DOI: 10.15740/HAS/AU/12.TECHSEAR(2)2017/409-420
Agriculture Update
Volume **12** | TECHSEAR-2 | 2017 | 409-420
Visit us : *www.researchjournal.co.in*
e ISSN-0976-6847

RESEARCH ARTICLE :

Molecular characterization of metal homeostasis related gene orthologs in nutri- rich foxtail millet accessions

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ARTICLE CHRONICLE :
Received :
11.07.2017;
Accepted :
24.07.2017

SUMMARY : Foxtail millet is drought tolerant and nutritionally reached functional food in tribal parts of world. The present study aim to focused the nutritious accessions through the molecular characterization and differential gene expression profiling of nutritionally rich (iron and zinc) accessions of foxtail millet. Accessions IC12059, was found to be more promising having high concentration of both zinc and iron content, whereas, IC120175, IC120213, IC97111, IC120179, IC1220207 and IC1220407 has high zinc content and IC97189, IC120150, IC120159, IC120239, IC120235, IC120355 and IC403579 were found to be high iron content amongst sixty six accessions. High iron containing accessions IC120239 (59.77 ppm), IC120235 (57.81 ppm), IC120355 (56.82 ppm) and one low iron containing IC344225 (9.69 ppm) were then explored for spatial expression profiling using genes belonging to ferritin, ZIP, YSL, His-rich NAC families and found high expression of ferritin and NAC gene in high mineral containing accessions. Histidine rich gene targeted studies showed 500 bp of isoform expressed in both high and low iron containing accessions, whereas, 297 bp isoform was found associated with high mineral containing foxtail millet accessions.

KEY WORDS :
Setaria italica, Micronutrients, *Ferritin, ZIP, YSL*, Histidine rich protein

How to cite this article : Moharil, M.P., Gangurde, S.S., Ingle, K.P., Khelurkar, V.C., Jadhav, P.V., Ghorade, R.B., Jadhao, S.M., Katkar, R.N., Dudhare, M.S. and Deshmukh, A.G. (2017). Molecular characterization of metal homeostasis related gene orthologs in nutri- rich foxtail millet accessions. *Agric. Update*, **12**(TECHSEAR-2) : 409-420; **DOI: 10.15740/HAS/AU/12.TECHSEAR(2)2017/409-420.**

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