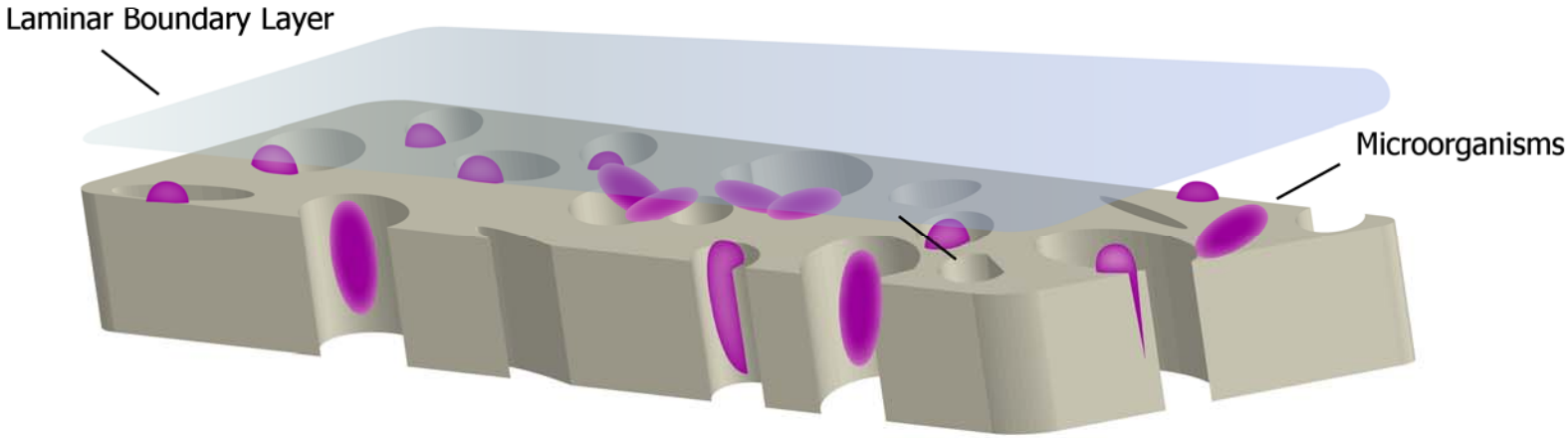
Reduction of pathogens on seeds using SonoSteam - ultra sound and steam combined

by

Chris Kjellerup
FORCE Technology

The principle of SonoSteam.
The Laminar Boundary Layer

Situation without SonoSteam



The laminar boundary layer restricts vapour and heat exchange across the surface, thus preventing efficient heat transmission and killing of surface associated micro-organisms.

