



### PROTEKSI ISI LAPORAN AKHIR PENELITIAN

Dilarang menyalin, menyimpan, memperbanyak sebagian atau seluruh isi laporan ini dalam bentuk apapun kecuali oleh peneliti dan pengelola administrasi penelitian

## LAPORAN AKHIR PENELITIAN TAHUN TUNGGAL

ID Proposal: 6b57caf4-95fc-4692-a9b6-bde9ab746584  
Laporan Akhir Penelitian: tahun ke-1 dari 1 tahun

### 1. IDENTITAS PENELITIAN

#### A. JUDUL PENELITIAN

Pemanfaatan Limbah Ikan Termodifikasi Sebagai Pakan Multiguna Pada Itik Alabio dalam Meningkatkan Kandungan Omega 3 Pada Telur dan Menurunkan Kolesterol Daging.

#### B. BIDANG, TEMA, TOPIK, DAN RUMPUN BIDANG ILMU

Bidang Fokus RIRN / Bidang Unggulan Perguruan Tinggi	Tema	Topik (jika ada)	Rumpun Bidang Ilmu
Pangan	Teknologi pascapanen dan rekayasa teknologi pengolahan pangan	Diversifikasi dan hilirisasi produk pertanian, perkebunan, peternakan, dan perikanan	Nutrisi dan Makanan Ternak

#### C. KATEGORI, SKEMA, SBK, TARGET TKT DAN LAMA PENELITIAN

Kategori (Kompetitif Nasional/ Desentralisasi/ Penugasan)	Skema Penelitian	Strata (Dasar/ Terapan/ Pengembangan)	SBK (Dasar, Terapan, Pengembangan)	Target Akhir TKT	Lama Penelitian (Tahun)
Penelitian Kompetitif Nasional	Penelitian Tesis Magister	SBK Riset Dasar	SBK Riset Dasar	3	1

### 2. IDENTITAS PENGUSUL

Nama, Peran	Perguruan Tinggi/ Institusi	Program Studi/ Bagian	Bidang Tugas	ID Sinta	H-Index
ACHMAD JAELANI Ketua Pengusul	Universitas Islam Kalimantan Muhammad Arsyad Al Banjari Banjarmasin	Peternakan		5972578	3
Taupikurrahman, S.Pt Mahasiswa Bimbingan 1	Fakultas Pertanian Universitas Islam Kalimantan Muhammad Arsyad Al Banjari	-	Melakukan Fermentasi Limbah Ikan dengan Kapang Varietas Lokal, Uji Kolesterol, Pengolahan Data	0	0
Dr TINTIN ROSTINI S.Pt, M.P Dosen Pembimbing Anggota 1	Universitas Islam Kalimantan Muhammad Arsyad Al Banjari Banjarmasin	Peternakan	Melakukan analisis dan pengujian Omega 3 dan Kolesterol, Pengolahan data, Penyusunan draft publikasi,	5974986	1

### 3. MITRA KERJASAMA PENELITIAN (JIKA ADA)

Pelaksanaan penelitian dapat melibatkan mitra kerjasama, yaitu mitra kerjasama dalam melaksanakan penelitian, mitra sebagai calon pengguna hasil penelitian, atau mitra investor

Mitra	Nama Mitra
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### 4. LUARAN DAN TARGET CAPAIAN

#### Luaran Wajib

Tahun Luaran	Jenis Luaran	Status target capaian ( <i>accepted, published, terdaftar atau granted, atau status lainnya</i> )	Keterangan ( <i>url dan nama jurnal, penerbit, url paten, keterangan sejenis lainnya</i> )
1	Artikel di Jurnal Internasional Terindeks di Pengindeks Bereputasi	Accepted	Pakistan Journal of Nutrition (Q3)

#### Luaran Tambahan

Tahun Luaran	Jenis Luaran	Status target capaian ( <i>accepted, published, terdaftar atau granted, atau status lainnya</i> )	Keterangan ( <i>url dan nama jurnal, penerbit, url paten, keterangan sejenis lainnya</i> )
1	Artikel pada Conference/Seminar Internasional	Terbit dalam Prosiding	International Conference of Agricultural and Food Science (ICOFA)

### 5. ANGGARAN

Rencana anggaran biaya penelitian mengacu pada PMK yang berlaku dengan besaran minimum dan maksimum sebagaimana diatur pada buku Panduan Penelitian dan Pengabdian kepada Masyarakat Edisi 13 Revisi.

**Total RAB 1 Tahun Rp. 39,137,000**

**Tahun 1 Total Rp. 39,137,000**

Jenis Pembelanjaan	Item	Satuan	Vol.	Biaya Satuan	Total
Analisis Data	Biaya analisis sampel	Unit	1	5,725,000	5,725,000
Analisis Data	Tiket	OK (kali)	1	1,250,000	1,250,000
Analisis Data	Penginapan	OH	1	350,000	350,000
Analisis Data	HR Pengolah Data	P (penelitian)	2	200,000	400,000
Analisis Data	Uang Harian	OH	2	200,000	400,000
Analisis Data	HR Sekretariat/Administrasi Peneliti	OB	3	300,000	900,000
Analisis Data	Transport Lokal	OK (kali)	3	600,000	1,800,000
Bahan	ATK	Paket	1	650,000	650,000
Bahan	Bahan Penelitian (Habis Pakai)	Unit	1	6,587,000	6,587,000
Pelaporan, Luaran Wajib, dan Luaran Tambahan	Biaya seminar internasional	Paket	1	2,750,000	2,750,000
Pelaporan, Luaran Wajib, dan Luaran Tambahan	Publikasi artikel di Jurnal Internasional	Paket	1	3,750,000	3,750,000
Pengumpulan Data	HR Pembantu Peneliti	OJ	1	200,000	200,000
Pengumpulan Data	HR Pembantu Lapangan	OH	1	100,000	100,000
Pengumpulan Data	Transport	OK (kali)	3	100,000	300,000
Pengumpulan Data	Uang Harian	OH	3	100,000	300,000
Pengumpulan Data	Uang harian rapat di dalam kantor	OH	3	100,000	300,000
Pengumpulan Data	Uang harian rapat di luar kantor	OH	5	75,000	375,000
Pengumpulan Data	Biaya konsumsi	OH	5	75,000	375,000

Jenis Pembelanjaan	Item	Satuan	Vol.	Biaya Satuan	Total
Pengumpulan Data	FGD persiapan penelitian	Paket	6	75,000	450,000
Sewa Peralatan	Peralatan penelitian	Unit	1	2,750,000	2,750,000
Sewa Peralatan	Ruang penunjang penelitian	Unit	2	875,000	1,750,000
Sewa Peralatan	Transport penelitian	OK (kali)	3	725,000	2,175,000
Sewa Peralatan	Obyek penelitian	Unit	100	55,000	5,500,000

## 6. HASIL PENELITIAN

**A. RINGKASAN:** Tuliskan secara ringkas latar belakang penelitian, tujuan dan tahapan metode penelitian, luaran yang ditargetkan, serta uraian TKT penelitian.

