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(Kropff et

al., 1993)

(Fallah, 1995)

(Dobermann

.et al., 1998)

(Fallah and

(Rahman et al., 2009)

.Seadati, 1997)

(1998) Ladha et al. (1993) De Datta et al.

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(Jiang et al., 2005)

(Fisher, 1998)

(Fallah and Saadati, 1997)

(2009a) Zhang et al.

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(Ligeng et al., 2005)

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(Dong et al. 2009)

(RE) (AE) ()

(Gines et al., 1993)

(PE)

AE(kg kg⁻¹)= G_f- G_u/N_a ()

ARE (%) = (N_f - N_u/N_a) × 100 ()

PE (kg kg⁻¹) = BY_f - BY_u/N_f - N_u ()

(Ladha et al., 2000; Buresh and De Datta, 1990)

() G_f () G_u ()

N_a ()

N_f ()

N_u ()

(Van

BY_f ()

Noordwijk and Schotten, 1994)

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BY_u

(SAS, 1998) SAS

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.(Cassman et al., 1996)

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.(Mohammadian et al., 2011)

(Cassman

et al., 1996)

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/ a	/ ab	/ a	/ a	/ c	/ de	/ ab	cd	d	
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(Fallah, 1995)

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(Yoshida, 1981)

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(Dobermann and Fairhurst, 2000)

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