

Pineapple liquid waste as nata de pina raw material = Limbah cair nanas sebagai bahan baku pembuatan nata de pina

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Abstrak

Penelitian bertujuan mengkaji kuantitas, kualitas, kelayakan ekologis dan ekonomis pembuatan nata de pina limbah cair nanas (LCN). Penelitian menggunakan rancangan acak lengkap (RAL) dengan 3 perlakuan yaitu (A) LCN tanpa penambahan nutrisi; (B) LCN dengan penambahan nutrisi dan (C) LCN penyimpanan 6 bulan dengan penambahan nutrisi. Produk nata meliputi berat, tebal, warna, kecerahan. Kandungan serat dan sisa limbah dianalisis dengan Anova. Analisis deskriptif untuk kelayakan ekologis dan ekonomi. Hasil penelitian terdapat perbedaan yang sangat nyata perlakuan fermentasi LCN. Ketebalan nata berturut-turut dari tinggi kerendah perlakuan B 1,58 cm A 1,24 cm, dan C 0,88 cm. Berat nata B 889 gr, A 616,4 gr, dan C 477,8 gr. Kadar serat C 9,3%, B 7,6% dan A 6,9% dengan kualitas warna, kecerahan, dan serat, sesuai standar untuk makanan. Pembuatan nata de pina mengurangi volume LCN 46,2-89,1% (Sig. 0,001). Berdasarkan baku mutu limbah, biological oxygen demand (BOD), chemical oxygen demand (COD) dan total suspended solid (TSS) di bawah ambang batas yang dipersyaratkan kecuali pH. Secara ekonomi pembuatan nata de pina layak (BC ratio 4,7). Secara keseluruhan pembuatan nata de pina dari LCN menghasilkan nata yang baik serta layak secara ekologis dan ekonomis.

.....This research aims to study the quantity, quality, ecological and economic feasibility of nata de pina production (NP) from pineapple liquid waste (PLW). The design of the study employs complete random design (CRD) with three treatments: PLW without nutrients addition (A), PLW nutrients addition (B), and PLW stored for six months with nutrients addition (C). The nata de pina's production factors measured were weight, thickness, fiber content, color, brightness, and residual waste. The highest weight was reached in treatment B (899 grams), followed by treatment A (616.4 grams), and C (477.8 grams). The thickness of NP of the height and low as in treatment B (1.58 cm) followed by treatment A (1.24 cm) and C (0.88 cm), respectively. The highest fiber content was found in treatment C (9.3%) followed by treatment B (7.6%) and A (6.9%), respectively. The fiber content, along with color quality and brightness fit with food standards. The production of NP may reduce the volume of the PLW from 46.2% to 89.1% ($p=0.001$). Based on the standard value of biological oxygen demand (BOD), chemical oxygen demand (COD), total suspended solid (TSS) below to the required threshold except pH. The production of NP is economically feasible to 4.7 BC ratio. The overall manufacture of nata de pina from PLW produces better and feasible product ecologically and economically.