limbah ikan merupakan sisa-sisa bagian pada tubuh ikan yang yang sudah tidak dapat digunakan atau dikonsumsi oleh manusia. Jika dibiarkan menumpuk begitu saja maka akan menyebabkan pencemaran organik, bau, dan mengurangi nilai estetika lingkungan sekitarnya. Limbah ikan cukup melimpah di Kalimantan Selatan, namun pemanfaatannya untuk ternak masih terbatas meskipun memiliki keunggulan dimana kandungan proteinya, dan kandungan omega 3 nya cukup tinggi. Disamping itu limbah ikan tidak bersaing dengan manusia, karenanya merupakan potensi yang sangat besar untuk pakan ternak. Terdapat kendala dari limbah ikan ini diantaranya kadar air yang cukup tinggi sehingga apabila disimpan lama akan berbau busuk karena mudah ditumbuhi mikroba. Untuk meningkatkan nilai guna dari limbah ikan, maka perlu terobosan modifikasi pengolahan pakan agar kekurangan tadi bisa diatasi, diantaranya adalah dengan fermentasi. Proses fermentasi selain meningkatkan nilai nutrisi pakan, mengurangi bau dan jeda dapat meningkatkan pencernaan pakan. Tujuan penelitian ini adalah memanfaatkan limbah ikan menjadi pakan ternak bagi ternak itik petelur melalui modifikasi pengolahan pakan itik, sehingga pakan yang dimodifikasi tersebut memiliki tingkat pencernaan yang lebih baik dan telur itik yang dihasilkan tinggi akan kandungan Omega 3 dan turunnya kandungan kolesterol. Penelitian ini dilakukan dengan mencobakan berbagai tingkat limbah ikan yang sudah difermentasi dalam pakan (dengan tingkat penggunaan 0-20% dalam pakan itik petelur) pada kandang individual untuk melihat kualitas produksi telur (% duck day), kualitas eksterior, dan interior telur Itik serta kandungan kolesterol pada telur dan daging itik. Luaran yang ditargetkan dalam publikasi pada jurnal Internasional Bereputasi Journal of Animal Health and Production yang terindex scopus (Q3), Publikasi pada seminar Nasional Lahan Basah di Universitas lambung Mangkurat pada tanggal 23-24 November 2020. Adapun TKT yang dilakukan adalah mulai TKT 2 dan pada akhir penelitian pada TKT 3.

**B. KATA KUNCI:** Tuliskan maksimal 5 kata kunci.

Limbah ikan; fermentasi; itik Alabio; kolesterol; omega 3

Pengisian poin C sampai dengan poin H mengikuti template berikut dan tidak dibatasi jumlah kata atau halaman namun disarankan sesingkat mungkin. Dilarang menghapus/modifikasi template ataupun menghapus penjelasan di setiap poin.

**C. HASIL PELAKSANAAN PENELITIAN:** Tuliskan secara ringkas hasil pelaksanaan penelitian yang telah dicapai sesuai tahun pelaksanaan penelitian. Penyajian dapat berupa data, hasil analisis, dan capaian luaran (wajib dan atau tambahan). Seluruh hasil atau capaian yang dilaporkan harus berkaitan dengan tahapan pelaksanaan penelitian sebagaimana direncanakan pada proposal. Penyajian data dapat berupa gambar, tabel, grafik, dan sejenisnya, serta analisis didukung dengan sumber pustaka primer yang relevan dan terkini.

Dokumen pendukung luaran Wajib #1

Luaran dijanjikan: Artikel di Jurnal Internasional Terindeks di Pengindeks Bereputasi

Target: Accepted

Dicapai: Submitted

Dokumen wajib diunggah:

1. Naskah artikel
2. Bukti submit

Dokumen sudah diunggah:

1. Bukti submit
2. Naskah artikel

Dokumen belum diunggah:

- Sudah lengkap

Nama jurnal: Journal of Animal Health and Production

Peran penulis: corresponding author | EISSN: 23082801

Nama Lembaga Pengindek: Scopus

URL jurnal: <http://manuscripthandler.com/nexus/Journal-of-Animal-Health-and-Production/home>

Judul artikel: UTILIZATION OF FERMENTED FISH WASTE AS MULTIPURPOSE FEED IN IMPROVING THE QUALITY AND OMEGA 3 CONTENT IN ALABIO DUCK EGG

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# UTILIZATION OF FERMENTED FISH WASTE AS MULTIPURPOSE FEED IN IMPROVING THE EGG PRODUCTION AND OMEGA 3 CONTENT IN ALABIO DUCK EGG

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**Abstract.** This research aims to analyze the utilization of fish waste modified through fermentation using EM-4 against the appearance of egg-laying Alabio ducks. Alabio ducks used are 5-6 months old as many as 50 duck are placed in cage cages that are filled with 2 tails each. Feed given refers to the needs of laying ducks with 18% protein and Metabolic Energy 2900 Kcal. Feed is given 150-200 g.bird<sup>-1</sup>.day<sup>-1</sup>. As for drinking water is given on an ad libitum. The research design used is a Complete Random design with 5 feed treatments each fermented fish waste of 0%, 5%, 10%, 15% and 20% with 5 replication. The results showed that the utilization of fermented fish waste has a positive influence on the increased production of Alabio duck eggs (% duck day), exterior quality and interior of Alabio duck eggs. The use of fermented fish waste up to 15% in duck rations, providing the best results against the appearance of production and interior quality of alabio duck eggs.

**Keywords:** Fish Waste, fermentation, omega 3, Alabio duck egg

## Introduction

Alabio duck is a germplasm that is very well known especially in South Kalimantan. The advantages of duck eggs compared to other poultry eggs include rich in minerals, vitamin B6, pantoic acid, thiamine, vitamin A, vitamin E, niacin, and vitamin B12. In addition to the advantages, duck eggs also have a deficiency compared to other poultry eggs that have a high content of saturated fatty acids that stimulate increased blood cholesterol levels. The cholesterol levels of duck eggs are approximately twice as high as chicken eggs. To increase the content of omega-3 fatty acids and lower cholesterol in livestock products especially egg products can be done through feed engineering with the addition of alesandry plant oil et al. 1998; Sceideler et al; 1998; Apriyanto et al; 1997; Herber and Van Elswyk;1996) or fermented feed (Collins et al,1997).

Fish waste is the remains of parts on the body of fish that can no longer be used or consumed by humans. If left to accumulate alone it will cause organic pollution, odor, and reduce the aesthetic value of the surrounding environment. Fish waste is quite abundant in South Kalimantan, but its utilization for livestock is still limited despite the advantages of its protein

39 content, and its high omega 3 content. Besides, fish waste does not compete with humans, hence  
 40 it is a very large potential for animal feed. There are obstacles dali waste this fish among others  
 41 high enough water content that if stored long will smell rotten because it is easily overgrown  
 42 microbes. To increase the value of fish waste, it is necessary to breakthrough modification of  
 43 feed processing so that the deficiencies can be overcome, among others by fermentation.  
 44 Fermentation process in addition to increasing the nutritional value of feed, reducing odor and  
 45 juda can improve feed digestibility.

