Benefits of KNO3-based fertilizers in strawberry crops

Potassium nitrate: the right source for strawberry production

Potassium nitrate helps to prevent salinity induced yield losses

- Completely absorbed by the plant
- Prevents for excess of chloride and sulphate
- Counteracts negative effects of sodium and minimizes chloride uptake
- Increases water uptake efficiency

Potassium nitrate and calcium nitrate ameliorated the negative effects of salinity of strawberry

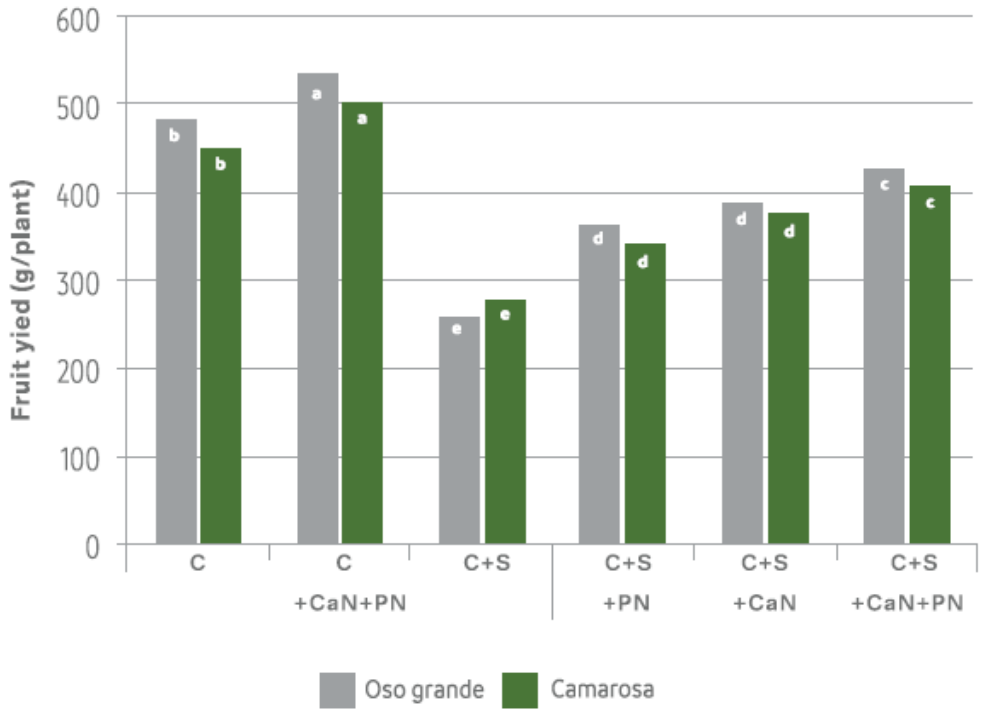
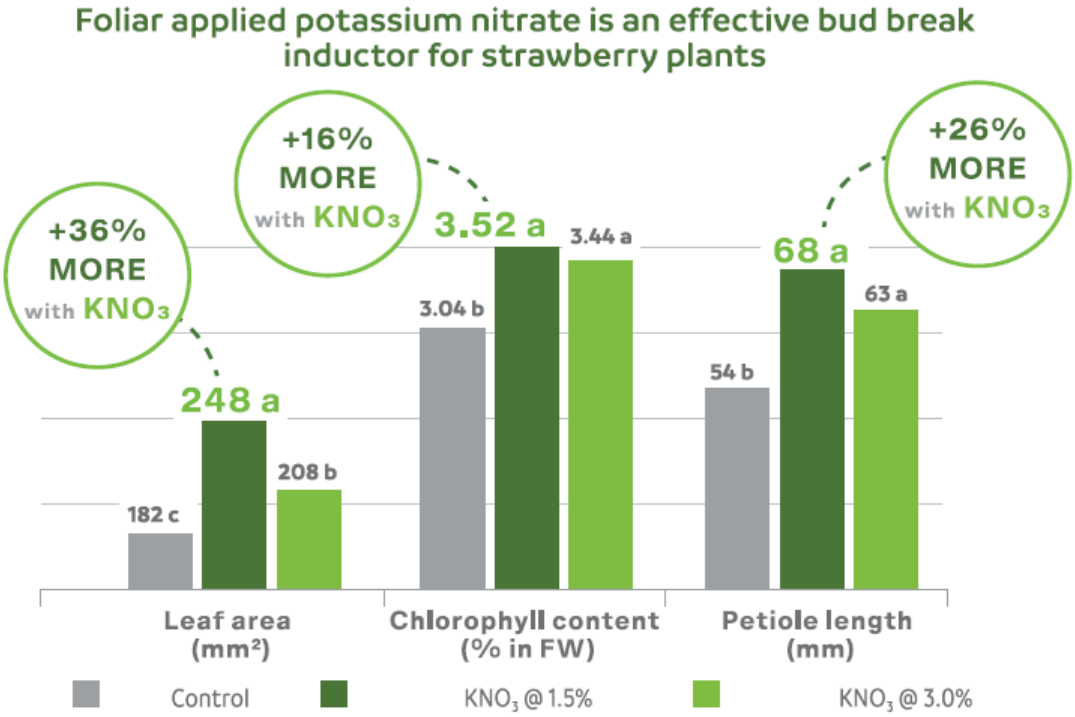


