

ABSTRACT

Dominggus M.D. Tatuhey. 2014. Characterization of Foxtail Millet (*Setaria italica* L. Beauve) and Nitrogen Fertilization Effect on Growth and Yield. Under the supervisor of Tati Nurmala and Warid Ali Qosim.

Foxtail millet (*Setaria italica* L. Beauve) is a small grain in cereal crops as a potential food source substitution. Foxtail millet can be grown in arid and semi-arid, but not tolerant of waterlogged. Characterization of foxtail millet from four provinces (South Sumatera, Bengkulu, West Java and Papua) is unknown yet. The objective of this study to determine the characters of 48 accessions of foxtail millet in paddy fields and determine the effect of nitrogen fertilization on growth and yield of 3 accessions of foxtail millet. The experiments were conducted in two experiments: (1) characterization experiments designed according to the Augmented Design, consisting of 45 accessions as new entries and 3 accessions as checks, (2) fertilization experiments were designed according to the Split Plot Design and consists of two factors ; accession (main plot) consist of; V1= accession Papua, V2 = accession West Java and V3 = accession Bengkulu, and nitrogen fertilizer dosage (subplots) consist of; N0 = 0 kg N/ha, N1 = 45 kg N/ha, N2 = 90 kg N/ha, and N3 = 135 kg N/ha. The experiments were conducted from January to November 2013 in the experimental station of the Faculty of Agriculture, Padjadjaran University Jatinangor at height of 720 m above sea level and 770 m above sea level. Analysis of lipid conducted at the Laboratory of Agro-industrial Technology, University of Padjadjaran Jatinangor. The observations on 26 qualitative and quantitative characters based on UPOV guidance. Observations on two experiments conducted on the growth and yield components; plant height, number of leaves, number of tillers, leaf area index, relative growth rate, net assimilation rate, panicle length, panicle weight, seed weight per plant, weight of 1000 grain, harvest index, and lipid. The results should there were variations in the qualitative and quantitative characters. Genetic variability found in 9 accessions i.e acc 7 and acc 20, acc 9 and acc 19, acc 3 and 24, acc 11, acc 12 and acc 14. The result should that accessions (V) and doses of nitrogen fertilizer (N) effect on growth and yield components, except for N uptake, and lipid. Lipid levels in all three accessions ranged from 3,32-4.01%. The analysis not found of gluten content in grain of foxtail millet.

Keyword : Characterization, foxtail millet, nitrogen

ABSTRAK

Dominggus M. D. Tatuhey, 2014. Karakterisasi Jawawut (*Setaria italica* L. Beauve) Di Lahan Sawah dan Pengaruh Pemupukan Nitrogen Terhadap Pertumbuhan dan Hasil Jawawut. Dibawah bimbingan Tati Nurmala dan Warid Ali Qosim.

Jawawut (*Setaria italica* L. Beauve) merupakan jenis tanaman sereal berbiju kecil yang berpotensi sebagai sumber pangan substitusi. Jawawut dapat tumbuh pada lahan semi kering dan kering, tetapi tidak toleran pada lahan tergenang. Informasi tentang karakter jawawut hasil eksplorasi dari empat provinsi (Sumatera Selatan, Bengkulu, Jawa Barat dan Papua) belum diketahui. Penelitian ini bertujuan untuk mengetahui karakter 48 aksesori jawawut yang ditanam pada lahan sawah dan mengetahui pengaruh pemupukan nitrogen terhadap pertumbuhan dan hasil. Penelitian dilakukan dalam dua percobaan yaitu (1) percobaan karakterisasi yang dirancang menurut rancangan *Augmented*, terdiri dari 45 aksesori yang diuji (*new entries*) dan 3 aksesori pembandingan (*Checks*), (2) percobaan pemupukan yang dirancang menurut Rancangan Petak Terpisah (*Split Plot Design*), dan terdiri dari dua faktor yaitu ; faktor aksesori (*main plot*); V1 = aksesori Papua, V2 = aksesori Jawa Barat dan V3 = aksesori Bengkulu, dan faktor dosis pemupukan nitrogen (*subplot*); N0= 0 kg N/ha, N1= 45 kg N/ha, N2 = 90 kg N/ha, dan N3 = 135 kg N/ha. Percobaan dilakukan di kebun percobaan Fakultas Pertanian Universitas Padjadjaran Jatinangor pada ketinggian 720 m dpl dan 770 m dpl, dan berlangsung sejak Januari – November 2013. Pengamatan pada percobaan pertama dilakukan terhadap 26 karakter kualitatif dan kuantitatif berdasarkan panduan UPOV. Pengamatan pada percobaan kedua dilakukan terhadap komponen pertumbuhan dan hasil ; tinggi tanaman, jumlah daun, jumlah anakan, indeks luas daun, laju tumbuh relatif, laju asimilasi bersih, serapan N, panjang malai, bobot malai, bobot biji, bobot 1000 biji, indeks panen, kadar lemak dan kadar gluten. Hasil percobaan pertama menunjukkan bahwa terdapat variasi pada karakter kualitatif dan juga kuantitatif. Hubungan kekerabatan yang sangat dekat terdapat pada 9 aksesori yaitu acc 7 dan acc 20, acc 9 dan acc 19, acc 3 dan acc 24, acc 11, acc 12 dan acc 14. Hasil percobaan kedua menunjukkan bahwa aksesori (V) dan dosis pemupukan nitrogen (N) berpengaruh terhadap semua komponen pertumbuhan dan hasil, kecuali pada serapan N, kadar lemak dan gluten. Kadar lemak pada ketiga aksesori jawawut berkisar antara 3,32-4.01%. Hasil analisis gluten tidak menemukan adanya kadar gluten pada biji jawawut.

Kata kunci : karakterisasi, jawawut, nitrogen