46 Fish waste can be fish that are no longer worth consuming or processing, or from processing  
 47 waste such as fish stomach contents and other parts that are not commercialized. Fresh fish waste  
 48 is not much different from fresh fish. Fish innards waste contains high protein and unsaturated  
 49 fats, in addition fresh fish waste also contains omega 3 fatty acids. Omega 3 fatty acids are  
 50 essential fatty acids that are very useful for the human body. The purpose of this study is to  
 51 analyze the utilization of fermented fish waste in rations against the production and quality of  
 52 alabio duck eggs.

## 53 MATERIALS AND METHODS

### 54 Time and Place

55 The research was conducted at the Agricultural Laboratory of the Center for the Study of  
 56 Agricultural Technology of South Kalimantan and the Feed Technology Laboratory of the  
 57 Faculty of Agriculture of the Islamic University of Kalimantan MAB from March to November  
 58 2020.

### 59 Materials

60 Ingredients used include: 40 adult Alabio ducks fermented fish waste, other conventional  
 61 feed materials such as yellow corn, soybean meal, rice bran, fishmeal, coconut meal, premix, DL  
 62 Methionine, Bone meal, EM-4. The tools used are grinder machines, feed mixers, cages as many  
 63 as 25 units, bulb lamps, feed places and drinking places, digital scales. The amount of feed given  
 64 as much as 750Kg for 50 alabio ducks laying for 60 days. Feeding trial was conducted in the  
 65 cage of Duck Poultry Laboratory Of The Agricultural Technology Assessment Agency of South  
 66 Kalimantan. Feed milling is carried out using a grinder machine capacity of 200 kg/h and feed  
 67 mixing is carried out using horizontal mixer capacity of 100 kg.

### 68 Methods

69 The study used a Complete Randomized Design (RAL) of laying ducks with 5 treatments  
 70 and 5 replays and each replay consisted of 2 tails. The treatment used is the level of feeding of  
 71 fermented fish waste as additional feed against the content of omega 3 and egg cholesterol of  
 72 ducks. The treatment in this study consisted of control, 0%, 5%, 10%, 15% and 20%  
 73 fermentation of fish waste in rations. The variables observed in this study are Duck day egg  
 74 production (%), Exterior quality and interior of duck eggs.

## 75 Statistical Analysis

76 In observations during the study, data was collected and analyzed to determine the  
77 difference in the effect of treatment on observed variables. The data obtained first tested its  
78 homogeneity with barlett tests, then analyzed statistics using variety analysis. If there is a real or  
79 very real influence then continue with the middle score test using duncan multiple area test  
80 (DMRT) according to Steel and Torrie (1993).

10

## 81 RESULTS AND DISCUSSIONS

82 In this study the composition of feed treatment is presented in Table 1.

83 The preparation of treatment rations based on the nutritional needs of laying ducks is 18%  
84 Coarse Protein and metabolic energy 2750-2800 Kcal (Nutrient Requirement of Duck from  
85 NRC, 2004). Based on the results of the study for 6 weeks obtained results as presented in Table  
86 1.

87 Table 2. Average appearance of Alabio duck egg production during study

### 88 Egg Production

89 Duck day production (%) Alabio ducks showed the highest scores on R20 treatment, while  
90 R5 and R10 treatments were still under control. This indicates that the use of fermented fish  
91 waste begins to be seen when it reaches 15% in rations. Actually this is very profitable because  
92 with the amount of 15%-20% able to replace khewani proteins such as fishmeal that are  
93 relatively expensive.. This value is much higher than biyatmoko research (2007), whose alabio  
94 duck egg production reached 67.32% with the administration of Niacin on its feed. It is  
95 suspected that in addition to the production life is close to peak production, also the difference in  
96 feeding of better sources of khewani protein., although the content of Protein and Energy is  
97 relatively the same. Solihat et al. (2003) states that egg production is influenced by feed, genetic  
98 and sex cooking speed.

### 99 Egg Weight

100 Based on DMRT test results, control treatment is higher than all treatments. This means the  
101 use of fermented fish waste in rations has not been able to increase the weight of alabio duck  
102 eggs, although in duck day egg production (%) the highest number of R20 treatments.

### 103 Ration Consumption

104 Based on the results of ration consumption, control treatment (R0) shows the highest feed  
105 consumption disbanding other treatments. This is in line with the weight of the resulting eggs  
106 including the highest. Even the treatment that can match the consumption of rations is the R20  
107 treatment, although statistically the R20 treatment is no different from R5, R10 and R15.

108



### 109 **Ration Conversion**

110 For ration conversions, it turns out to show no real different results for all treatments. This  
 111 value is a comparison between ration consumption and egg weight. So it is suspected that overall  
 112 there is a physiological state leading towards normality where if feed consumption is high it will  
 113 be manifested with a high egg weight, as well as vice versa. So by comparison it shows a  
 114 relatively normal hail.

### 115 **Egg Shape Index**

116 The egg shape index also shows results that do not show statistical differences. This  
 117 indicates that the resulting egg represents the normal shape of the oval egg. It is suspected that  
 118 eggs that tend to be normal ovals are produced from ducks that are approaching peak production.  
 119 Here it is used in the study is already 28 weeks old.

### 120 **Thick eggshell**

121 In the thick parameters of the kerabang does not show any difference, it is suspected that up  
 122 to 20% of the use of fermented fish waste, still does not increase the thickness of the kerabang.  
 123 The thickness of this ape is closely related to calcium and phosphor consumption as well as the  
 124 balance of Ca:P. In this study the thickness of the brotherly ranges from 347-358 ( $\mu\text{m}$ ) or 0.35-  
 125 0.36 mm. According to Fajarwati et al. the thickness of alabio duck egg has an average of 0.33  
 126 0.01 mm.

### 127 **Percentage Of eggshell Weight**

128 The thickness of the brotherly is closely related to the percentage of the weight of the  
 129 brother. The thicker it will increase the weight of the brotherly. However, there is a difference  
 130 between the weight of the control treatment (R0) with all treatments except R15. The highest  
 131 percentage of weight gained in R0 was 10.16% and the lowest was R5 treatment (9.21%).

### 132 **Egg Yolk Index**

133 The Yolk Index is related to the size of the egg. Usually the larger the yolk then the weight  
 134 of the egg will be greater. This yolk index is a high comparison of the yolk with the diameter of  
 135 the yolk. The value of the treatment egg yolk index ranges from 36.28 to 37.47. This value is  
 136 higher than the average egg yolk index in chickens which ranges from 33% – 50%. The highest  
 137 yolk index is obtained in R20 treatment.

138

## CONCLUSIONS

139 Utilization of fermented fish waste on Alabio ducks is able to provide the result of ration  
 140 conversion, egg shape index and thick forging that is not different from control (R0), but the  
 141 treatment of fish waste to egg production (% duck day), and egg yolk index shows better results  
 142 than control especially R20 treatment. The utilization of fermented fish waste can be used in  
 143 alabio duck rations up to 20%, without a negative effect on the performance of alabio duck egg

144 production. It is recommended that fermented fish waste can be used as a substitute for a protein  
145 source of animal up to 20% in Alabio ducks.

