

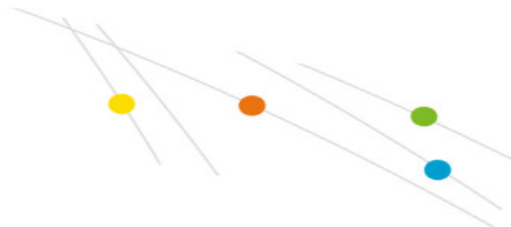
Seed priming with potassium nitrate significantly improved soybean plant traits, compared to the untreated control

Soybean seeds were primed in a laboratorial study with 1% solution of potassium nitrate for 24 hours at 20°C and tested under field conditions in Iran. According to the results from the laboratory experiments, germination percentage, germination rate and seedling dry weight were improved. In the field study, seeds primed with KNO_3 showed the highest values for all of the evaluated traits; the number of pods per plant, the number of seeds per pod, 1000-seed weight, height, LAI and the yield (Table 1 and 2). Seed priming significantly improved the soybean plant traits compared to the control (no priming).

Table 1. The results of the KNO_3 and control treatment for the laboratorial traits: germination percentage (GP), germination rate (GR) and seedling dry weight (SDW).

Treatment	Laboratorial traits		
	GP (%)	GR (per day)	SDW (g)
KNO_3	74	0,39	0,05
Control	58	0,17	0,03
Difference (abs.)	16	0,22	0,02
Difference (%)	28,3	129,4	58,1

Table 2. The results of the KNO_3 and control treatment for the field traits: number of pods per plant (NPPP), number of seeds per pot (NSPP), 1000 seed weight (1000-SW), height (H), leaf area index (LAI) and seed yield.



Treatment	Fruit traits					
	NPPP	NSPP	1000-SW (g)	H (cm)	LAI	Seed yield (kg/ha)
KNO ₃	36	2,7	146	65	5,1	2993
Control	23	2,2	138	46	3,4	2075
Difference (abs.)	13	0,5	9	20	1,6	919
Difference (%)	56,5	24,1	6,2	43,4	47,2	44,3