HALMER, PETER, Germain's (UK) Ltd., Hansa Road, Kings Lynn, Norfolk PE30 4LG, UK. - Priming treatments for sugar beet seed to advance germination and field emergence.

Two priming procedures have been developed to maximise the emergence potential of sugar beet seed, and thus help to ensure uniform crop establishment under a wider range of field conditions and drilling dates. Steeping of seed, typically for up to 12 hours using water (or thiram suspension) at 25°C, has been successfully established now for 5 years by Germain's/Seed Systems in Europe and North America, as a standard commercial treatment for pelleted sugar beet. Responses to steeping include: (1) a speeding of laboratory germination and field emergence (typically by 1-2 days); (2) an increase in final establishment, on average by 3.5% in the UK for the 1984-1986 period. Recently, a more extended priming advancement treatment *(PAT)* has been developed by Germain's/Seed Systems, based on initial research carried out at Brooms Barn Experimental Station in the UK: this treatment is now undergoing commercial-scale trials. In the *PAT* process, each bulk is steeped and then stored for several days at 25°C at a precalibrated moisture content, before being pelleted. Responses to *PAT*, compared to those due to steeping, include: (1) a greater uniformity and further speeding of field emergence, by up to 9 days from earliest drilling dates; (2) an increased germination and emergence capacity in cold-wet conditions. Increased emergence speed in *PAT*-treated seed is associated with an increase in recoverable sugar yield of 0.5-1.0t/ha in UK trials. Responses are retained for 3 years in pellets stored under normal conditions.