

PRIMING OF BELL PEPPER SEEDS USING A BIOSTIMULANT EVALUATED BY AN AUTOMATED SYSTEM OF SEEDLING IMAGE ANALYSIS.



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Objective

The objective of the present study was to compare the efficiency of biostimulant priming to hydropriming in bell pepper seeds as evaluated by SVIS® analysis and recommended vigor tests.

Materials and Methods

□ **Seed:** Two cultivars (AF-6 and AF-7) each represented respectively by three and four seed lots.

□ **Tests:** Germination-G and vigor (germination first count - GFC, electrical conductivity - EC, and saturated salt accelerated aging - SSAA).

□ **Tratamentos:** **Hydropriming** – Water

Stimulate® priming - 10 mL of Stimulate® in 100 mL of distilled water



Both, during 24 hours at 25 °C, followed by seed drying at 32 °C and 30% relative humidity.

□ **Seedling Vigor Imaging System - SVIS:** Samples of 25 seeds per lot and cultivar were used. Seeds were placed on the surface of previously moistened paper towels, and kept at 25 °C for six days.

Seedlings were scanned and analyzed by SVIS to calculate vigor index - VI, seedling length - SL, and uniformity - U.

Results

Table 1. Germination and vigor in bell pepper seed lots.

Cultivar AF-6				
Lots	G (%)	GFC (%)	EC ($\mu\text{S}\cdot\text{cm}^{-1}\cdot\text{g}^{-1}$)	SSAA (%)
1	98 A	84 A	497.7 A	87 A
2	95 A	88 A	670.9 B	94 A
3	97 A	75 B	744.2 B	95 A
C.V. (%)	2.8	4.8	6.2	4.7
Cultivar AF-7				
4	95 A	45 B	516.6 BC	58 A
5	89 A	68 A	508.9 B	76 A
6	91 A	65 A	563.5 C	60 A
7	86 A	56 AB	451.5 A	62 A
C.V. (%)	4.3	12.5	4.5	13.5

Table 2. Hydropriming and biostimulant priming in bell pepper seed lots.

Cultivar AF-6									
Lots	Vigor index			Uniformity			Seedling length (cm)		
	Cont	Hydro	Stim	Cont	Hydro	Stim	Cont	Hydro	Stim
1	420 Ac	442 Ab	506 Aa	796 ABa	790 Aa	822 Aa	6,6 Ab	6,3 Bb	9,5 Aa
2	426 Ac	460 Ab	500 Aa	820 Aa	763 Aa	797 Aa	6,6 Ab	8,4 Aa	9,5 Aa
3	381 Ac	456 Ab	495 Aa	746 Ba	803 Aa	796 Aa	5,7 Ac	7,8 Ab	9,4 Aa
C.V. (%)	6.2			4.7			9.0		
Cultivar AF-7									
Lots	Vigor index			Uniformity			Seedling length (cm)		
	Cont	Hydro	Stim	Cont	Hydro	Stim	Cont	Hydro	Stim
4	391 Aa	414 Aa	438 Aa	797 Aa	769 Aa	774 Aa	4,1 Ab	6,7 ABab	7,5 Aa
5	389 Aa	446 Aa	410 Aa	799 Aa	804 Aa	742 Aa	5,2 Ab	7,5 Aa	6,8 Aa
6	424 Aa	439 Aa	447 Aa	785 Aa	800 Aa	795 Aa	5,5 Ab	7,2 Aa	7,6 Aa
7	420 Aa	387 Aa	419 Aa	774 Aa	767 Aa	782 Aa	5,4 Ab	5,7 Bb	6,7 Aa
C.V. (%)	6.7			4.9			10.1		



Control



Hydropriming



Biostimulant priming

Conclusion

Hydroprimed and biostimulant primed seeds performed better than control. The biostimulant is advantageous with respect to seedling growth after priming although no differences were detected among seed lots for both cultivars.