

PERFORMANCE OF PRIMED SEED UNDER DROUGHT STRESS

Stephen Harper

Germain's Seed Technology, Hansa Road, King's Lynn, Norfolk, PE30 4LG, UK

Priming of sugar beet seed increases speed and uniformity of germination, which in turn supports both faster and more uniform emergence. Additionally, laboratory tests have indicated increased tolerance of both wet and dry conditions. Relative to a standard of 40 ml water in pleated paper tests, an increase to 50 ml and/or 60 ml typically will reduce germination percentage of unprimed check seed. In contrast, germination of primed seed is not affected. With reducing moisture below 40 ml, germination progresses at an increasingly slower rate. However, the margin of the difference in speed between primed and check seed is not affected.

Recent adverse weather conditions have provided an opportunity to test predictions from laboratory tests on the impact of drought within field trials. In some trials, there has been little or no rainfall during the period of March through May during which seedlings would normally emerge. As in laboratory tests with restricted water availability, the period of emergence was more protracted than normal. Additionally, in the field, dry conditions may cause some degree of reduction in plant populations relative to historical norms. Priming alleviates this reduction in plants numbers only on occasion, but the margin of difference in speed of emergence relative to check is always maintained.