

## News &amp; Comments

## Potential for Poultry Viscera Meal to be Preserved as a Source of Protein in Broiler Diets

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Poultry Viscera Meal (PVM) is a powdered product made from the complete gastrointestinal tract that has been properly dried under regulated conditions after being cooked or acid-treated. Viscera from chicken are increasingly being used as a replacement for protein concentrate in the feed for dairy cattle, beef cattle, and poultry due to its higher nutritional content and relatively lower cost. Since there are only tiny amounts of viscera available after the open-air killing, it must be kept in storage for a few days to amass enough for industrial-scale processing. In that instance, maintaining the raw viscera's storage condition would be difficult to produce a high-quality product because of microbiological and biochemical alterations. The present study was designed to determine the usefulness of citric acid and sulfuric acid for short time preservation of poultry viscera and their potentiality as a source of protein in the broiler diet.

This study was conducted at Shahjalal Animal Nutrition Field Laboratory, Bangladesh Agricultural University (BAU), Mymensingh 2202, Bangladesh from January-April 2020. Fresh poultry viscera were purchased from a nearby market and stored in two separate compartments, one at chilling temperature and the other at ambient temperature (25–30 EC) (4 EC). At 24 and 48 hrs of storage, however, pepsin digestibility and microbiological quality were assessed. About 5 g of viscera were combined with 45 mL of distilled water, then homogenized in a grinder for 1 min. As stated in the prior experiment, fresh viscera were procured from the neighbourhood market and combined with 1.0% citric acid right away. According to AOAC, the proximate components of feeds and viscera meal were examined in three separate samples. The SPSS 2011 Statistical Software Program was used to analyse the data using the MIXED model (Experiment 1) and one-way ANOVA (Experiment 2).

Apart from BWG and feed cost per kg of BW, there was no difference ( $p > 0.05$ ) in FI, FCR, and PEI amongst the dietary groups. The BWG was highest in the 0% PVM group, intermediate in the 2.5 % PVM group, and lowest in the 5.0 % PVM group. However, the 5.0% PVM group, which was followed by the 2.5 and 0% PVM groups, had the lowest feed cost per kg of BW. The keeping quality of protein meals is preserved by the stability of pH, which tends to decrease microbial activity. The lower pH that results from the cooled sample's lower temperature and the addition of acids to samples that have been preserved may have limited the growth and spread of proteolytic bacteria. Due to the oxidation of peroxides, which produced higher POV in extremely rotten products from lipid oxidation. In actual practice, pepsin digestibility is utilized to estimate the bioavailability of amino acids in protein meals.



Sulfuric acid has a substantially lower dissociation value than citric acid. In the present investigation, protein concentrate was used in place of poultry viscera meal, and treatment groups' growth rates were shown to be comparably lower. However, the cheaper cost of feed made up for the broiler's poorer growth performance caused by PVM. It was decreased by 6-9%, with the 5.0% PVM group having the lowest value.

Lipid oxidation in PVM was stopped by 1.0 % citric/sulfuric acid, which also preserved storage quality. Up to 48 hrs of observation, the pH value, FFA, and POV in both groups did not exceed the permitted threshold, suggesting that storage time may be increased, albeit more research is required.

#### **JOURNAL REFERENCE**

Md. Rahat Ahmad Redoy, Md. Mahbubur Rahman, Mohammad Al-Mamun and Khan Md. Shaiful Islam, 2021. Short time preservation of poultry viscera meal and its potentiality as a source of protein in broiler diet. *Int. J. Poult. Sci.*, 20: 67-75.

#### **KEYWORDS**

Broiler diet, citric acid, free fatty acid, pepsin digestibility, peroxide value