#### 146 **ACKNOWLEDGMENTS**

147 The study was funding by <sup>5</sup> Directorate of Research and Community Service of the Ministry of  
148 Research, Technology, Republic of Indonesia.

149

#### 150 **CONFLICT OF INTEREST**

151 All the authors were declaring that they have no conflict of interest.

152

#### 153 **AUTHORS CONTRIBUTION**

154 The experimental design was achieved by Achmad Jaelani, the actual research organized by  
155 Taufikurrahman and Tintin Rostini tabularized the data and done the statistical analyses.

156

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225 Table 1. Nutritional composition of treatment rations

Nutritional Content	Treatment				
	R 0	R 5	R 10	R 15	R 20
Crude Protein (%)	18,00	18,12	18,12	18,17	18,07
Crude fiber (%)	5,14	5,47	5,47	5,61	6,12
Crude Lipid (%)	4,80	6,57	6,57	6,72	6,84
Metabolizable Energy (Kkal)	2755	2758	2758	2786	2804
Metionin (%)	0,37	0,38	0,38	0,41	0,43
Lisin (%)	1,03	0,99	0,99	0,98	0,99
Calsium (%)	3,20	3,32	3,32	3,41	3,56
Phosfor Total (%)	0,65	0,71	0,71	0,76	0,82
Balanced Ca : P	4,92	4,67	4,67	4,48	4,34

226 Description : R 0 = Use of 0% Fermented Fish Waste in rations  
 227 R 5 = Use of 5% fermented Fish Waste in rations  
 228 R 10 = Use of 10% fermented Fish Waste in rations  
 229 R 15 = Use of 15% fermented Fish Waste in rations  
 230 R 20 = Use of 20% fermented Fish Waste in rations

231

232 Table 2. Average appearance of Alabio duck egg production

No	Variable	Treatment				
		R0	R5	R10	R15	R20
1.	Duck day production (%)	82,05a	65,58c	73,22b	82,47a	83,22a
2.	Egg weight (g)	72,39b	69,71a	70,15a	69,24a	70,48a
3.	Consumption (g.bird <sup>-1</sup> .day <sup>-1</sup> )	190a	177b	178b	178b	184ab
4.	Conversion ration	2,62	2,54	2,54	2,57	2,61
5.	Shape egg index	74,66	75,14	75,31	75,18	76,12
6.	Thickness eggshell (μm)	358	352	347	348	357
7.	Eggshell weight percentage (%)	10,16a	9,21b	9,68b	10,13a	9,24b
8.	Yolk index (%)	37,18a	36,28b	36,32b	37,24a	37,47a

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# Bukti Submission Manuscript

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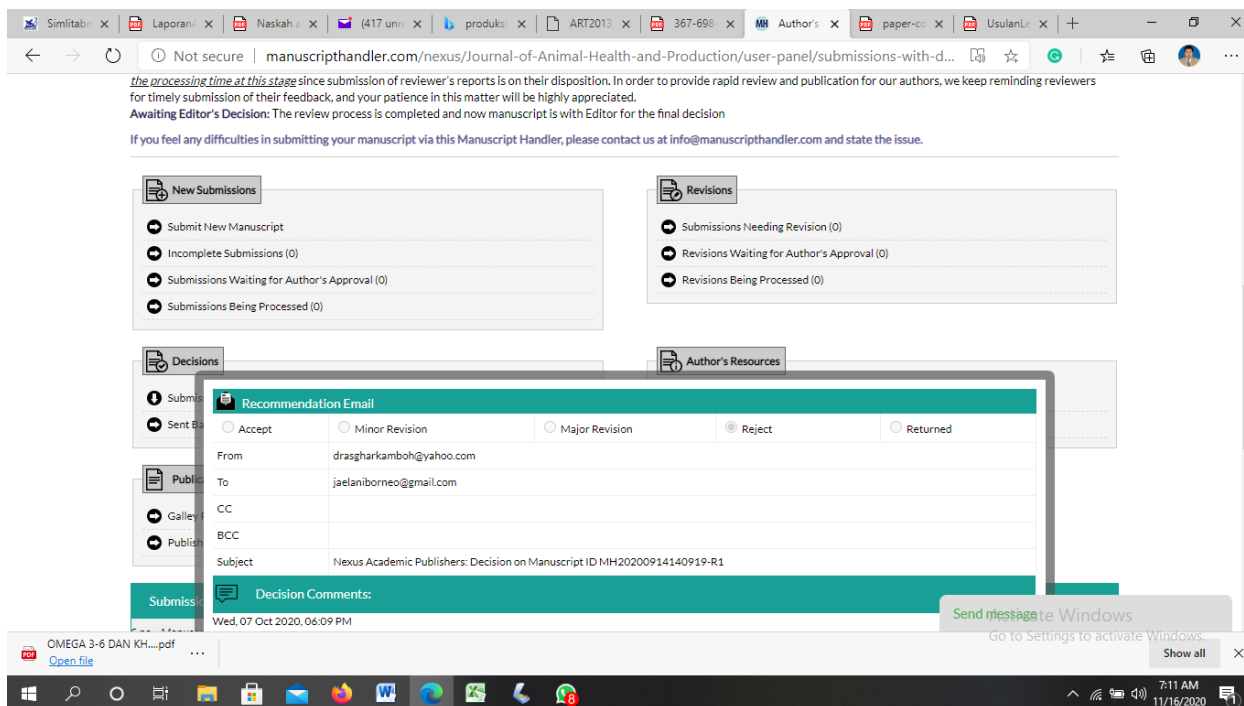
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# UTILIZATION OF FERMENTED FISH WASTE AS MULTIPURPOSE FEED AGAINST THE PERFORMANCE OF ALABIO DUCKS

Taufikurrahman<sup>1</sup>, Achmad Jaelani<sup>2</sup>, Tintin Rostini<sup>3</sup>

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## ABSTRACT

This study is in charge of analyzing the utilization of fish waste modified through fermentation using EM-4 against the appearance of egg-laying Alabio ducks. Alabio ducks used are 5-6 months old as many as 50 tails are placed in cage cages that are filled with 2 tails each. Feed given refers to the needs of laying ducks with 18% protein and Metabolic Energy 2900 Kcal. Feed is given 150-200 g/tail/day. As for drinking water is given on an ad libitum. The research design used is a Complete Random design with 5 feed treatments each fermented fish waste of 0%, 5%, 10%, 15% and 20% with 5 replays. The results showed that the utilization of fermented fish waste has a positive influence on the increased production of Alabio duck eggs (% duck day), exterior quality and interior of Alabio duck eggs. The use of fermented fish waste up to 15% in duck rations, providing the best results against the appearance of production and interior quality of alabio duck eggs.

