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Effect of Crop Age and Seed Hardening on Seed Germination in Buffel Grass

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Abstract: Effect of crop age, viz., establishment year, 1-year and 2-year-old crops and hydration treatment, viz., untreated (control), hydration for 16 to 18 h (H-D), cold hydration (72 h) at 10°C (cold H-D), hydration with 100 ppm GA_3 for 16 to 18 h (GA_3 H-D), and hydration for 16-18 h followed by dry dressing with thiram @ 0.25% (H-D-T) on seed germination was studied in buffel grass (*Cenchrus ciliaris* Linn.). The treated seeds were dried at room temperature below 25°C. The crop ages, hydration treatments and their interaction had significant effect on seed germination. The seeds harvested from the establishment-year-crop gave 37.0 and 47.1% higher germination than the seeds of 1-year and 2-year-old crops, respectively. The seed germination recorded with cold H-D and GA_3 H-D was significantly higher than rest of the hydration treatments. These treatments had 21.82 and 21.32% higher seed germination than control (50.42%).

Key words: *Cenchrus ciliaris*, crop age, hydration treatment, seed germination.

Community grazing lands in western Rajasthan mostly fall under sandy waste. Land use survey and photo interpretation reports have revealed that sandy wastelands, lying between 24° to 29°N latitude and 70° to 76°E longitude, occupy 48.7% of the total wastelands in the Thar Desert of India (Sen and Balak Ram, 1988). Buffel grass (*Cenchrus ciliaris* Linn.), a perennial pasture grass species, has a wider adaptability in varied edaphic habitats all over the country. It is one of the prominent species of *Dichanthium-Cenchrus-Lasiurus* grass cover type of tropical India (Dabadghao, 1960). Quality seed of improved varieties of pasture grasses could be the best proposition for the renovation of degraded sandy wastelands. Polymorphism, color of inflorescence and stigma color have been given more emphasis for selection of grass type of *C. ciliaris* for different habitats (Chakarvarty and Das, 1965). Low seed germination is one of the major problems in pasture establishment. To enhance the seed germination of this grass washing of seeds in water has been recommended by Lahiri and Kharbanda (1963). Perennial pasture grasses lack synchrony in seed maturity. An attempt has been made here to study the effect of different crop ages and hydration treatments on germination of *C. ciliaris* seeds.

Materials and Methods

The study was conducted at Seed Technology Laboratory of Central Arid Zone Research Institute, Jodhpur. The seeds of *C. ciliaris* genotype CAZRI 358 were collected in the month of September 1998 from establishment year, one-year-old and

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