

**POLIMORFISME GEN *GHRELIN* PENYANDI
PERTUMBUHAN PADA AYAM [*Gallus gallus gallus* (Linnaeus,
1758)] BACKCROSS GENERASI 2 HASIL PERSILANGAN ♀
PELUNG DENGAN ♂ BACKCROSS GENERASI 1**

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INTISARI

Ayam [*Gallus gallus gallus* (Linnaeus, 1758)] merupakan unggas yang banyak diternakkan oleh masyarakat Indonesia dan dimanfaatkan sebagai sumber protein hewani. Terdapat berbagai jenis ayam di Indonesia salah satunya adalah ayam Kampung yang memiliki keunggulan dalam kualitas daging dan telurnya. Keunggulan tersebut belum diimbangi dengan kemampuan produktivitas yang baik. Menurut penelitian Li *et al.* (2006) terdapat *Single Nucleotide Polymorphisms* (SNPs) pada gen *cGHRL* yang terbukti berpengaruh terhadap bobot ayam. Penelitian ini bertujuan untuk mengetahui karakter fenotip ayam hibrida, pertumbuhan bobot ayam hibrida selama 7 minggu, dan polimorfisme gen *cGHRL* penyandi pertumbuhan ayam hibrida BC₂ hasil persilangan ayam ♀ Pelung dengan ayam ♂ BC₁. Metode penelitian dilakukan dengan menyilangkan ♀ Pelung dan ♂ BC₁ sehingga didapatkan ayam BC₂, yang dipelihara secara intensif selama 7 minggu dan dilakukan penimbangan bobot ayam setiap 7 hari. Diamati karakter fenotip kualitatif dan kuantitatif ayam BC₂ setelah umur 7 minggu, dilakukan isolasi DNA menggunakan metode *salting out* pada darah ayam BC₂ yang dikoleksi dari bagian *vena axillaris*. Analisis molekular gen *cGHRL* menggunakan metode *Allele Specific-Polymerase Chain Reaction (AS-PCR)* dengan menggunakan dua *primer forward* dan satu *primer reverse* untuk mendeteksi adanya polimorfisme. Hasil kemudian dielektroforesis dan diketahui adanya polimorfisme gen *cGHRL* ekson 1 pada ayam hibrida BC₂ sebanyak 84% karena memiliki genotip CT. Analisis pengaruh polimorfisme dengan bobot ayam menunjukkan hasil 93% tidak signifikan. Rata-rata pertumbuhan berat badan ayam BC₂ lebih rendah dibandingkan dengan ayam BC₁, ayam BC₂ resiprok, ayam Pelung dan ayam *Broiler* yaitu sebesar 582 gram. Karakter fenotip ayam hibrida BC₂ yaitu bentuk jengger tunggal; warna jengger merah dan orange; warna paruh hitam dan kuning; warna leher putih, abu-abu, coklat-muda dan hitam; warna punggung abu-abu, coklat-muda dan hitam; warna dada hitam, abu-abu dan coklat-muda; warna femur putih, hitam, abu-abu dan coklat-muda; warna kaki hitam, abu-abu, putih dan kehijauan; warna bulu coklat-muda, hitam dan abu-abu.

Kata kunci : Ayam hibrida, *AS-PCR*, *Broiler*, *cGHRL*, Pelung, polimorfisme.

**GHRELIN GENE POLYMORPHISMS ENCODING
GROWTH IN CHICKEN [(*Gallus gallus gallus* (Linnaeus, 1758))]
SECOND GENERATION OF BACKCROSS DERIVED
CROSSES BETWEEN ♀ PELUNG WITH ♂ FIRST
GENERATION OF BACKCROSS**

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ABSTRACT

Chicken [*Gallus gallus gallus* (Linnaeus, 1758)] is a fowl reared by the Indonesian and used as a source of animal protein. There are various types of chicken in Indonesia one of them is Kampung chicken, it has an advantage in the quality of meat and eggs. That advantage has not been matched with good productivity capabilities. According to research of Li *et al.* (2006) any Single Nucleotide Polymorphisms (SNPs) in *cGHRL* gene can influenced significantly to growth rate. This research aims to determine the phenotypic characters of hybrid chicken, chicken weight hybrid growth for 7 weeks and polymorphism gen *GHRL* encoding in hybrid chicken BC₂ derived between ♀ Pelung with ♂ BC₁. The research was conducted by doing a cross between chicken ♀ Pelung and chicken ♂ BC₁ and will have chicken hybrid BC₂ to reared intensively for 7 weeks, during rearing the weight of BC₂ chicken is measured every 7 days. Qualitative and quantitative phenotype of BC₂ chicken are observed. After 7 weeks, BC₂ chicken blood is collected from vena axillaris to do DNA isolation using salting out method. Molecular analysis of *cGHRL* gene with Allele Specific-Polymerase Chain Reaction method using two forward primer and one reverse primer for detection of polymorphisms and electrophoresis. The result showed that there were any polymorphisms of *cGHRL* exon 1 on chicken BC₂ hybrids as much as 84% for genotype CT. Analysis of the influence of polymorphism with chicken weight 93% showed no significant results. The average weight gain of chicken BC₂ lower than, BC₁ chicken, resiprok BC₂ chicken, Pelung chicken and Broiler chicken in the amount of 582 grams. Character phenotype of BC₂ have a single comb; comb color red and orange; beak colors are black and yellow; neck colors are white, gray, light brown and black; backs colors are gray, light brown and black; chest colors are black, gray and brown; femur colors are white, black, gray and brown; leg colors are black, gray, white and greenish; feather colors are brown-pink, black and gray.

Keywords : AS-PCR, *Broiler*, *cGHRL* gene, hybrid chicken, Pelung, polymorphism.