PENGARUH PENAMBAHAN NANOEMULSI MINYAK BUAH MERAH (*Pandanus conoideus* L.) SEBAGAI ZAT ADITIF PADA AIR MINUM TERHADAP PROFIL LIPID DARAH AYAM BROILER STRAIN COBB-500

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan nanoemulsi minyak buah merah (*Pandanus conoideus* L.) pada air minum sebagai zat aditif terhadap profil lipid darah ayam broiler. Penelitian ini dilakukan di kandang *closed house* PT. Japfa Comfeed Fakultas Peternakan UGM dengan menggunakan ayam broiler strain Cobb-500. Pemeliharaan ayam broiler dilakukan mulai dari DOC (*day old chick*) sampai umur 28 hari sebanyak 96 ekor ayam yang dikelompokkan menjadi 4 perlakuan. Perlakuan tersebut meliputi air minum tanpa penambahan zat aditif (P0), air minum + 3 ml/l nanoemulsi minyak buah merah (P1), air minum + 6 ml/l nanoemulsi minyak buah merah (P2), dan air minum + 9 ml/l nanoemulsi minyak buah merah (P3). Masing-masing kelompok perlakuan terdiri dari 3 ulangan dan setiap ulangan terdiri dari 8 ekor ayam broiler. Variabel yang diamati pada penelitian ini adalah konsumsi air minum, konsumsi pakan, kadar kolesterol total, kadar LDL (*low-density lipoprotein*), kadar trigliserida, dan kadar HDL (*high-density lipoprotein*) darah ayam broiler. Data yang diperoleh dalam penelitian ini dianalisis menggunakan uji *One Way* ANOVA berdasarkan Rancangan Acak Lengkap Pola Searah dan dengan uji *Duncan's New Multiple Range Test* (DMRT) dengan nilai P<0,05. Uji dibantu dengan *software* personal komputer yaitu IBM SPSS Statistik 23. Hasil penelitian menunjukkan bahwa penambahan nanoemulsi minyak buah merah (*Pandanus conoideus* L.) tidak memberikan pengaruh nyata (P>0,05) terhadap konsumsi pakan, tetapi berpengaruh nyata (P<0,05) terhadap konsumsi air minum. Selain itu, penambahan nanoemulsi minyak buah merah juga berpengaruh nyata (P<0,05) terhadap kadar trigliserida darah ayam broiler, tetapi tidak berpengaruh yang nyata (P>0,05) terhadap kadar kolesterol total, LDL (*low-density lipoprotein*), dan HDL (*high-density lipoprotein*) darah. Kesimpulannya, penambahan nanoemulsi minyak buah merah (*Pandanus conoideus* L.) dapat mempengaruhi konsumsi air minum dan menaikkan kadar trigliserida darah ayam broiler. Namun, tidak mempengaruhi konsumsi pakan, kadar kolesterol total, LDL (*low-density lipoprotein*), dan HDL (*high-density lipoprotein*) darah ayam broiler.

Kata kunci: ayam broiler, minyak buah merah, nanoemulsi, profil lipid, zat aditif.

THE EFFECT OF ADDING RED FRUIT OIL NANOEMULSION (*Pandanus conoideus* L.) AS AN ADDITIVE TO DRINKING WATER ON THE BLOOD LIPID PROFILE OF COBB-500 BROILER CHICKENS

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ABSTRACT

This study aimed to determine the effect of adding nanoemulsion of red fruit oil (*Pandanus conoideus* L.) to drinking water as an additive on the blood lipid profile of broiler chickens. The research was conducted in the closed house facility of PT Japfa Comfeed Indonesia Faculty of Animal Science UGM using strain Cobb-500 broiler chickens. Broiler chickens were raised from DOC (day old chick) until 28 days of age, using 96 birds divided into four treatment groups. The treatments consisted of drinking water without additive (P0), drinking water + 3 ml/l nanoemulsion of red fruit oil (P1), drinking water + 6 ml/l nanoemulsion of red fruit oil (P2), and drinking water + 9 ml/l nanoemulsion of red fruit oil (P3). Each treatment comprised three replications, with eight broiler chickens per replication. The variables observed in this study were drinking water consumption, feed consumption, total cholesterol level, LDL (low-density lipoprotein) level, triglyceride level, and HDL (high-density lipoprotein) level in the blood of broiler chickens. The data obtained were analyzed using a One Way ANOVA based on a Completely Randomized Design with a one-way pattern, followed by Duncan's New Multiple Range Test (DMRT) at a significance level of $P<0.05$. The analysis was performed using the computer software IBM SPSS Statistics 23. The results showed that the addition of nanoemulsion of red fruit oil (*Pandanus conoideus* L.) had no significant effect ($P>0.05$) on feed consumption but had a significant effect ($P<0.05$) on drinking water consumption. Furthermore, the addition of red fruit oil nanoemulsion significantly affected ($P<0.05$) the triglyceride levels in the blood of broiler chickens but had no significant effect ($P>0.05$) on total cholesterol, LDL (low-density lipoprotein), and HDL (high-density lipoprotein) levels. In conclusion, the addition of nanoemulsion of red fruit oil (*Pandanus conoideus* L.) can affect drinking water consumption and increase triglyceride levels in broiler chickens. However, it does not affect feed consumption, total cholesterol, LDL (low-density lipoprotein), or HDL (high-density lipoprotein) levels in the blood of broiler chickens.

Keywords: broiler chickens, red fruit oil, nanoemulsion, lipid profile, feed additive.