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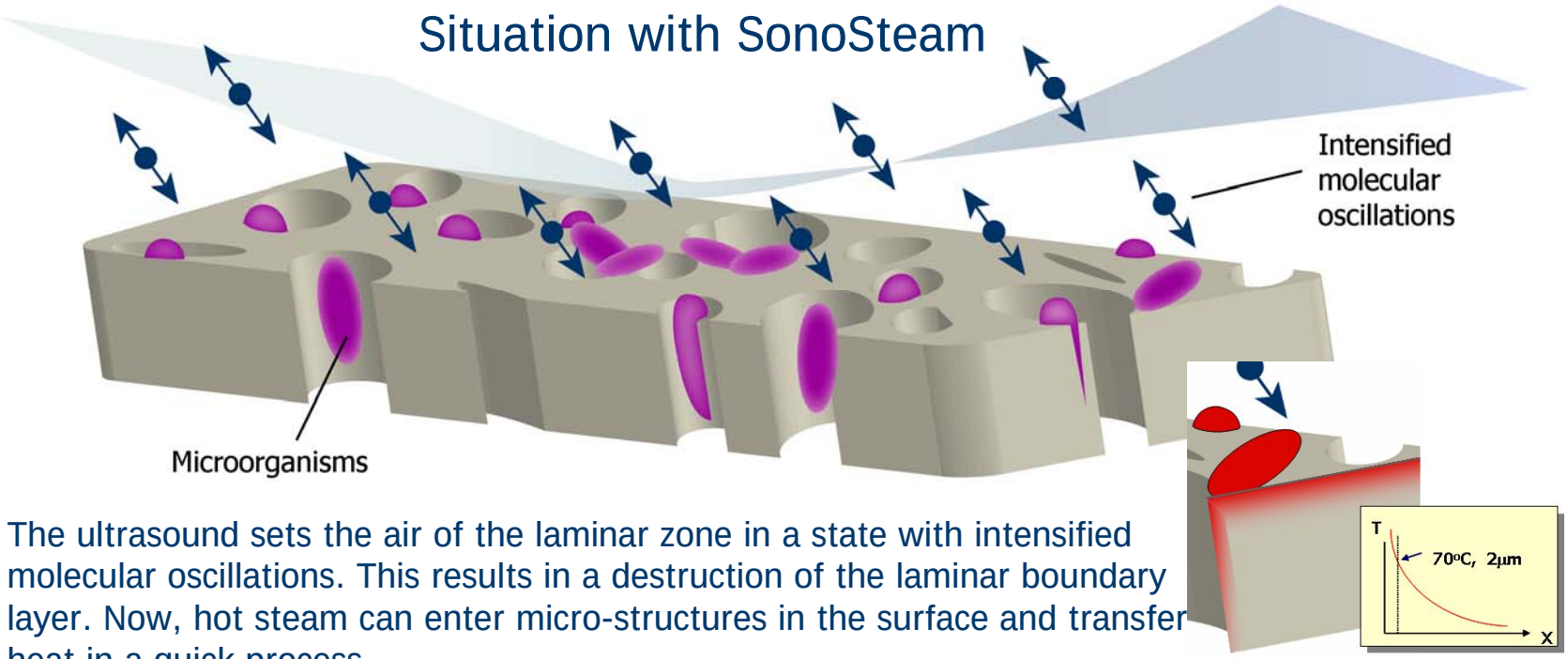
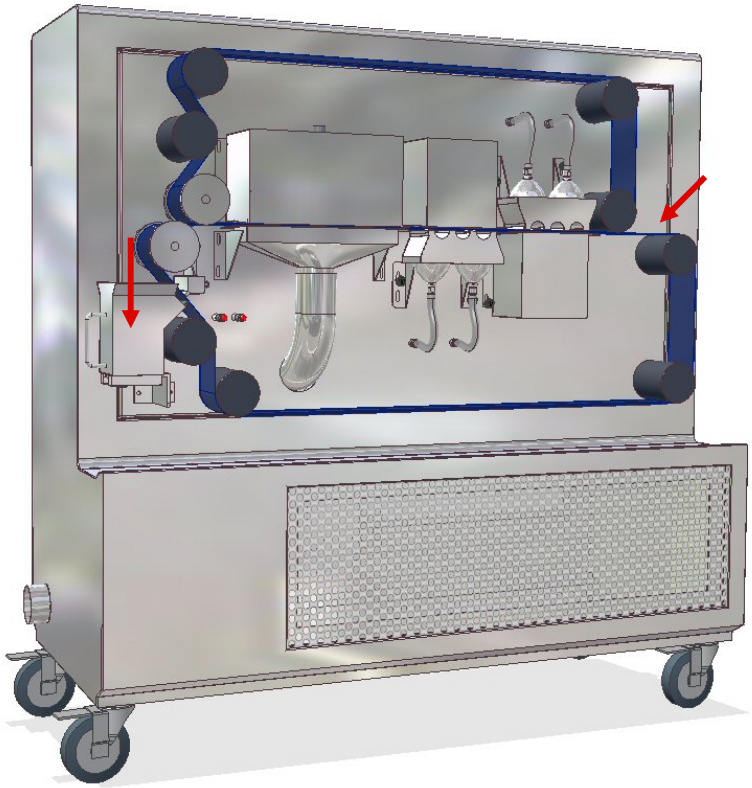
Situation with SonoSteam



The ultrasound sets the air of the laminar zone in a state with intensified molecular oscillations. This results in a destruction of the laminar boundary layer. Now, hot steam can enter micro-structures in the surface and transfer heat in a quick process.

