PRODUKSI BUAH DAN BIJI NANGKA PADA BEBERAPA TINGKAT KERAPATAN TANAMAN

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INTISARI

Selama ini perbanyakan nangka dilakukan dengan menggunakan biji. Untuk produksi semai nangka di persemaian dalam jumlah besar diperlukan biji bernas dalam jumlah yang banyak. Pengadaan biji bernas ini menjadi permasalahan dalam pengadaannya. Ukuran buah yang lebih besar belum tentu menghasilkan biji dalam jumlah yang banyak dan ukuran biji yang lebih besar juga belum tentu menghasilkan viabilitas yang lebih tinggi. Kerapatan tanaman dan ukuran pohon diduga berpengaruh terhadap kualitas produksi biji. Penelitian ini dilakukan untuk mengetahui produksi buah dan biji nangka, serta kualitas produksi biji bernas yang dihasilkan pada berbagai tingkat kerapatan pohon.

Pengambilan sampel dilakukan di dua populasi tanaman nangka, yaitu populasi di Karangmojo dan Wanagama, dengan menggunakan metode *purposive sampling* pada 6 perlakuan tingkat kerapatan tanaman, yaitu (1) stratum rapat (>191 pohon ha^{-1}) di Karangmojo, (2) stratum sedang (128-191 pohon ha^{-1}) di Karangmojo, (3) stratum rendah (<128 pohon ha^{-1}) di Karangmojo, (4) stratum rapat (>340 pohon ha^{-1}) di Wanagama, (5) stratum sedang (227-340 pohon ha^{-1}) di Wanagama, dan (6) stratum rendah (<227 pohon ha^{-1}) di Wanagama. Pada masing-masing tingkat kerapatan dibuat 3 plot dengan ukuran 784 m^2 di populasi Karangmojo dan 414 m^2 di populasi Wanagama serta diambil data berupa jumlah pohon per plot, jumlah pohon berbuah per plot, jumlah buah per pohon, dan stadium kemasakan buah. Sampel buah juga diambil dari pohon soliter yang berada di Fakultas Kehutanan UGM dan Kuncen, Yogyakarta. Sampel buah kemudian diamati morfologinya dan dibelah untuk dipisahkan bijinya. Untuk mengetahui kualitas biji yang diproduksi dari beberapa tingkat kerapatan tanaman dilakukan uji perkecambahan biji.

Hasil penelitian menunjukkan bahwa produksi buah dan biji paling banyak dihasilkan dari stratum rapat di pertanaman Karangmojo. Adapun di populasi tanaman Wanagama produksi buah dan biji paling banyak dihasilkan dari stratum sedang. Berdasarkan hasil analisis varians dapat diketahui bahwa kerapatan tanaman berpengaruh signifikan terhadap persen perkecambahan ($p < 0,05$). Persen perkecambahan biji tertinggi dihasilkan biji yang dikoleksi dari stratum rapat di Karangmojo dan stratum rendah di Wanagama.

Kata kunci: kerapatan tanaman, biji bernas, ukuran buah, ukuran biji, persen kecambah.

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FRUIT AND SEED PRODUCTION OF JACKFRUIT AT SEVERAL LEVELS OF PLANT DENSITIES

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ABSTRACT

Jackfruit has been propagated using seeds. For the mass production of seedlings in the nursery, a large number of fertile seeds are needed. A critical problem is obtaining sufficient quantities of the fertile seeds. The larger fruit size is certainly not associated with containing a large number of seeds; the larger seed size is also certainly not associated with having higher viability. Plant density and tree size are expected to affect the quality of seed production. This research was conducted to determine the fruit and seeds production of jackfruit, and the quality of the production of fertile seeds that produced at several levels of plant densities.

Sampling was carried out in two populations of jackfruit plantations (Karangmojo and Wanagama) using a purposive sampling method at six levels of plant densities. They were (1) high density (>191 trees ha^{-1}) in Karangmojo, (2) medium densiy (128-191 trees ha^{-1}) in Karangmojo, (3) low density (<128 trees ha^{-1}) in Karangmojo, (4) high density (>340 trees ha^{-1}) in Wanagama, (5) medium denisity (228-340 trees ha^{-1}) in Wanagama, and (6) low density (<228 trees ha^{-1}) in Wanagama. At each density level, 3 plots were made with a size of 784 m^2 in Karangmojo and 414 m^2 in Wanagama. Data were collected consisting of number of trees per plot, number of fruiting trees per plot, number of fruit per tree, and stage of fruit maturity. Fruit samples were also taken from solitary trees in the Faculty of Forestry UGM and Kuncen, Yogyakarta. Each sample was observed for its morphology and then split to separate the seeds. To determine the quality of seeds produced from several levels of plant density, a seed germination test was carried out.

The results showed that the highest production of both fruits and seeds was observed at the high-density plantation in Karangmojo. In Wanagama, the highest production of both fruits and seeds was observed at the medium-density plantation. The analysis of variance showed that plant density had a significant effect on the percentage of seed germination ($p < 0,05$). The highest percentage of seed germination was observed at seeds collected from high-density plantation in Karangmojo and low-density plantation in Wanagama.

Keywords: plant density, fertile seeds, fruit size, seed size, percentage of germination.

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