

Abstract

The objectives of this study were to research and develop inbred lines of hemp. There were two experiments consist of; (1) production of S_7 lines (2) development of Syn1 population. For Experiment 1, 30 S_6 lines were sown. Significant positive correlation coefficients were found between all agronomic characters, including plant height, stem diameter, number of nodes and branches per plant, total dry weight and seed dry weight, except fiber content. Twenty S_7 lines were selected and sown. The S_7 generation showed desirable positive shift of population mean of all agronomic characters. Most lines had THC below the 0.3% threshold and CBD:THC higher than 2.

For Experiment 2, the Syn0 was sown and plants allowed to intermate randomly. At maturity, 502.5 g of seed were harvested and represented Syn1 population. The Syn1 was evaluated. The Syn1 showed good agronomic characteristics. For fiber percentage, that of the Syn1 was 14.5% and higher than the checks. THC and CBD of the Syn1 were 0.01 and 4.1%, respectively. Superior growth, fiber yield and low THC indicating that it is possible to produce synthetic variety from these hemp germplasms.

