

**Alfalfa Heat treatment (Presoaking+hot-water treatment)**

Table 1 Comparison study on disinfecting inoculated *E.coli* in alfalfa seeds.  
inoculated seed group L. (Initial population of *E.coli* =  $1.7 \times 10^4$  CFU/g)

Treatment*	Surviving <i>E.coli</i> CFU/g
hot-water treatment after presoaking	
presoak <sup>1</sup> →pre-heat(50□)→heat (85□.)	0
presoak <sup>2</sup> →pre-heat (50□)→heat (85□)	0
presoak <sup>3</sup> →pre-heat (50□)→heat (85□)	0
presoak <sup>3</sup> →pre-heat (70□)→heat (85□)	0
presoak <sup>3</sup> →pre-heat (70□)→heat (83□)	0
presoak <sup>3</sup> →pre-heat (70□)→heat (80□)	0
hot-water treatment	
pre-heat (50□×9sec.)→heat (85□×9sec.)	120-210 (logCFU/g)
calcium hypochlorite treatment	
Soaking in 20,000ppm of calcium hypochlorite for 10 min.	900-3270 (logCFU/g)

\*each hot-water treatment time was 9 seconds.

\*\**E.coli* test of the peptone water cultured with the seeds overnight as enrichment procedures.

<sup>1</sup> presoaking in the water of 15□ for 30min.

<sup>2</sup> presoaking in the water of 15□ for 60min.

<sup>3</sup> presoaking in the water of 25□ for 30min.

\*\*\*mean+S.D. of logCFU/g.

	germination	harvest
□	89.7±2.6%	93.6%
□	73.3±6.1%	78.4%
□	87.3±4.6%	

**Conclusion**

- 1.Presoaking previous to hot-water treatment was very effective on disinfecting some reduction in harvest.
- 2.Nevertheless, we can not guarantee the total disinfection of seeds, because contamination level will be differ from each seed lots.
- 3.The natural contamination level of seeds will be less than inoculation level. heat treatment without presoaking or with short time presoaking will be enough.

bacteria as same level as 20,000ppm Ca-hypochlorite treatment.