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Improvement of Low Delta-9 Tetrahydrocannabinol (THC) Hemp Cultivars for High Fiber Content

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Abstract : Hemp (Cannabis sativa L.) is multi-purpose crop delivering fibers, shives, and seed. The fiber is used today for special paper, insulation material, and biocomposites. This research was to improve low delta-9 Tetrahydrocannabinol (THC) hemp variety for high fiber contents. Mass selection for increased fiber content in four low THC Thai cultivars (including RPF1, RPF2, RPF3, and RPF4) was carried out in highland areas in the northern Thailand. Research work was conducted for three consecutive growing seasons during 2012 to 2014 at Pangda Royal Agricultural Station, Samoeng District, Chiang Mai Province, Thailand. Results of selection indicated that after selecting for three successive generations, the average fiber content of four low THC Thai cultivars increased to 28-36 %. The resulted of selection was found that fiber content of RPF1, RPF2, RPF3 and RPF4 increased to 20.6, 19.1, 19.9 and 22.8%, respectively. In addition, THC contents of these four varieties were 0.07, 0.138, 0.08 and 0.072 % respectively. As well, mass selection method was considered as an effective and suitable method for improving this fiber content.

Keywords : Hemp, mass selection, fiber content, low THC content
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