

Drought tolerance, phosphorus efficiency and yield characters of upland rice lines

Publons ID	36406871
Wos ID	WOS:000340857700005
Doi	10.9755/ejfa.v26i1.14417
Title	Drought tolerance, phosphorus efficiency and yield characters of upland rice lines
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Publish Date	JAN 2014
Journal Name	EMIRATES JOURNAL OF FOOD AND AGRICULTURE
Citation	11
Abstract	Objective of this study was to evaluate the characters of drought tolerance, P efficiency and yield of some upland rice lines based on shoot biomass, P accumulation and grain yield. Nine lines of upland rice [viz. aromatic upland rice (Unsoed: G9, G13, G19, G35, G39), upland rice from Rice Research Center Sukamandi (IR-80340-23-B-B-1-B-B, IR 75885-25-1-3-B-5-1-2-B-B, IR 75885-26-2-3-B-18-B-2-1-B), upland rice from University of Mataram (Unram 1E)], four P doses per pot [viz. 0, 0.20, 0.40 and 0.55 kg P ₂ O ₅] and soil water availability [viz. field capacity (FC) (-10 kPa), 50% FC (-24 kPa), 75% FC (-17 kPa) and 25% FC (-30 kPa)] were tested. The study was arranged in randomized complete block design with three replicates. The result showed that upland rice lines of IR 75885-26-2-3-B-18-B-2-1-B, Unsoed G9 and Unsoed G19 resulted higher in grain yield under drought condition than others. Yet, Unram 1E and Unsoed G13 had potency to drought even low in grain yield. Meanwhile, upland rice lines of IR 75885-25-1-3-B-5-1-2-B-B, IR 75885-26-2-3-B-18-B-2-1-B and Unsoed G19 resulted higher in grain yield under low dose of P than others. Unsoed G9 had both characters in efficient and respond to P, and drought tolerance with high in grain yield. Therefore, it needs to evaluate the performance consistency of both characters on those lines through grown under real conditions in the field of rainfed areas.
Publish Type	Journal
Publish Year	2014
Page Begin	25
Page End	34
Issn	2079-052X
Eissn	2079-0538
Url	https://www.webofscience.com/wos/woscc/full-record/WOS:000340857700005
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