**Keyword** : *Fish waste, Fermentation, cholesterol, alabio ducks*

## I. INTRODUCTION

Alabio duck is a germplasm that is very well known especially in South Kalimantan. The advantages of duck eggs compared to other poultry eggs include rich in minerals, vitamin B6, pantoteic acid, thiamine, vitamin A, vitamin E, niacin, and vitamin B12. In addition to the advantages, duck eggs also have a deficiency compared to other poultry eggs that have a high content of saturated fatty acids that stimulate increased blood cholesterol levels. The cholesterol levels of duck eggs are approximately twice as high as chicken eggs. To increase the content of omega-3 fatty acids and lower cholesterol in livestock products especially egg products can be done through feed engineering with the addition of alesandry plant oil et al. 1998; Sceilder et al; 1998; Apriyanto et al; 1997; Herber and Van Elswyk;1996) or fermented feed (Collins et al,1997).

Fish waste is the remains of parts on the body of fish that can no longer be used or consumed by humans. If left to accumulate alone it will cause organic pollution, odor, and reduce the aesthetic value of the surrounding environment. Fish waste is quite abundant in South Kalimantan, but its utilization for livestock is still limited despite the advantages of its protein content, and its high omega 3 content. Besides, fish waste does not compete with humans, hence it is a very large potential for animal feed. There are obstacles dali waste this

fish among others high enough water content that if stored long will smell rotten because it is easily overgrown microbes. To increase the value of fish waste, it is necessary to breakthrough modification of feed processing so that the deficiencies can be overcome, among others by fermentation. Fermentation process in addition to increasing the nutritional value of feed, reducing odor and juda can improve feed digestibility.

Fish waste can be fish that are no longer worth consuming or processing, or from processing waste such as fish stomach contents and other parts that are not commercialized. Fresh fish waste is not much different from fresh fish. Fish innards waste contains high protein and unsaturated fats, in addition fresh fish waste also contains omega 3 fatty acids. Omega 3 fatty acids are essential fatty acids that are very useful for the human body. The purpose of this study is to analyze the utilization of fermented fish waste in rations against the production and quality of alabio duck eggs.

## **II. LITERATURE REVIEW**

The issue of feed is still one of the main issues in the activities cultivation of livestock, both for poultry and ruminansia. This is mainly because feed is a significant component in the structure of livestock production costs. In addition to factors the cost, content and nutritional composition of feed will also have a direct effect on the health of Livestock. The health of livestock will also directly affect the productivity and quality of farm products. Feed is a major need in the livestock business and is very sustainability. The adequacy of feed, in terms of quantity and quality, is requirements that must be met to ensure that livestock are healthy, growing normally and production as expected. The needs and availability of feed, especially duck livestock laying, is currently greatly disrupted by the availability of feed materials and prices are soaring High. This condition has been going on for quite a while and causes the availability of feed Fluctuate. On industrial-scale farms the availability of feed can be addressed by procurement of feed specifically and or supplies of preserved feed, but for farms with very little ownership, so it is a problem that's hard. Reliance on imported feed components needs to be reduced in order for feed costs to be Pressed. Therefore, it is necessary to intensify efforts to explore local feed raw materials with good nutritional content, available in adequate quantities, and affordable by local/domestic farmers. Soedjana (2007) also agreed that efforts to improve livestock production must be based on local resources, meaning all potential and resources we have to be more optimized. Lisson et al. (2010) reported that although technology to increase productivity is basically available; but in general general, the adoption of technology to improve livestock cultivation system is still very slow.

Nutrient Needs on Laying Ducks One of the challenges for tropical countries such as Indonesia in the development of livestock especially poultry livestock is related to the availability and adequacy of nutrients is a protracted problem that must be solved with a sustainable approach to integrated feed technology. Integrated program of providing animal feed quality needs to be supported with round-the-clock availability in order to support our

intensive farming. Animal protein source feed ingredients have an advantage because the content of amino acids is complete, so it is very good for the growth and livestock production. In line with the development of feed technology, fish market waste can be effectively used as an alternative to animal feed laying ducks by providing treatment aimed at improving the productivity of laying ducks. Duck Egg Duck Egg is a source of animal protein that has a very delicious taste, easy to digested and highly nutritious. Duck eggs are generally large and white until bluish green. The average weight of duck eggs is 60-75 g (Resi, 2009).

Fish Waste is a waste resulting from a production process both industrial and (household), better known as garbage, whose presence at some point and certain places do not want the environment because it has no economic value. When chemically reviewed, this waste consists of organic compound chemicals and Inorganic. With a certain concentration and quantity, the presence of waste can negatively impact environment, especially for human health, so it is necessary to address the against waste. Fishery waste contains nutrients that are no different from mainly and has tiresFishery waste contains nutrients that are no different from and has also been extensively researched (Syukron, 2013). Fishery waste can come from upstream fisheries activities (aquaculture), and downstream fisheries activities (processing, transportation, marketing). Industrial by-results fishery treatment is generally in the form of head, innards, skin, bones, fins, blood and water used Production. Traditional processing activities are generally less able to utilize this side result, not even made use of it at all so it is wasted just like that. The by-products of fishery industry activities can be classified into five groups i.e. by-results in the utilization of a species or resource; residual processing from freezing, canning, and traditional industries, participating products; surplus from a harvest and remaining distribution (Syukron 2013).

### **III. METHODOLOGY**

#### **Time and Place**

The research was conducted at the Agricultural Laboratory of the Center for the Study of Agricultural Technology of South Kalimantan and the Feed Technology Laboratory of the Faculty of Agriculture of the Islamic University of Kalimantan MAB from March to November 2020.

#### **Materials**

Ingredients used include: 40 adult Alabio ducks fermented fish waste, other conventional feed materials such as yellow corn, soybean meal, rice bran, fishmeal, coconut meal, premix, DL Methionine, Bone meal, EM-4. The tools used are grinder machines, feed mixers, cages as many as 25 units, bulb lamps, feed places and drinking places, digital scales. The amount of feed given as much as 750Kg for 50 alabio ducks laying for 60 days. Feeding trial was conducted in the cage of Duck Poultry Laboratory Of The Agricultural Technology Assessment Agency of South Kalimantan. Feed milling is carried out using a grinder machine capacity of 200 kg/h and feed mixing is carried out using horizontal mixer capacity of 100 kg.

## Methods

The study used a Complete Randomized Design (RAL) of laying ducks with 5 treatments and 5 replays and each replay consisted of 2 tails. The treatment used is the level of feeding of fermented fish waste as additional feed against the content of omega 3 and egg cholesterol of ducks. The treatment in this study consisted of control, 0%, 5%, 10%, 15% and 20% fermentation of fish waste in rations. The variables observed in this study are Duck day egg production (%), Exterior quality and interior of duck eggs.

### Statistical Analysis

In observations during the study, data was collected and analyzed to determine the difference in the effect of treatment on observed variables. The data obtained first tested its homogeneity with barlett tests, then analyzed statistics using variety analysis. If there is a real or very real influence then continue with the middle score test using duncan multiple area test (DMRT) according to Steel and Torrie (1993).

## IV. RESULT AND DISCUSSION

In this study the composition of feed treatment is presented in Table 1. The preparation of treatment rations based on the nutritional needs of laying ducks is 18% 84 Coarse Protein and metabolic energy 2750-2800 Kcal (Nutrient Requirement of Duck from 85 NRC, 2004). Based on the results of the study for 6 weeks obtained results as presented in Table 1.

