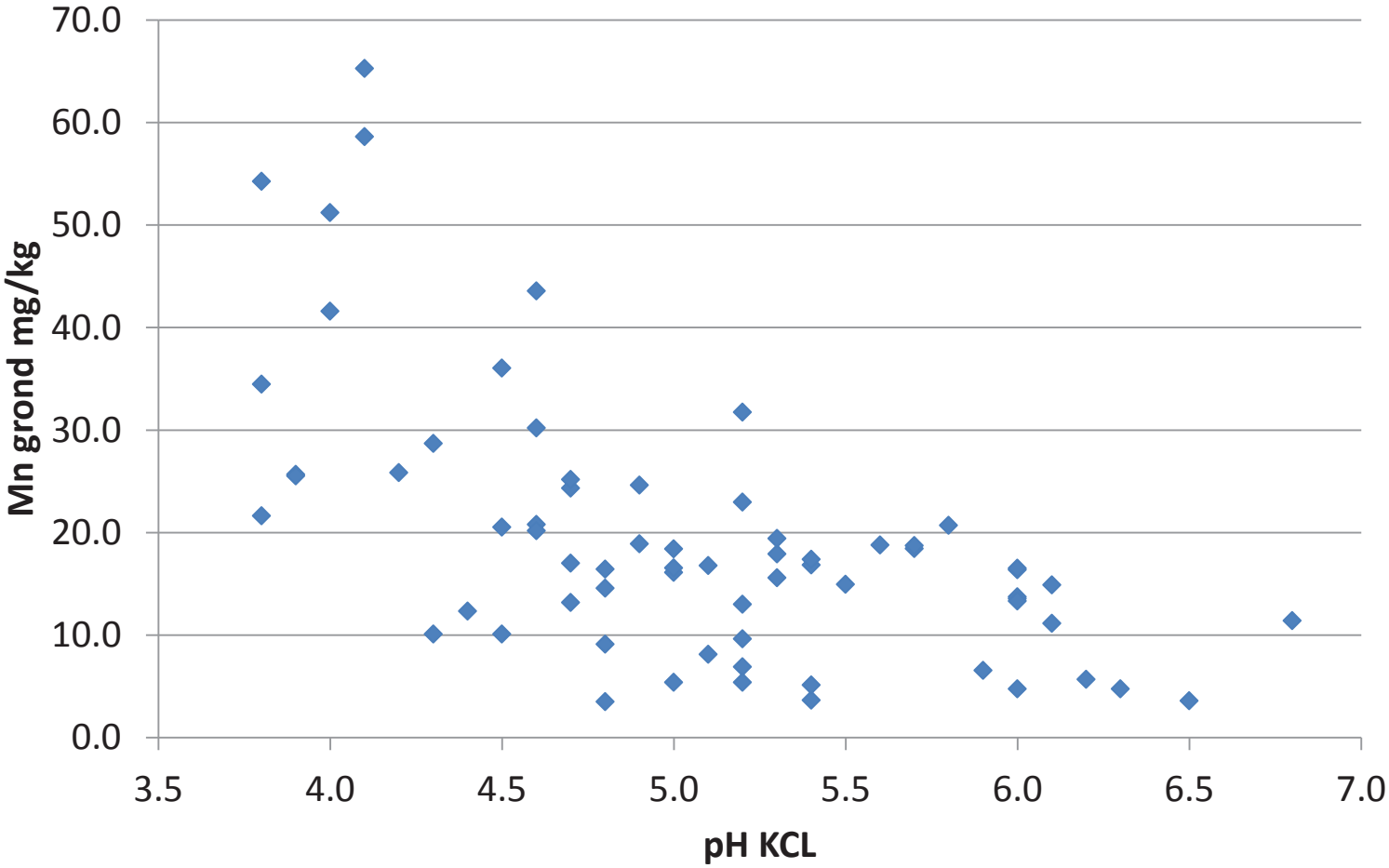
	N	P	K	Ca	Mg	S	Mn	Fe	Cu	Zn	B	N:K
	%						mg/kg					
Gemiddeld	2.89	0.14	1.09	1.59	0.58	0.18	814	208	6	40	99	2.5
Norm Tekort	2.50	0.12	1.20	0.80	0.30	0.15	100	50	5	50	15	
Norm Oormaat	2.90						1620					2.0