Figure 1. Effect of treatments on the fruit yield (g/plant) of two strawberry cultivars. Note: C, plants receiving normal nutrient solution; S, 35 mM sodium chloride; CaN;5 mM Ca $(NO_3)_2$; PN, 5 mM KNO_3

Source : Kaya, C., B.E. Ak and D. Higgs. 2003. Response of salt-stressed strawberry plants to supplementary calcium nitrate and/or potassium nitrate. Journal of Plant Nutrition, 26(3): 543-560

Potassium nitrate helps to obtain higher yields

- Increases photosynthetic capacity
- Promotes photosynthesis
- Intensifies the transport and storage of assimilates
- Promotes the production of proteins

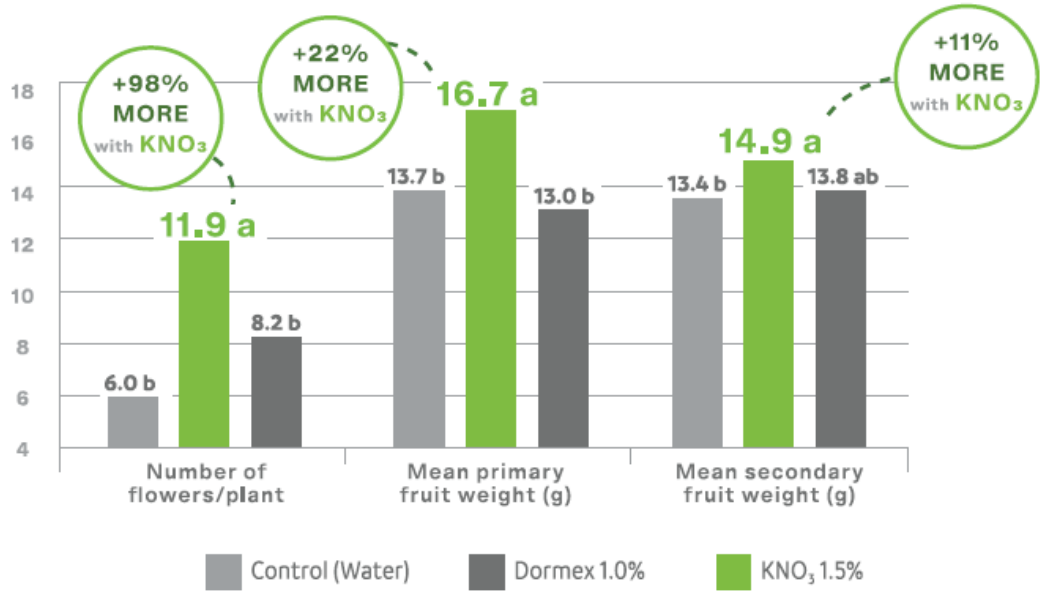


Source: Khayyat, M., S. Rajaee, M. Shayesteh, A. Sajadinia and F. Moradinezhad. 2010. Effect of potassium nitrate on breaking bud dormancy in strawberry (Fragaria ananassa, Duch.) plants. Journal of Plant Nutrition, 33: 1605-1611.

Potassium nitrate helps to obtain better quality

- Increases fruit size
- Improves visual appearance
- Increases nutritional value
- Improves organoleptic features
- Decreases crop loss reduction

Potassium nitrate outperformed other dormancy breaking agents in increase of flowering and fruit weight of strawberry



Means with the same letter indicate that there are no statistically significant differences

Source: Eshghi, S., M.R. Safizadeh, B. Jamali and M. Sarseifi. 2012. Influence of foliar application of Volk oil, Dormex, gibberellic acid and potassium nitrate on vegetative growth and reproductive characteristics of strawberry cv.Merak. J. Biol. Environ. Sci, 6(16): 35-38.

Nitrate-fed fertigated strawberries had higher biomass and increased carboxylate and calcium content

NO_3/NH_4^+ mole ratio		Root temperature (°C)			
NO_3^-mmol L-1	NH_4^+mmol L-1	10	17	25	32
7,0	0,0	2,5 a	2,1 b	2,6 b	2,2 a
5,0	2,0	2,8 a	3,0 a	1,4 d	1,4 c
3,5	3,5	1,4 c	2,8 a	4,5 a	1,7 b
2,0	5,0	1,9 b	2,4 b	1,5 d	1,5 c
0,0	7,0	2,0 ab	2,2 b	1,8 c	*
LSD (0,05)		0,51	0,36	0,30	0,12

Source :Ganmore-Neumann, R. and U. Kafkafi, 1985. The effect of root temperature and nitrate/ammonium ration on strawberry plants. II. Nitrogen uptake, mineral ions and carboxylate concentrations. Agron. J. 77:835-840