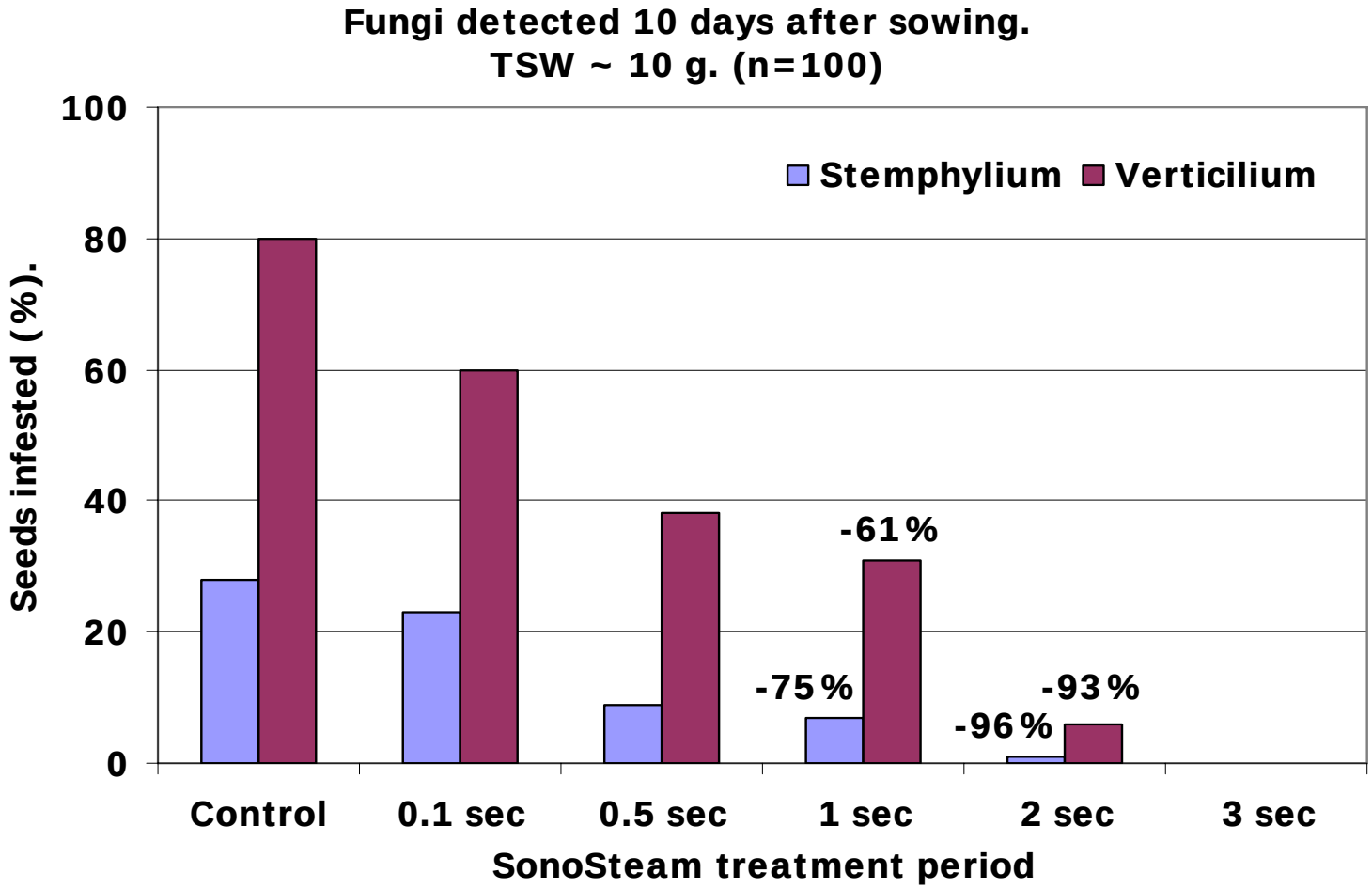
Due to the microscopic size of the micro-organisms these are heated and destructed almost instantly. Consequently the process can be stopped before the heat has penetrated more than a few micrometers below the product surface.

