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The effect of hydrostatic vs. shock pressure treatment on plant seeds ADRIAN MUSTEY, JAMES LEIGHS, GARETH APPLEBY-THOMAS, DAVID WOOD, Cranfield University, RACHAEL HAZAEL, PAUL MCMILLAN, University College London, PAUL HAZELL, University of New South Wales — The hydrostatic pressure and shock response of plant seeds have both been previously investigated (primarily driven by an interest in reducing bacterial contamination of crops and the theory of panspermia respectively). However, comparisons have not previously been made between these two methods of applying pressure to plant seeds. Here such a comparison has been undertaken based on the premise that any correlations in such data may provide a route to inform understanding of damage mechanisms in the seeds under test. In this work two varieties of plant seeds were subjected to hydrostatic pressure via a non-end-loaded piston cylinder set-up and shock compression via employment of a 50-mm bore, single stage gas gun using the flyer-plate technique. Results from germination tests of recovered seed samples have been compared and contrasted, and initial conclusions made regarding causes of trends in the resultant data-set.

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