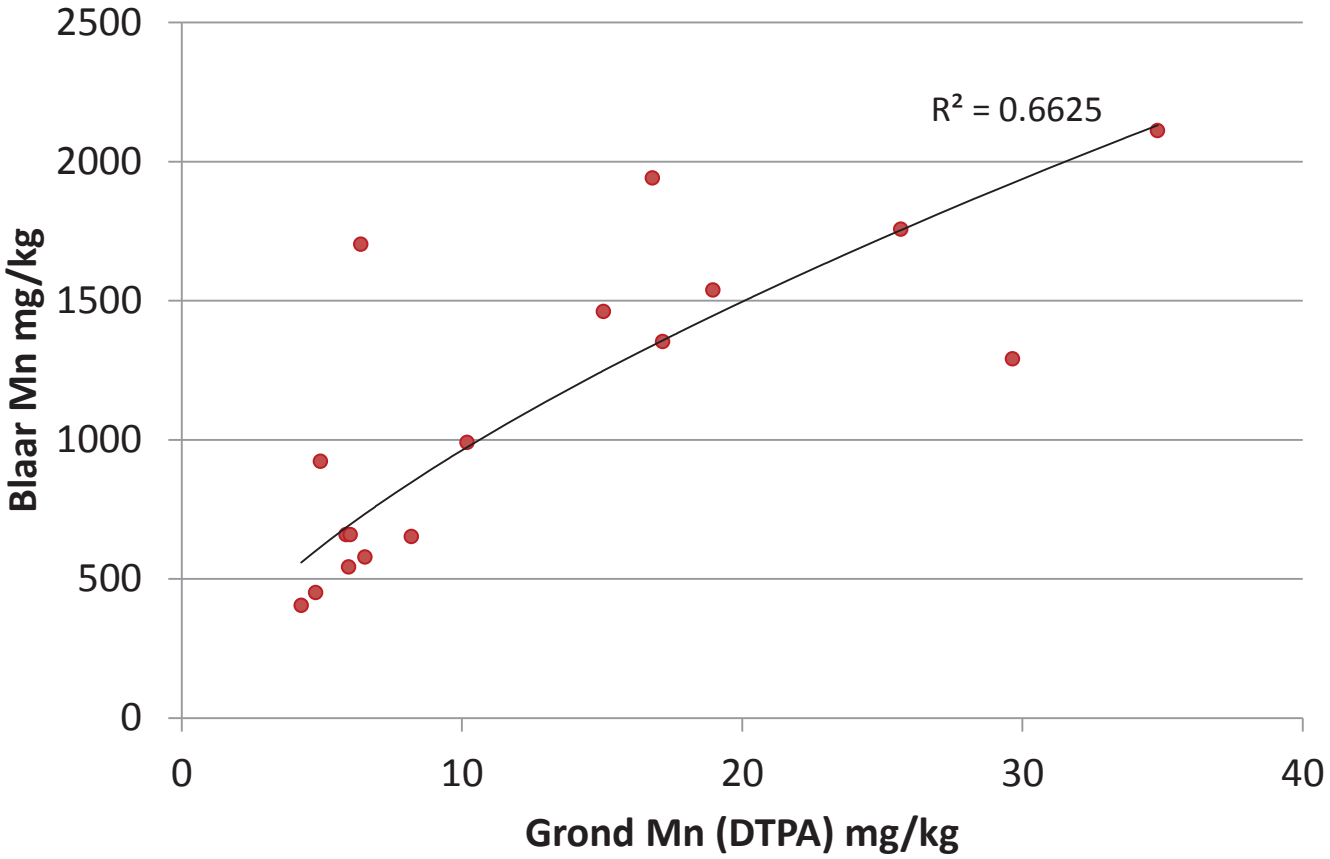

2016
% monsters bo norm
100
90
80
70
60
50
40
30
20
10
0
N
P
K
Ca
Mg
Mn
Fe
Cu
Zn
B
S


Light
Heat
Mechanical Support
Organic Matter
Nitrogen
Potassium
Phosphorus
Other Nutrients
Water
Air

Blaarmonster statistiek

- Geen monsters met Ca, Mg, Mn, Fe, B tekort
- 27% voldoende K
- 42% voldoende Zn
- 75% voldoende Cu
- Wells & Wood (2007). N<2.9%; N:K <2.0
- N% in blare. 48% hoër as 2.9%.
- N:K in blare. 92% groter as 2.0
- Nunez Morino *et al* (2012) Mn < 1620 mg/kg.
- Mn in blare. 7% hoër as 1620 mg/kg


70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Mn grond mg/kg
3.5
4.0
4.5
5.0
5.5
6.0
6.5
7.0
pH KCL