Table 1. Nutritional composition of treatment rations

Nutrition Content	Perlakuan				
	R 0	R 5	R 10	R 15	R 20
Crude Protein (%)	18,00	18,12	18,12	18,17	18,07
Crude fiber (%)	5,14	5,47	5,47	5,61	6,12
Crude fat (%)	4,80	6,57	6,57	6,72	6,84
Metabolizable Energy (Kkal)	2755	2758	2758	2786	2804
Metionin (%)	0,37	0,38	0,38	0,41	0,43
Lisin (%)	1,03	0,99	0,99	0,98	0,99
Calsium (%)	3,20	3,32	3,32	3,41	3,56
Phosfor Total (%)	0,65	0,71	0,71	0,76	0,82
Balanced Ca : P	4,92	4,67	4,67	4,48	4,34

Description : R 0 = Use of 0% Fermented Fish Waste in rations  
R 5 = Use of 5% fermented Fish Waste in rations  
R 10 = Use of 10% fermented Fish Waste in rations  
R 15 = Use of 15% fermented Fish Waste in rations  
R 20 = Use of 20% fermented Fish Waste in rations



Table 2. Average Performance of Alabio duck egg production during study

No	Variabel	Treatment				
		R0	R5	R10	R15	R20
1.	Duck day production (%)	82,05a	65,58c	73,22b	82,47a	83,22a
2.	Egg Weight (g)	72,39b	69,71a	70,15a	69,24a	70,48a
3.	Ration Consumption (g.bird <sup>-1</sup> .day <sup>-1</sup> )	190a	177b	178b	178b	184ab
4.	Ration Conversion	2,62	2,54	2,54	2,57	2,61
5.	Shape egg index	74,66	75,14	75,31	75,18	76,12
6.	Eggshell thickness (µm)	358	352	347	348	357
7.	Eggshell weight percentage (%)	10,16a	9,21b	9,68b	10,13a	9,24b
8.	Yolk egg color (%)	37,18a	36,28b	36,32b	37,24a	37,47a

### Egg Production

Duck day production (%) Alabio ducks showed the highest scores on R20 treatment, while R5 and R10 treatments were still under control. This indicates that the use of fermented fish waste begins to be seen when it reaches 15% in rations. Actually this is very profitable because with the amount of 15%-20% able to replace khewani proteins such as fishmeal that are relatively expensive. This value is much higher than Biyatmoko research (2007), whose alabio duck egg production reached 67.32% with the administration of Niacin on its feed. It is suspected that in addition to the production life is close to peak production, also the difference in feeding of better sources of khewani protein., although the content of Protein and Energy is relatively the same. Solihat et al. (2003) states that egg production is influenced by feed, genetic and sex cooking speed. Egg Weight Based on DMRT test results, control treatment is higher than all treatments. This means the use of fermented fish waste in rations has not been able to increase the weight of alabio duck eggs, although in duck day egg production (%) the highest number of R20 treatments.

### Ration Consumption

Based on the results of ration consumption, control treatment (R0) shows the highest feed consumption disbanding other treatments. This is in line with the weight of the resulting eggs including the highest. Even the treatment that can match the consumption of rations is the R20 treatment, although statistically the R20 treatment is no different from R5, R10 and R15. 108 4

### Ration Conversion

For ration conversions, it turns out to show no real different results for all treatments. This value is a comparison between ration consumption and egg weight. So it is suspected that overall there is a physiological state leading towards normality where if feed consumption is high it will be manifested with a high egg weight, as well as vice versa. So by comparison it shows a relatively normal hail.

### Egg Shape Index

The egg shape index also shows results that do not show statistical differences. This indicates that the resulting egg represents the normal shape of the oval egg. It is suspected that eggs that tend to be normal ovals are produced from ducks that are approaching peak production. Here it used in the study is already 28 weeks old. Thick eggshell In the thick parameters of the kerabang does not show any difference, it is suspected that up to 20% of the use of fermented fish waste, still does not increase the thickness of the kerabang. The thickness of this ape is closely related to calcium and phosphor consumption as well as the balance of Ca:P. In this study the thickness of the brotherly ranges from 347-358 (µm) or 0.35- 125 0.36 mm. According to Fajarwati et al. the thickness of alabio 0.01 mm. Percentage Of eggshell Weight The thickness of the brotherly is closely related to the percentage of the

weight of the broiler. The thicker it will increase the weight of the broiler. However, there is a difference between the weight of the control treatment (R0) with all treatments except R15. The highest percentage of weight gained in R0 was 10.16% and the lowest was R5 treatment (9.21%). Egg Yolk Index The Yolk Index is related to the size of the egg. Usually the larger the yolk then the weight of the egg will be greater. This yolk index is a high comparison of the yolk with the diameter of the yolk. The value of the treatment egg yolk index ranges from 36.28 to 37.47. This value is higher than the average egg yolk index in chickens which ranges from 33% – 50%. The highest yolk index is obtained in R20 treatment.

## **V. CONCLUSIONS**

Utilization of fermented fish waste on Alabio ducks is able to provide the result of ration conversion, egg shape index and thick forging that is not different from control (R0), but the treatment of fish waste to egg production (% duck day), and egg yolk index shows better results than control especially R20 treatment. The utilization of fermented fish waste can be used in alabio duck rations up to 20%, without a negative effect on the performance of alabio duck egg production. It is recommended that fermented fish waste can be used as a substitute for a protein source of animal up to 20% in Alabio ducks.

## **ACKNOWLEDGMENTS**

The study was funded by Directorate of Research and Community Service of the Ministry of Research, Technology, Republic of Indonesia.

## **CONFLICT OF INTEREST**

All the authors were declaring that they have no conflict of interest.

## **AUTHORS CONTRIBUTION**

The experimental design was achieved by Achmad Jaelani, the actual research organized by Taufikurrahman and Tintin Rostini tabularized the data and done the statistical analyses.

