RESULT OF BREEDING NEW SWEET POTATO VARIETIES WITH HIGH STORAGE ROOT STARCH CONTENT USING MARKER ASSISTED SELECTION
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Summary
In order to breed new sweet potato varieties with marker assisted selection for high storage tuber (SR) yield $\geq$ 25 ton/ha and high starch content ($\geq$22%) for the Northern growing conditions of Vietnam, during 2012-2015, the Field Crops Research Institute applied four SSR markers \textit{ITSSR8, ITSSR15, IbE29} and \textit{IbY47} to screen for high SR starch content trait on the local made hybrid populations of 41 cross combinations and then followed by phenotypic selection, advanced and regional trials for yield, SR quality and other desired characters. This work resulted in two new sweet potato varieties \textit{VC6} and \textit{VC7} were bred. Variety \textit{VC6} was found to have genetic background with high SR starch content identified by two markers \textit{ITSSR15} and \textit{IbE29} while \textit{VC7} was by \textit{IbY47}. Results of the 2014-2015 regional trials conducted in 5 Northern provinces found out that \textit{VC6} gave a fresh SR yield of 25.8 - 26.8 ton/ha (58.3-62.1% higher than that of the check \textit{Hoàng Long}) with average SR starch content of 22.2%; producing SR starch yield of 5.8-5.9 tons/ha (72.6% higher than that of the check). Variety \textit{VC7} gave a fresh SR yield of 25.1-25.4 ton/ha (52.0-55.8% higher than the check) with average SR starch content of 22.7%; producing SR starch yields of 5.7-5.8 tons/ha (68.6% higher than that of the check). The two varieties also have several other preferable traits for farmers’ production.

Keywords: Breeding, MAS, sweet potato, high starch content, varieties \textit{VC6} and \textit{VC7}. 