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COMMENTS

Comments on the special issue on tropical crops of *FASE*

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The issues of tropical crop domestication, genetic diversity of edible part (nutritive values) are of major concerns for topical crops, especially in order to high light the domestication syndrome processes of non-seeds crops as sources of food for humans. The title examples authors listed and the ones added here strengthen the utilization of modern genomics [Zhiqiang XIA et al. Comparative transcriptomics revealed enhanced light responses, energy transport and storage in domestication of cassava (*Manihot esculenta*). DOI: 10.15302/J-FASE-2016126; Yuhua FU et al. A bacterial artificial chromosome-based physical map of *Manihot esculenta* ssp. *Flabellifolia*. DOI: 10.15302/J-FASE-2016124], transcriptomic (Yang ZHANG et al. Annotation and validation of genes involved in photosynthesis and starch synthesis from a *Manihot* full-length cDNA library. DOI: 10.15302/J-FASE-2016113)[1,2], proteomics[3], new genetic resources[4–6], and biotechnology (Maliwan NACONSIE and Peng ZHANG. Transgenic technologies in cassava for nutritional improvement and viral disease resistance: a key strategy for food security in Africa. DOI: 10.15302/J-FASE-2016119)[7] toward cassava crop as a tropical plant model for storage root and tuber human edible part.

References

1. Souza D A P A, Carvalho, CRB. Assessing global gene expression change in storage root of cassava landraces diversity using microarray data. *Poster at Scientific Conference of the Global Cassava Partnership for the Century-Gcp21-Ii*, 2012
2. An F, Chen T, Stéphanie D M A, Li K, Li Q X, Carvalho L J C B, Tomlins K, Li J, Gu B, Chen S. Domestication syndrome is investigated by proteomic analysis between cultivated cassava (*Manihot esculenta* Crantz) and its wild relatives. *PLoS One*, 2016, **11**(3): e0152154
3. An F, Li G, Li Q X, Li K, Carvalho L J C B, Ou W, Chen S. The comparatively proteomic analysis in response to cold stress in cassava plantlets. *Plant Molecular Biology Reporter*, 2016, **34**(6): 1095–1110
4. Carvalho L J C B, Agustini M A V, Anderson J V, Vieira E A, de Souza C R B, Chen S B, Schaal B A, Silva J P. Natural variation in expression of genes associated with carotenoid biosynthesis and accumulation in cassava (*Manihot esculenta* Crantz) storage root. *BMC Plant Biology*, 2016, **16** (1): 133
5. Carvalho L J C B, de Almeida J D, Anderson J V, Vieira E A, Chen S, Batista de Souza C R, Fuhrmann E, Padilha da Silva J. Studies on variation of carotenoid protein content in cassava (*Manihot esculen*ta Crantz) storage root reveal implications for breeding and the use of induced mutations. *Plant Mutation Reports*, 2013, **3**(1): 25–36
6. Yan H, Lu L, Hershey C, Ceballos H, Chen S, Li K. Cassava mutation breeding: current status and trends. *Plant Mutation Reports*, 2013, **3**(1): 37–44
7. Carvalho L J C B, Vieira E A, de Freitas Fialho J, de Souza C R B. A genomic assisted breeding program for cassava to improve nutritional quality and industrial traits of storage root. *Crop Breeding and Applied Biotechnology*, 2011, **11**(4): 289–296

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