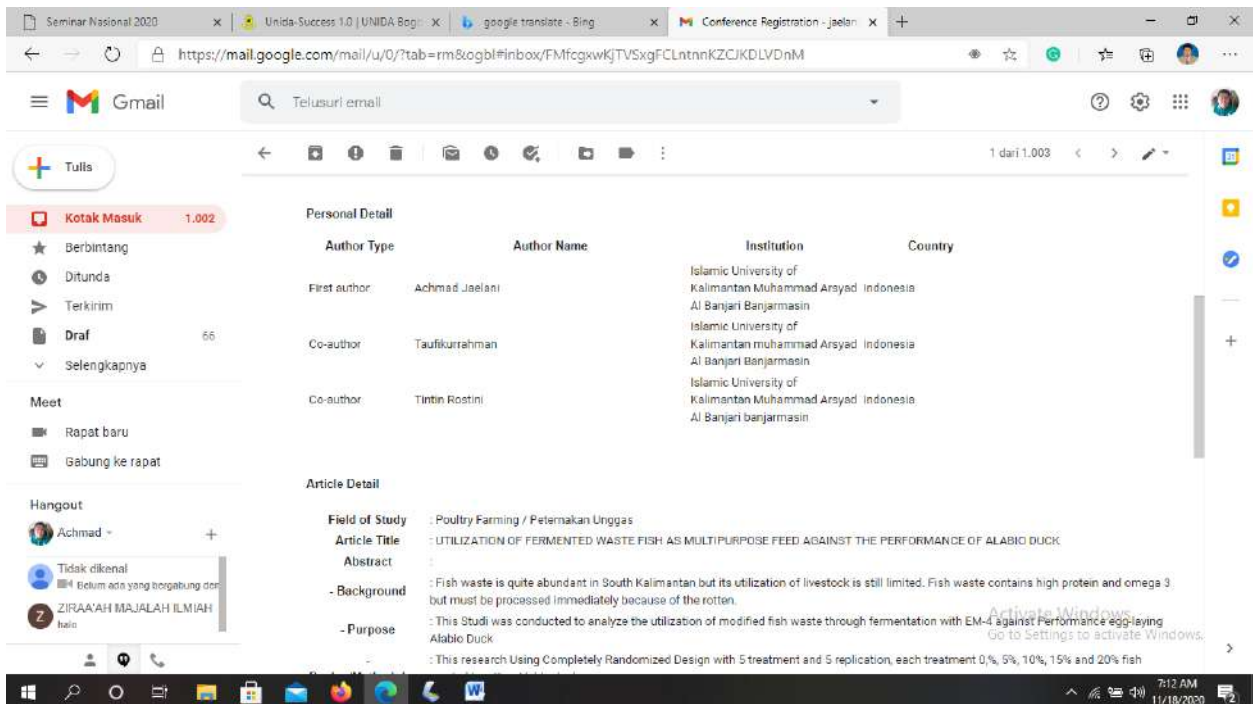
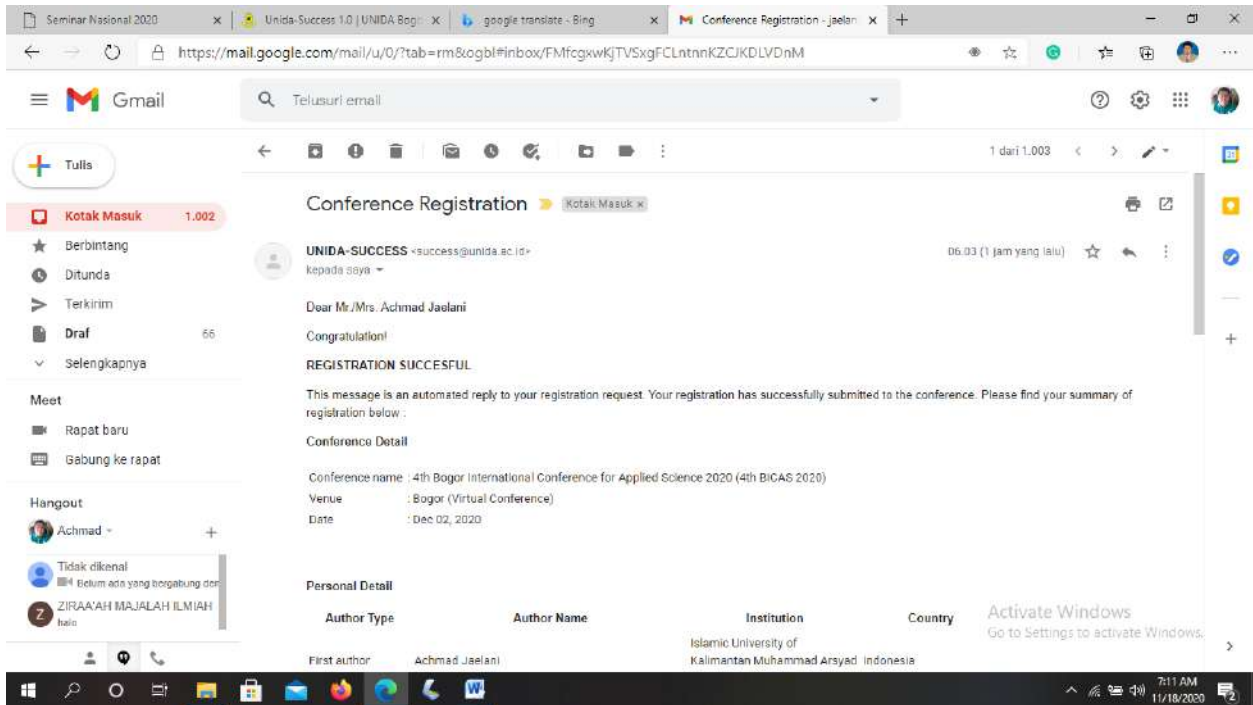
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# SUBMITT 4<sup>th</sup> BOGOR INTERNATIONAL CONFERENCE (BICAS 2020)



The screenshot shows a Gmail interface with a table of author details and article information. The table lists authors and their affiliations:

Author Type	Author Name	Institution	Country
First author	Achmad Jaelani	Islamic University of Kalimantan Muhammad Arsyad Al Banjari Banjarmasin	Indonesia
Co-author	Taufikurrahman	Islamic University of Kalimantan Muhammad Arsyad Al Banjari Banjarmasin	Indonesia
Co-author	Tintin Rostini	Islamic University of Kalimantan Muhammad Arsyad Al Banjari Banjarmasin	Indonesia

Below the table, the article details are provided:

- Field of Study**: Poultry Farming / Peternakan Unggas
- Article Title**: UTILIZATION OF FERMENTED WASTE FISH AS MULTIPURPOSE FEED AGAINST THE PERFORMANCE OF ALABIO DUCK
- Abstract**: Fish waste is quite abundant in South Kalimantan but its utilization of livestock is still limited. Fish waste contains high protein and omega 3 but must be processed immediately because of the rotten.
- Background**: This Studi was conducted to analyze the utilization of modified fish waste through fermentation with EM-4 against Performance egg-laying Alabio Duck
- Purpose**: This research Using Completely Randomized Design with 5 treatment and 5 replication, each treatment 0%, 5%, 10%, 15% and 20% fish

The screenshot shows a Gmail interface with a confirmation email from UNIDA-SUCCESS. The email content is as follows:

Registration Fee: USD 50.00

Now, your submission will be processed to the next stage. To see your registration progress, please log in to your account through link below:  
<https://www.unida.ac.id/success/>

Thank you for your participation.

Best regards,

UNIDA-SUCCESS

At the bottom of the email, there are two buttons: "Balas" and "Teruskan".

