

# **FIELD DAY REPORT - 1993**

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## EVALUATION OF BERSEEM CLOVER GERMPLASM SELECTED FOR IMPROVED RESEEDING

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**Background.** Four elite berseem clover half-sib families (open-pollinated seed from four plants) were identified with improved hard seed production by 2 years of progeny testing. Plants from these 4 berseem clover families were grown in 1988-89 and allowed to cross-pollinate. Seed from these plants were harvested, bulked and designated OVB-3 berseem. The OVB-3 population was grown at Overton in 1990-91 as a spaced-plant nursery. Plants with cold damage or poor vigor were removed and the resulting seed increase was designated BHS-91. The objectives of these experiments were to evaluate the hard seed production and rate of hard seed softening in these berseem clover populations.

**Research Findings.** OVB-3 and 'Bigbee' berseem clover were grown at Beeville in 1990-91. BHS-91 and Bigbee berseem clover were grown at Beeville, College Station, Yoakum, Overton, and Dallas in 1991-92. Entries were arranged in a randomized complete block design with 3 (1990-91) or 4 (1991-92) replications of 5 x 20 ft. plots. Dry, mature seedheads were sampled from each plot in July. No data were collected from the Dallas location due to a severe freeze during seedling emergence. Seed were threshed by hand from the seedheads using rubber-coated rubbing surfaces. Hard seed of each entry were evaluated at harvest and after 90 days of simulated summer temperatures (12 hours at 100F and 12 hours at 75F).

Both OVB-3 and BHS-91 berseem clover were clearly superior to Bigbee in hard seed production. In 1991 at Beeville, hard seed levels at harvest were 15% for Bigbee and 65% for OVB-3. After 90 days of summer temperatures, Bigbee hard seed declined to 2% compared to 20% hard seed for OVB-3 (data not shown). In 1992, percent hard seed at harvest from four locations ranged from 80 to 45 for BHS-91 and from 51 to 24 for Bigbee (Fig. 1). Average hard seed percentage at harvest of BHS-91 was double that of Bigbee (Fig. 2). After 90 days of summer conditions percent hard seed ranged from 35 to 11 for BHS-91 and from 10 to 3 for Bigbee (Fig. 2).

**Application.** Both OVB-3 and BHS-91 are clearly superior sources of hardseeded berseem germplasm. Experiments are in progress to measure forage production and cold tolerance of these berseem breeding lines. New berseem clover cultivars or germplasms with improved reseeding potential will be released using these genetic resources.

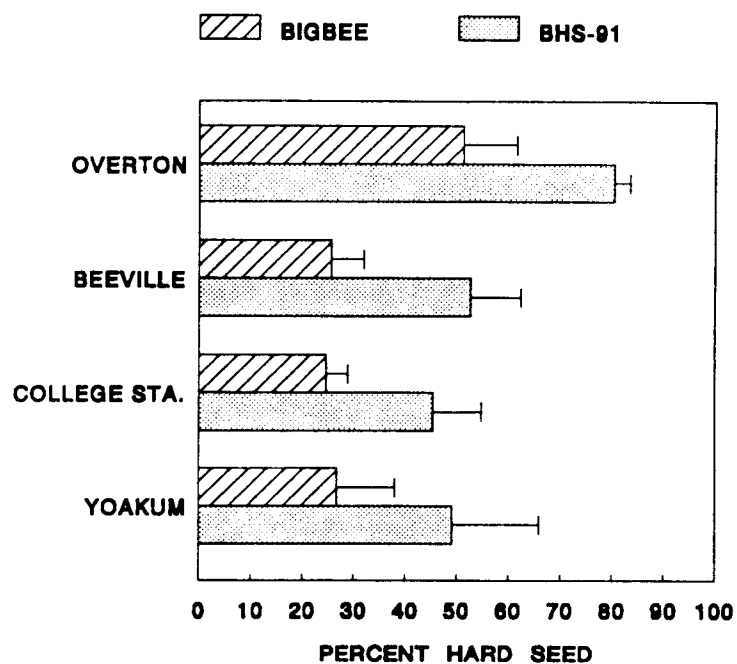


Figure 1. Berseem clover hard seed at harvest from four Texas locations in 1992.

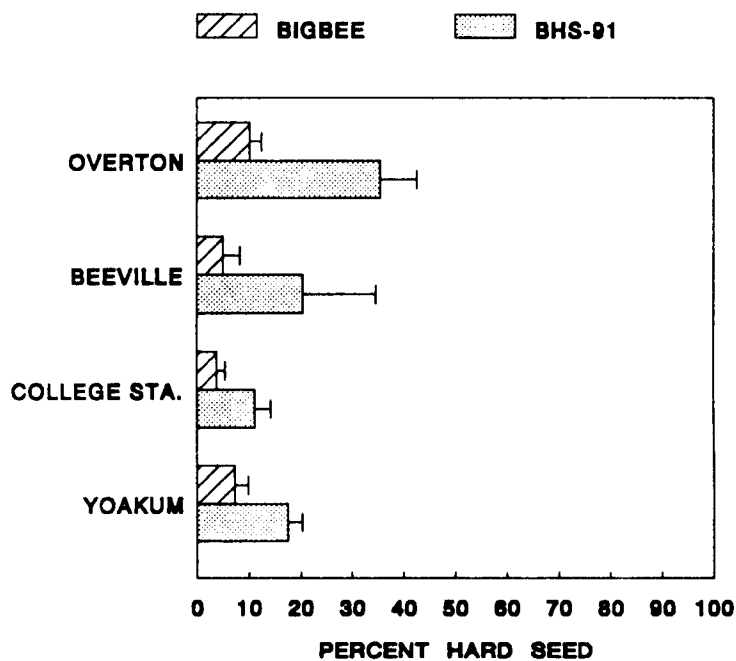


Figure 2. Berseem clover hard seed after 90 days of simulated summer temperatures. Seed produced at four Texas locations in 1992