During 2007-2012, cassava breeding and selection have been carried out and transferred to our farmers. This has just considered as the outstanding achievements to significantly promote cassava production in Vietnam. Six elite cassava varieties have been released as national ones. They exhibited similar agronomical characters of KM94 check but better yielding and high quality properties. The three cassava genotypes were officially developed as KM98-7 (Trinh Thi Phuong Loan et al., 2008), KM140 (Tran Cong Khanh, Nguyen Huu Hy et al., 2010) and NA1 (Mai Thach Hoanh et al. 2011). Otherwise, three cassava genotypes were temporarily released as KM98-5 (Tran Cong Khanh, Nguyen Huu Hy et al., 2010) 08SA06 and KM21-12 (Nguyen Trong Hien et al., 2012). Mutation breeding by 60Co irradiation has been applied to obtain the promising lines from M4 generation so far. Four elite lines were identified. The fresh root yield reached the highest, outyielded 30 - 50% as compared to the control. These are KM94-15-4, KM140-5-3, KM 98-5-10-2 NS, KM140-5-4. Accordingly, 12 prospects cassava lines at Tay Ninh yield trial in 2011 were observed. Of four lines KM316, KM140, KM505 and KM7, their root yields obtained 37.4, 36.9, 36.2 and 35.2 ton/ha, respectively. It meant outyielding of 16.9 - 24.3%.