

## عنوان مقاله:

Genetic variation and heritability for germination, seed vigour and field emergence in brown and yellow-seeded genotypes of flax

## محل انتشار:

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## خلاصه مقاله:

Genetic improvement of seed vigour and emergence of yellow-seeded flax (*Linum usitatissimum* L.) is important to have a good stand establishment, since they are negatively affected by yellow seed colour. This study was conducted to investigate genetic variation, broad-sense heritability and expected genetic response to selection for germination, seed vigour and field emergence. Sixteen genotypes of yellow-seeded flax and 17 of brown-seeded were evaluated for germination at 5°C, 15°C and vigour test (cold test) and also for field emergence in 2005 and 2006. Genetic variation for vigour test and field emergence in yellow-seeded genotypes was much higher than brown-seeded, as shown by their genetic coefficients of variation of 41% vs. 17.9% in vigour test, 50.9% vs. 3.8% and 34.1% vs. 18% for field emergence in 2005 and 2006, respectively. Germination of yellow and brown-seeded genotypes in vigour test varied from 10.7 to 55.3% and 40.7 to 88.7%, respectively. Field emergence ranged from 20 to 217.3 and 35 to 184.3 seedlings/m<sup>2</sup> among yellow-seeded genotypes in 2005 and 2006; however, the corresponding range for brown-seeded genotypes was 266 to 414 and 93.7 to 210 seedlings/m<sup>2</sup>. Broad-sense heritability for germination at 5°C and vigour test, days to 50% emergence and seed weight were high (65.9 to 98.4%). The heritabilities for field emergence were low to moderate for brown seeds (6.7% and 51.6%), and moderate to high (56.2% to 96.8%) for yellow seeds in 2005 and 2006. High estimates of genetic response to selection for seed vigour and field emergence were found in yellow-seeded genotypes, indicating the possibility of genetic improvement of these traits.

## کلمات کلیدی:

Heritability, Seed vigour, Emergence, Seed Colour, Flax

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