Parental line seeds of five commercial maize hybrids produced in winter season were subjected to natural storage (0, 4 and 8 months) and accelerated ageing (40°C, 100% RH, 7 days) conditions. Storability was assessed by standard germination and vigour tests. Results indicated that the maize parental line seeds could be safely stored for eight months under ambient conditions without significant decline in seed quality. Genotypes were significantly different for seed germination and vigour traits. Single crosses showed higher values for the vigour traits but reduction in seed quality was comparable with their inbred parents. Yellow seeded genotypes showed better storability than white seeded ones. Simple vigour tests, based on seedling traits especially coleoptile length, reliably assessed the seed quality and storability of maize parental line seeds. Accelerated ageing test though proved its potential for predicting seed storability but failed to simulate effect of natural ageing.