

Enhanced germination characteristics and seed vigor by Cold Atmospheric Plasma

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Cold Atmospheric Plasma (CAP) [1] was exposed to seeds of *Cicer arietinum* in different doses. For each case, germination percentage, speed of germination, seedling length, seedling dry weight and seed vigor [2] were evaluated compare to unexposed control. An optimum result was obtained at 1 mint CAP exposure with increased percentage of germination from 60.83%(control) to 89.16%. The speed of germination enhanced from $3.922 \pm 0.125/\text{day}$ (control) to $7.125 \pm 0.107/\text{day}$. The increased level of germination percentage, speed of germination and seed vigor and the decreased level of mean germination time, and the time to get 50% germination of seeds were observed for CAP exposure at 1mint. This advantage and promising role of CAP to increase seed germination suggested that CAP technology could be an easy to handle technology for farmers and people in food industry to enhance seed germination characteristics in a simple way.

References

- [1] Morfill GE., Shimizu T., Steffes B., Schmidt H-U., New Journal of Physics (2009), **11**, (115019) : 10.
- [2] Vashisth A., Nagarajan S., Bioelectromagnetics (2008), **29**, 571-578.