Treatment of Seeds – the machinery



- 1st FingerJet – 4 SonoSteam pulses
- Air knife
- 2nd FingerJet – 4 SonoSteam pulses
- Air knife
- Ventilation zone (with HEPA filter)
- Collecting box

Results on spinach seeds



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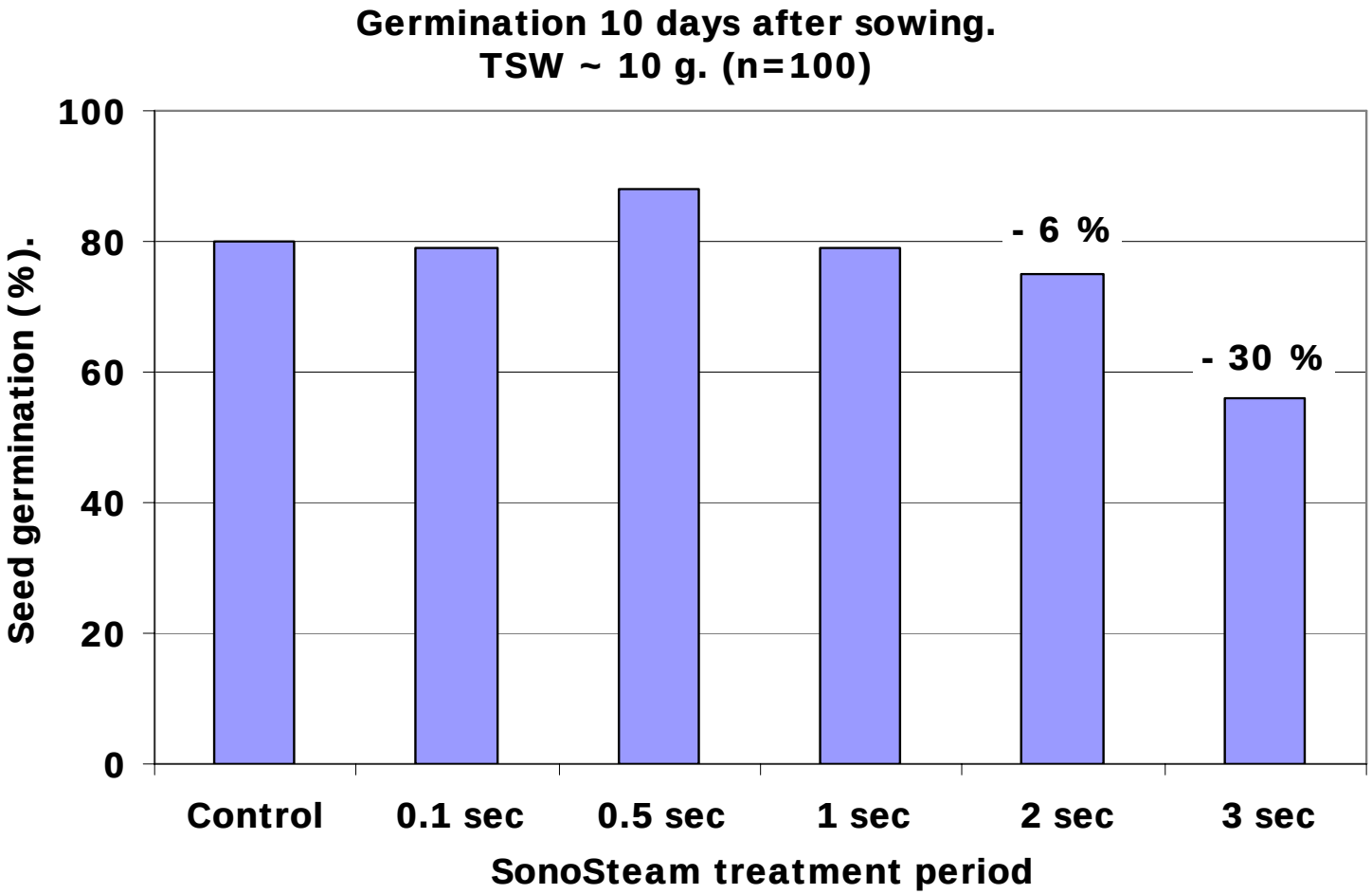
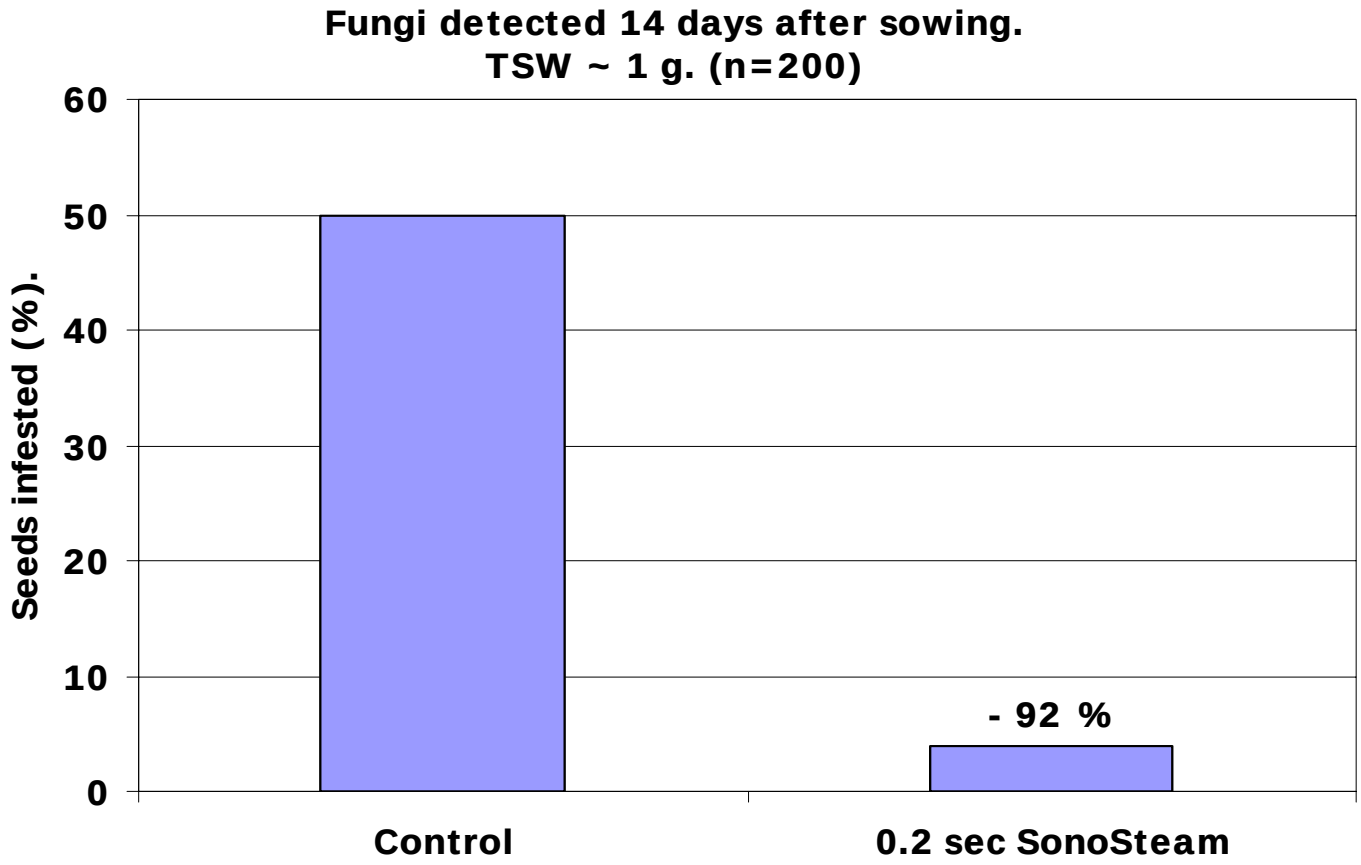
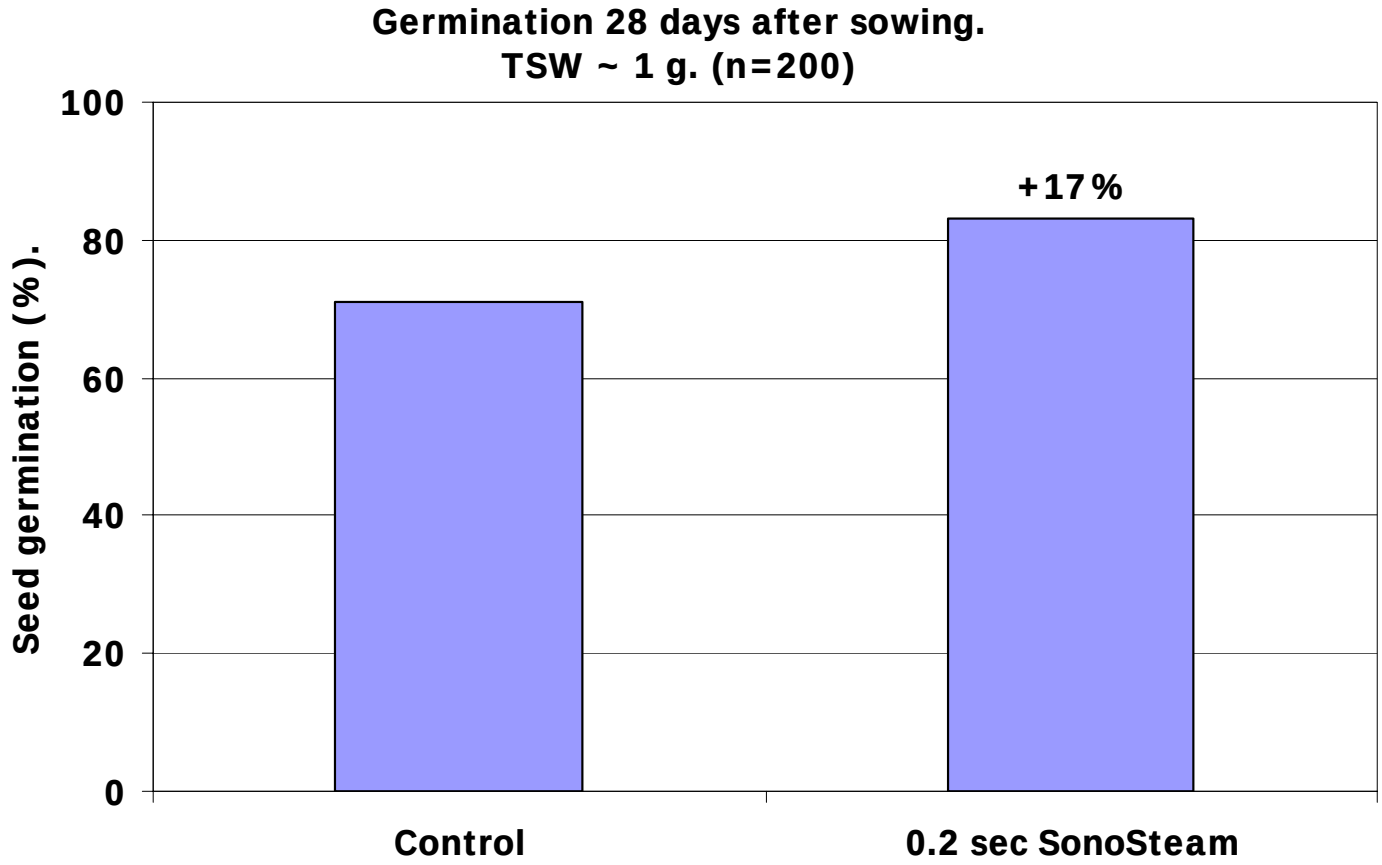


Results on primrose seeds



Results on primrose seeds



Conclusion

Without the use of any chemicals,

the SonoSteam technology is able to reduce the amount of seeds infested by pathogens, without compromising the germination of the seeds

Thank you for your attention

For more information about
SonoSteam®

www.sonosteam.com