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(Kropff et

al., 1993)

.(Fallah, 1995)

(Dobermann

.et al., 1998)

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(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)

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.(Fisher, 1998)

.(Fallah and Saadati, 1997)

(2009a) Zhang et al.

ssoodaie78@gmail.com :

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(Ligeng et al., 2005)

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(Dong et al. 2009)

(RE) (AE)

(Gines et al., 1993)

(PE)

$$AE(kg\ kg^{-1}) = G_f - G_u / N_a \quad ()$$

$$ARE (\%) = (N_f - N_u / N_a) \times 100 \quad ()$$

$$PE (kg\ kg^{-1}) = BY_f - BY_u / N_f - N_u \quad ()$$

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

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G_f

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N_a ()

G_u

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N_f ()

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Noordwijk and Schotten, 1994)

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(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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(Fallah, 1995)

.(Yoshida, 1981)

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.(Dobermann and Fairhurst, 2000)

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