ABSTRAK

ZUHROTUT THOYIBAH. 13112015. Program SarjanaUniversitasMuhammadiyah Gresik. KeragamanGenetikGalur-galurKacang Bambara (*Vignasubterranea* L. Verdcourt) BerdasarkanSifatPolongdanBijiKoleksi*Bambara Groundnut Research Centre* (BGRC).DosenPembimbing: Ir. Endah Sri Redjeki, MP., M.Phil. DosenPenguji I: Prof. Dr. Ir. H. Setyo Budi, MS. DosenPenguji II: Ir. Suhaili, M.Si.

Kacangbambaramerupakantanamankacang-kacanganketigaterpenting di Indonesia setelahkacangtanahdankacangtunggak, namunbelumterlaludiperhatikan di Indonesia tetapimemilikiperandalam program diversifikasipangan. Salah satumasalahpenting yang perludiketahuidalampeningkatanproduksikacangbambara di Indonesia adalahperlunyakajiantentanggalur-galurkacangbambarasebagaibahanutamapemuliaantanaman. Keragamangenetiksangatmempengaruhikeberhasilansuatu proses seleksidalam program pemuliaantanaman. Selainitu, perlujugadiketahuinilaiheritabilitasdankemajuangenetikharapankarakter-karakter yang akandijadikan target seleksigunamengetahuikemajuanseleksi. Penelitianinibertujuanmengetahuidanmenentukankeragamangenetikberdasarkansifatpolongdanbijisebagaisumbergenetikuntukseleksilebihlanjutkacangbambara. PenelitiandilaksanakanselamaduabulanmulaidaribulanNopemberhinggaDesember 2017.Penelitianinidilakukan di Laboratorium*Bambara Groundnut Research Centre* (BGRC) FakultasPertanianUniversitasMuhammadiyah Gresik.Rancanganpercobaan yang digunakanadalahRancanganAcakLengkap (RAL) dengansatufaktoryaitugenotipakacangbambarasebanyak 3 genotipadenganjumlahulangan 31. Variabelpenelitian yang diamatimeliputivariabelkuantitatifdankualitatif.Variabelkuantitatifterdiridarijumlah; bobotkering; diameter polong, ketebalankulitpolong, diameter; bobotkering; jumlahbiji, anova, ujilanjut $BNT_{0.05}$, ujiheritabilitas, nilaikoefisienkeragamangenotipdanfenotip, keragamangenetikdankemajuangenetikharapan; karakterkualitatifterdiridaribentuk; warna; teksturpolong, warnatesta, bentukbiji, warna hilum, bentuk hilum, coraksekitar hilum, janggutpadabiji. Hasilpenelitianmenunjukkanbahwanilaiheritabilitasmenunjukkansedangdanrendah.Rendahnyanilaiheritabilitaspadavariabelkuantitatifdipengaruhiolehfaktorlingkungan.Nilaikemajuangenetikharapantertinggiadalah 38% padakarakterbobotkeringbiji.Dengandemikiankarakterbobotkeringbijidapatdijadikanacuanuntukseleksilebihlanjutpadatanamankacangbambara.

Kata kunci*: heritabilitas; kacangbambara; kemajuangenetik; keragamangenetik; koefisienkeragaman.*

ABSTRACT: Bambara groundnut are the third most important legume crop in Indonesia after peanuts and cowpea, but have not been given much attention in Indonesia but have a role in food diversification programs. One important problem that needs to be known in increasing the production of bambaragroundnut in Indonesia is the need for a study of the strains of bambara beans as the main ingredient of plant breeding. Genetic diversity greatly influences the success of a selection process in a plant breeding program. In addition, it is also necessary to know the heritability value and genetic progress of the characters' expectations that will be targeted for selection in order to know the progress of the selection. This study aims to determine and determine genetic diversity based on the nature of the pods and seeds as a genetic source for further selection of bambaragroundnut. The study was conducted for two months from November to December 2017. The research was conducted at the Bambara Groundnut Research Center (BGRC) Laboratory of the Faculty of Agriculture Muhammadiyah University Gresik. The experimental design used was a Completely Randomized Design (CRD) with one factor, namely genotipabambaragroundnut totaling 3 genotipas with 31 replications. The observed research variables consisted of quantitative and qualitative variables. Quantitative variables consist of quantities; dry weight; pod diameter, pod thickness, diameter; dry weight; number of seeds, anova, 5% LSD test, heritability test, coefficient value of genotype and phenotype diversity, genetic diversity and genetic progress expectations; Qualitative character consists of forms; color; pod texture, testa color, seed shape, hilum color, hilum shape, style around hilum, beard on seeds. The results showed that the heritability was moderate and low. The low value of heritability on quantitative variables is influenced by environmental factors. The highest expected genetic advancement value is 38% in the dry weight character of the seeds. Thus the dry weight character of the seed can be used as a reference for further selection in the bambaragroundnut plant.

Keywords: *heritability; bambaragroundnut; genetic progress; genetic diversity; coefficient of diversity*.