

INTISARI

Rahmawati, LDP. 2025. Gambaran Mikroskopis Jaringan Hati Ayam dengan Fiksasi *Neutral Buffer Formalin* 10% dan Gula Pasir (*Saccharum officinarum*) 10%, 15%, 20%, 100%. Program Studi D4 Analis Kesehatan, Fakultas Ilmu Kesehatan, Universitas Setia Budi.

Histoteknik adalah sebagian prosedur atau cara membuat sajian histologi dari specimen tertentu melalui beberapa proses hingga siap diamati dan dianalisa. Langkah awal histoteknik adalah fiksasi. Fiksasi bertujuan untuk mempertahankan sel atau jaringan agar tetap pada tempatnya serta tidak mengalami pergantian bentuk atau ukuran. NBF 10% banyak digunakan karena kemampuannya mempertahankan morfologi menghasilkan preparat histopatologi berkualitas. Namun, memberi dampak buruk. Tujuan penelitian ini untuk mengamati gambaran mikroskopis jaringan hati ayam yang difiksasi dengan NBF 10% dan gula pasir 10%,15%,20%,100%.

Penelitian menggunakan metode eksperimen deskriptif kuantitatif dengan rancangan *cross sectional*. Sampel berupa lima hati ayam dengan variasi perlakuan adalah satu hati ayam yang difiksasi menggunakan NBF 10% sebagai kontrol dan empat hati ayam yang masing-masing difiksasi dengan gula pasir 10%,15%,20% dan 100%. Hasil histoteknik diproses dan diamati dibawah mikroskop.

Hasil makroskopis NBF 10% warna coklat, kenyal, penampang coklat, hasil mikroskopis menunjukkan jaringan terdiri dari lobulus dibatasi jaringan ikat fibrous, hexagonal, lobulus menunjukkan trigonum kiernan terdiri dari vena porta dan ductus biliaris, bagian tengah terdapat vena sentralis, sel tersusun radial, hepatosis, polyhedral, sitoplasma eosinofilik, sebagian bervacuola dan inti bulat anak inti kecil ditengah. Sedangkan hasil makroskopis gula pasir 100% coklat, kenyal, penampang coklat, hasil mikroskopis terlihat sel nekrosis, inti sel mengecil, piknotik, sitoplasma eosinofilik kesan fiksasi kurang baik. Kesimpulan menunjukkan bahwa larutan fiksasi gula pasir 10%,15%,20% mengalami kerusakan dan tidak bisa diproses. Sedangkan gula pasir 100% dapat dilakukan fiksasi, namun memberi gambaran jaringan kurang baik tidak serupa dengan jaringan yang telah difiksasi NBF 10%.

Kata kunci : Gambaran mikroskopis hati ayam, Fiksasi, *Neutral Buffer Formalin* 10%, Gula Pasir

ABSTRACT

Rahmawati, LDP. 2025. Microscopic Description of Chicken Liver Tissue Fixed with 10% *Neutral Buffered Formalin* and Granulated Sugar (*Saccharum officinarum*) at concentrations of 10%,15%,20% and 100%. Study Program of D4 Health Analyst, Faculty of Health Sciences, Universitas Setia Budi.

Histotechnology refers to a set of procedures used to prepare histological specimens from specific tissues through several processing stages until they are ready for observation and analysis. The first step in histotechnology is fixation. Fixation aims to preserve cells or tissues in place and prevent changes in their shape or size. 10% Neutral Buffered Formalin (NBF) is commonly used due to its ability to maintain tissue morphology and produce high-quality histopathological preparations. However, its use can also have harmful effects. The aim of this study was to observe the microscopic features of chicken liver tissue fixed with 10% NBF and varying concentrations of table sugar solutions 10%, 15%, 20%, and 100%.

This research used a descriptive quantitative experimental method with a cross-sectional design. The samples consisted of five chicken livers with different treatments: one liver fixed with 10% NBF as a control, and four livers each fixed with 10%, 15%, 20%, and 100% table sugar solutions. The histological preparations were processed and examined under a microscope.

Macroscopic results of the liver fixed with 10% NBF showed a brown color, firm texture, and brown cross-section. Microscopically, the tissue showed lobules separated by fibrous connective tissue, with a hexagonal shape. The lobules displayed Kiernan's triads consisting of the portal vein and bile ducts, with a central vein in the middle. Cells were arranged radially, with hepatocytes appearing polyhedral, eosinophilic cytoplasm, some vacuolated, and nuclei round with small nucleoli centered. In contrast, macroscopic results of the liver fixed with 100% table sugar showed a similar brown color, firm texture, and brown cross-section. However, the microscopic examination revealed signs of necrosis, shrunken nuclei (pyknotic) and eosinophilic cytoplasm indicating suboptimal fixation. In conclusion, fixation using 10%, 15%, and 20% sugar solutions led to tissue damage and could not proceed through the histological process. Meanwhile, 100% sugar solution was able to fix the tissue to a certain extent, but the quality of the histological structure was inferior and not comparable to that of tissue fixed with 10% NBF.

Keywords: Microscopic appearance of chicken liver, Fixation, 10% Neutral Buffered Formalin, Granulated Sugar.