2500
2000
1500
1000
500
0
Blaar Mn mg/kg
R² = 0.6625
0
10
20
30
40
Grond Mn (DTPA) mg/kg

		pH langs boom	pH tussen bome
Blok 1	Bogrond	3.9	6.1
	Ondergrond	5.3	
Blok 2	Bogrond	3.9	6.3
	Ondergrond	5.2	

Gevolgtrekking en aanbeveling

- Oorbemesting van N veroorsaak versuring en Mn toksiteit.
- 20 gram N per m^2
- Versprei in 3 of 4 paaiemente
- Versprei verder as kroon

Wortelontwikkeling

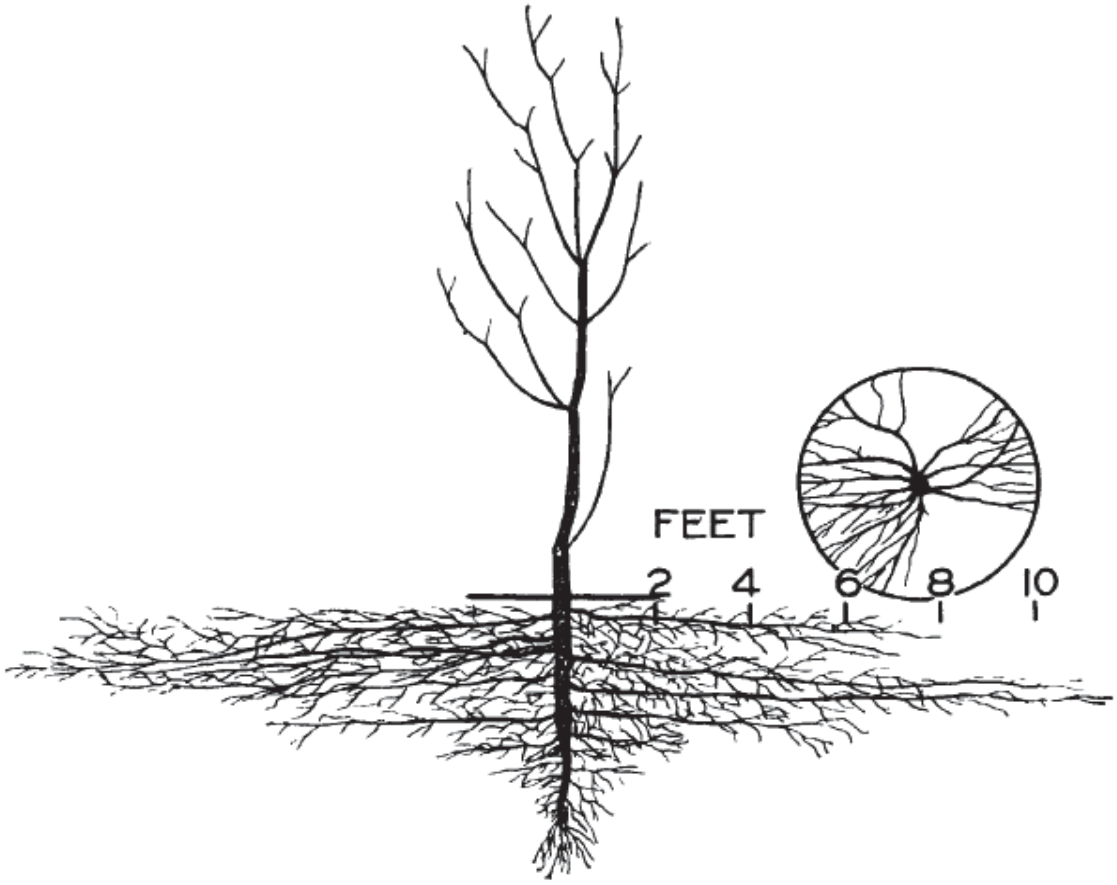


FIGURE 1.—A 6-year-old pecan tree with a spread of branches 5½ feet, a height of 13 feet, a root spread of 24 feet, and a root depth of 6 feet. Trees of this size are frequently transplanted into an orchard. in which case the roots are cut back to a spread of about 1 foot. In the circle is shown the orientation of the 11 largest lateral roots.

