

## **PERTUMBUHAN DAN POLIMORFISME GEN INSULIN (*INS*) PADA AYAM HIBRIDA [*Gallus gallus gallus* (Linnaeus, 1758)] BC<sub>1</sub> HASIL PERSILANGAN ♀ PELUNG DAN ♂ F<sub>1</sub>**

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### **INTISARI**

Permintaan konsumsi ayam baik daging maupun telur semakin meningkat setiap tahunnya dan diperlukan berbagai upaya untuk memenuhi kebutuhan tersebut. Ayam lokal seperti ayam Kampung memiliki kualitas daging dan telur yang baik namun kecepatan pertumbuhan relatif lambat. Kecepatan pertumbuhan ayam salah satunya dipengaruhi secara signifikan oleh gen insulin (*INS*). Pada penelitian ini dilakukan persilangan *backcross* yang bertujuan untuk mendapatkan sifat unggul dari induk dan galur murni baru, serta polimorfisme gen *INS* pada ayam BC<sub>1</sub> hasil persilangan ♀ F<sub>1</sub> dan ♂ Pelung. Metode penelitian dilakukan dengan menyilangkan ♀ F<sub>1</sub> dan ♂ Pelung sehingga didapatkan 6 ekor ayam BC<sub>1</sub>. Ayam BC<sub>1</sub> dipelihara secara intensif selama 7 minggu dan dilakukan penimbangan bobot ayam setiap 7 hari untuk mengetahui pertumbuhan bobotnya. Diamati karakter fenotip kualitatif dan kuantitatif ayam BC<sub>1</sub>. Setelah umur 7 minggu, darah ayam BC<sub>1</sub> dikoleksi dari *vena axillaris* untuk diisolasi DNA. Kemudian DNA diamplifikasi untuk mendapatkan sekuens gen *INS* menggunakan metode ARMS, amplifikasi DNA untuk mendapatkan sekuens gen *INS* juga dilakukan pada sampel darah ayam BC<sub>1</sub> resiprok (n=9). Hasil pengamatan pertumbuhan bobot dan karakter fenotip kuantitatif dianalisis menggunakan metode *Independent Sample T-Test* menggunakan program SPSS. Amplifikasi gen *INS* dianalisis untuk mengetahui polimorfisme yang terjadi pada ayam BC<sub>1</sub> dan ayam BC<sub>1</sub> resiprok. Hasil penelitian pada minggu ke-7 menunjukkan karakter bahwa fenotip kuantitatif dan kualitatif ayam BC<sub>1</sub> merupakan perpaduan pewarisan dari parentalnya. Rata-rata bobot ayam BC<sub>1</sub> pada minggu ke-7 sebesar 519,33 gram. Terdapat polimorfisme C+1549T pada gen *INS* ayam BC<sub>1</sub> resiprok sebesar 44,44% bergenotip CT, 55,56% bergenotip TT, dan pada ayam BC<sub>1</sub> tidak terdapat polimorfisme dengan 100% bergenotip CT.

Kata kunci : gen *INS*, GAMA Ayam, Pelung, pertumbuhan, polimorfisme.

## **GROWTH AND INSULIN (*INS*) GENE POLYMORPHISMS IN HYBRID CHICKEN [*Gallus gallus gallus* (Linnaeus, 1758)] BC<sub>1</sub> DERIVED CROSSES BETWEEN ♀ PELUNG AND ♂ F<sub>1</sub>**

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### **ABSTRACT**

Chicken meat and egg demand are increasing annually and it needs efforts from government and also society to fulfill it. Local chicken as Kampung has good quality of meat and egg, but it has relatively slow growth rate. Chicken growth rate is influenced significantly by insulin gene (*INS*). In this study backcross breeding between ♀ Pelung chicken and ♂ F<sub>1</sub> chicken was conducted to produce superior characters which were inherited by its parent in order to obtain a new strain, also to study insulin gene (*INS*) polymorphisms in BC<sub>1</sub> chicken. BC<sub>1</sub> chicken (n=6) was reared intensively for 7 weeks, during rearing the weight of BC<sub>1</sub> chicken was measured every 7 days to observed its weight growth. Qualitative and quantitative phenotype of BC<sub>1</sub> chickens were observed. Then, BC<sub>1</sub> chicken blood was collected from vena axillaris for DNA isolation. DNA was amplified to obtain the *INS* gene using ARMS method in BC<sub>1</sub> chickens and its recipros (n=9). The observation of weight growth and quantitative phenotype was analysed using *Independent Sample T-Test* method which was on SPSS program. The amplified *INS* gene was analysed to study the polymorphism. Results of this study on 7<sup>th</sup> weeks were BC<sub>1</sub> chicken's phenotypic qualitative and quantitative character were inherited as a mix by its parents. Body weight mean on 7<sup>th</sup> weeks of BC<sub>1</sub> was 519,33 gram. There was polymorphism which was located in *INS* gene C+1549T, in BC<sub>1</sub> recipros there was 44,44% CC genotype, 55,56% TT genotype, and in BC<sub>1</sub> was 100% CT.

Keywords : GAMA Ayam, Growth, *INS* gene, Pelung, polymorphism.