

**ASOSIASI POLIMORFISME GEN *CHICKEN GROWTH HORMONE*
(*cGH*) INTRON 3 (G1705A) DENGAN PERTUMBUHAN
AYAM (*Gallus gallus domesticus*, Linn. 1758) BACKCROSS I
HASIL PERSILANGAN F₁ DAN PELUNG**

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INTISARI

Ayam asli Indonesia atau ayam kampung merupakan ayam yang memiliki kualitas daging dan telur yang baik, namun pertumbuhannya relatif lambat. Secara genetik, gen yang mempengaruhi pertumbuhan pada ayam salah satunya adalah gen *Chicken Growth Hormone (cGH)* (GenBank accession No. AY461843). Gen *cGH* intron 3 (G1705A) berasosiasi signifikan dengan pertumbuhan ayam. Pada penelitian ini dilakukan *backcross* yang bertujuan untuk mendapatkan sifat unggul dari indukannya agar didapatkan galur baru yang memiliki karakter yang lebih homozigot dan dipelajari asosiasi gen *cGH* intron 3 (G1705A) dengan pertumbuhan ayam BC₁ hasil persilangan ayam ♀ F₁ dengan ayam ♂ pelung. Cara kerja yang dilakukan pada penelitian ini adalah dilakukan persilangan antara ayam ♀ F₁ dan ayam ♂ pelung. *Day Old Chicken (DOC)* dipelihara secara intensif selama 7 minggu. Selama dipelihara dilakukan pengukuran bobot ayam setiap 7 hari dan juga dihitung total pakan yang dihabiskan selama 7 minggu untuk memperoleh nilai FCR, setelah umur 7 minggu diamati karakter fenotip kualitatif dan kuantitatif dari ayam BC₁. Setelah itu dilakukan koleksi darah, isolasi DNA, *Polymerase Chain Reaction - Restriction Fragment Length Polymorphism (PCR-RFLP)*, dan elektroforesis untuk mempelajari asosiasi antara gen *cGH* intron 3 (G1705A) dengan pertumbuhan ayam BC₁. Pada penelitian ini dihasilkan ayam BC₁ memiliki karakter kualitatif dan kuantitatif bervariasi merupakan perpaduan antara kedua indukannya. Nilai FCR yang dihasilkan adalah $2,32 \pm 0,06$. Ayam hibrida BC₁ 89% memiliki genotip homozigot dominan (GG) dan 11% heterozigot (GA) serta terjadi polimorfisme pada gen *cGH* intron 3 basa nukleotida nomor 1705.

Kata kunci : Pelung, *Backcross*, Pertumbuhan, gen *cGH*, Isolasi DNA, PCR-RFLP.

**ASSOCIATED CHICKEN GROWTH HORMONE (*cGH*) GENE
INTRON 3 (G1705A) POLYMORPHISMS WITH
GROWTH IN CHICKEN (*Gallus gallus domesticus*, Linn. 1758)
BACKCROSS I DERIVED CROSSES BETWEEN F₁ WITH PELUNG**

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ABSTRACT

Indonesian native chicken or kampung chicken is a chicken that has a good quality of meat and eggs, but it has disadvantage on the relatively slow growth. Genetically, a gene that can influence the chicken's growth one of which is Chicken Growth Hormone (*cGH*) (GenBank accession No. AY461843). *cGH* gene intron 3 (G1705A) associated significantly with chicken's growth. This research aims to produce the superior character of the parent in order to obtain a new strain that has more homozygous character and learned associations between *cGH* gene intron 3 (G1705A) with BC₁'s growth from derivated crosses between ♀ F₁ with ♂ Pelung. This study is conducted with crossing between ♀ F₁ and ♂ pelung. The Day Old Chicken (DOC) is intensively reared for 7 weeks. During the rearing, the weight of chickens are measured every 7 days and also calculated the total feed spent for 7 weeks to obtain the value of FCR. After the age of 7 weeks the qualitative and quantitative phenotype character of chicken BC₁ is observed. Then *cGH* gene are collected from chicken's blood, DNA isolation, Polymerase Chain Reaction - Restriction Fragment Length Polymorphism (PCR-RFLP), and electrophoresis to study association between *cGH* gene intron 3 (G1705A) with chicken's growth BC₁. Results of this study was produced chicken BC₁ has a qualitative and quantitative character which still vary a mix between both parent. FCR value worth $2,32 \pm 0,06$. BC₁ hybrid chicken genotype has 89% dominant homozygous (GG) and 11% heterozygous (GA). Polymorphism occurs in intron 3 *cGH* gene nucleotide number 1705.

Keywords : Pelung, backcross, Growth, *cGH* gene, DNA isolation, PCR-RFLP.