Soil Zinc Fertilization of 'Wichita' Pecan Trees Growing Under Alkaline Soil Conditions

Humberto Núñez-Moreno
Instituto Nacional de Investigaciones Forestales y Agropecuarias, Carr. Bahia de Kino Km 12.6, Hermosillo, Sonora, México, 83220
James L. Walworth1 and
Andrew P. Pond
Department of Soil, Water and Environmental Science, University of Arizona, 429 Shantz Building #38, 1177 E. Fourth Street, Tucson, AZ 85721
Michael W. Kilby

Varying critical levels have been established for pecans and several researchers noticed no difference in pecan performance when Zn levels were above 36 to 35 $\mu g \cdot g^{-1}$ (Sparks, 1976). Other reported critical levels are: 20 $\mu g \cdot g^{-1}$ (Lane et al., 1965), 40 $\mu g \cdot g^{-1}$ (Worley et al., 1972), and 60 $\mu g \cdot g^{-1}$ (Storey et al., 1971).

These data imply that a critical level of 50 $\mu g \cdot g^{-1}$ is probably too high.

HortScience 49(5):562–566. 2014.

Foliar Fertilization with Zinc in Pecan Trees

Dámaris L. Ojeda-Barrios[1], Eloísa Perea-Portillo, O. Adriana Hernández-Rodríguez, and Graciela Ávila-Quezada

Department of Agrotechnology Science, Chihuahua State University, Escorza 900, Chihuahua, México 31000

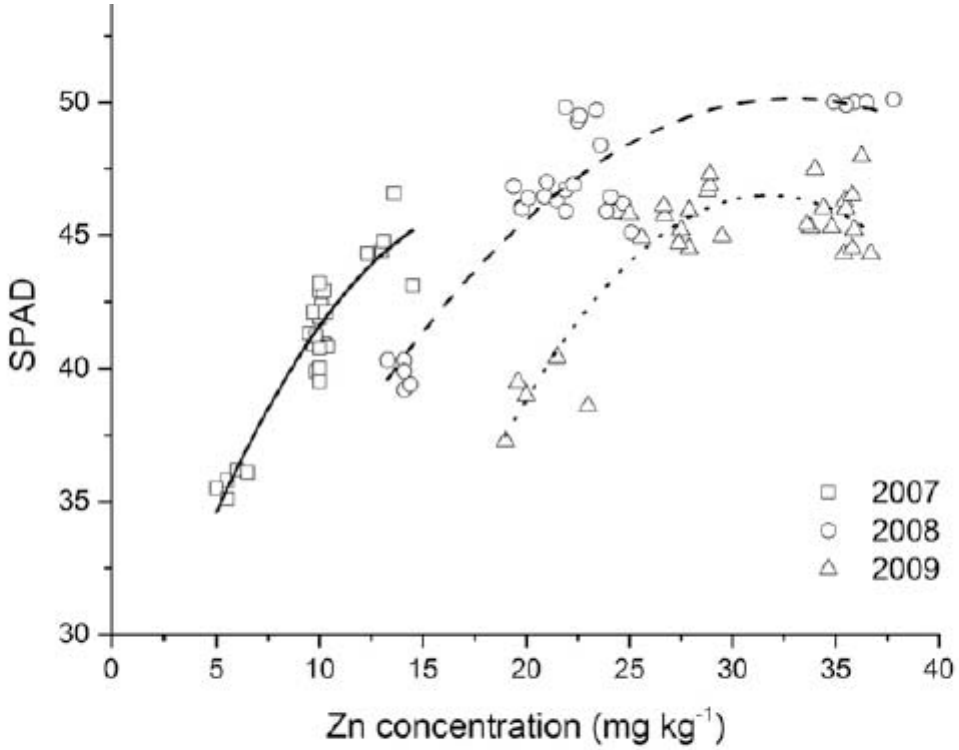


Fig. 3. Correlation between leaflet SPAD readings and leaflet zinc (Zn) concentrations at the L5 stage, water stage of the nut, during the 3 years of the experiment. Solid line (2007): $y = -0.063x^2 + 2.335x + 24.515$, $R^2 = 0.84$, $P < 0.001$ (n = 30); dashed line (2008): $y = -0.027x^2 + 1.805x + 20.454$, $R^2 = 0.802$, $P < 0.001$ (n = 30); dotted line (2009): $y = -0.056x^2 + 3.536x - 9.608$, $R^2 = 0.794$, $P < 0.001$ (n = 30).

- Boor in blaar: 783 mg/kg vs 300 mg/kg
- 2 kg gwano in plantgat

Monitering & Diagnose

- Blaarontleding
- Grondontleding
- Water

geolab@telkomsa.net