Url : <https://unida.ac.id/success/conference>

UNIDA-SUCCESS

Achmad Jaelani

Conference registration

Show 10 entries

Search:

Number	Conference name	Venue	City	Country	Date	Action
1	4th Bogor International Conference for Applied Science 2020 (4th BICAS 2020)	Virtual Conference	Bogor	Indonesia	Dec 02, 2020	Detail

Showing 1 to 1 of 1 entries

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## LETTER OF ACCEPTANCE

UNIDA-SUCCESS, Your letter of Acceptance

UNIDA-SUCCESS <success@unida.ac.id>

13.25 (9 jam yang lalu)

Inggris Indonesia Terjemahkan pesan Nonaktifkan untuk Inggris

Dear Achmad Jaelani

We are pleased to inform you that, due to the blinded peer reviews of BICSS/BICAS 2020 Committee, your paper:

Title: UTILIZATION OF FERMENTED WASTE FISH AS MULTIPURPOSE FEED AGAINST THE PERFORMANCE OF ALABIO DUCK

Was accepted to 4th Bogor International Conference for Applied Science 2020 (4th BICAS 2020)

The Scientific Committee takes great pleasure in inviting you to take an active part in this conference.

Now, your submission will be processed to the next stage. To see your registration progress, please log in to your account through link below:

<https://www.unida.ac.id/success/>

Thank you for your participation.

Best regards,

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Gmail

Tulis

**Kotak Masuk** 978

- Berbintang
- Ditunda
- Ter kirim
- Draf 66
- Selengkapnya

Meet

- Rapat baru
- Gabung ke rapat

Hangout

- Achmad -
- Tidak dikenal
- ZIRAAAH MAJALAH ILMIAH

Best regards,

UNIDA-SUCCESS

jaelaniborneo@gmail.com <jaelaniborneo@gmail.com> 22.07 (1 jam yang lalu)

Dikirim dari Yahoo Mail di Android

— Pesan yang diteruskan —  
 Dari: "UNIDA-SUCCESS" <success@unida.ac.id>  
 Kepada: "jaelaniborneo@gmail.com" <jaelaniborneo@gmail.com>  
 Cc:  
 Terkirim: Rab, 18 Nov 2020 pada 2:25 PM  
 Judul: UNIDA-SUCCESS, Your letter of Acceptance

Activate Windows  
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11:14 PM 11/18/2020

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https://unida.ac.id/success/conference/\_detail/ThP@MQnzOvodgRGfnUXGINxY3oQBWJLASaWUbn8J9kM

UNIDA-SUCCESS Achmad Jaelani

Achmad Jaelani

- Online
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- Conference
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Registration status

4th Bogor International Conference for Applied Science 2020 (4th BICAS 2020)  
Virtual Conference, Bogor, Indonesia

Registration Upload File Review Results Payment Publication

Summary Registration: Next

Field of study: Poultry Farming / Peternakan Unggas

Article title: UTILIZATION OF FERMENTED WASTE FISH AS MULTIPURPOSE FEED AGAINST THE PERFORMANCE OF ALABIO DUCK

Author: Taufikurrahman, Achmad Jaelani, Timin Roslini

Abstract:

**Background:**  
Fish waste is quite abundant in South Kalimantan but its utilization of livestock is still limited. Fish waste contains high protein and omega 3 but must be processed immediately because of the rotten.

**Purpose:**  
This Studi was conducted to analyze the utilization of modified fish waste through fermentation with EM-4 against Performance egg-laying Alabio Duck.

**Design/methodology/approach:**  
This research Using Completely Randomized Design with 5 treatment and 5 replication, each treatment 0%, 5%, 10%, 15% and 20% fish wasted in raiton Alabio duck

Activate Windows  
Go to Settings to activate Windows.

11:18 PM 11/18/2020



https://unida.ac.id/success/conference/\_detail/ThP@MQnzOvodgRGfnUXGINxY3oQBWJLASaWUbn8J9kM

**Author:** Taufikurrahman, Achmad Jaelani, Tintin Rastini

**Abstract:**

**Background:** Fish waste is quite abundant in South Kalimantan but its utilization of livestock is still limited. Fish waste contains high protein and omega 3 but must be processed immediately because of the rotten.

**Purpose:** This studi was conducted to analyze the utilization of modified fish waste through fermentation with EM-4 against Performance egg-laying Alabio Duck

**Design/methodology/approach:** This research Using Completely Randomized Design with 5 treatment and 5 replication, each treatment 0%, 5%, 10%, 15% and 20% fish wasted in rasion Alabio duck

**Findings:** The Result showed that the utilization of fermented fish waste has a positive influence on the increased production of Alabio duck egg (% duck day), exterior and Interior quality duck egg. The use of fermented fish wastes up to 15% of the ration, providing the best result against the performance of production and Interior quality of Alabio duck egg

**Research limitations:** This research should be using conducted within longer production periods and a greater number of ducks

**Originality/value:** the originality of this study is to obtain product and fermentation process of local fish waste that is able to increase the production and quality of Alabio duck eggs

**Keywords:** Fermented, fish waste, alabio duck egg

**Presenter:** Achmad Jaelani

[Edit registration](#)

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Virtual Conference, Bogor, Indonesia

Registration Upload File Review Results Payment Publication

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Review results:

Reviewer

Date

No	Article review	Notes
1	Manfaat Penelitian / Scientific Impact <i>Assesment:</i>	
2	Kebaruan / Novelty <i>Assesment:</i>	
3	Analisis & Sintesis / Analysis & Synthesis <i>Assesment:</i>	
4	Kesimpulan / Conclusion <i>Assesment:</i>	
5	Rujukan / References <i>Assesment:</i>	
6	Rekomendasi / Recommendation	

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Browser tabs: New tab, (374) Air Supply, Lobo..., (423 unread) - ach\_jae..., Achmad Jaelani\_Certif..., UNIDA-SUCCESS, Your..., Unida-Success 1.0 | UN...

URL: [https://unida.ac.id/success/conference/\\_detail/ThP@MQnzOvodgRGfnUXGINxY3oQBWJLASaWUbn8J9kM](https://unida.ac.id/success/conference/_detail/ThP@MQnzOvodgRGfnUXGINxY3oQBWJLASaWUbn8J9kM)

Navigation: Sign Out, Dashboard, Activity, Conference, Download Template

Progress: Registration, Upload File, Review Results, **Payment**, Publication

Payment Details:

- Type member: Faculty Members / Professionals
- Registration Fee: USD 50
- Bank Name: Bank Syarifah Mandiri
- Account Number: 722 211 322 3
- Account Name: Universitas Djuanda DKHLN
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Kurs USD : Rp. 14.090,00

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URL: [https://unida.ac.id/success/conference/\\_detail/Q0rVcJnNiiOKKFYDayV6yfAmdsCyPtizELwSpeNDq0g](https://unida.ac.id/success/conference/_detail/Q0rVcJnNiiOKKFYDayV6yfAmdsCyPtizELwSpeNDq0g)

Navigation: Dashboard, Activity, Conference, Download Template

Progress: Registration, Upload File, Review Results, **Payment**, Publication

Payment Details:

- Type member: Virtual Conference
- Registration Fee: USD 50
- Bank Name: Bank Syarifah Mandiri
- Account Number: 722 211 322 3
- Account Name: Universitas Djuanda DKHLN
- Swift Code: BSMIDID3A

Upload payment proof: 

Kurs USD : Rp. 14.185,00

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System tray: 2:54 PM 11/20/2020



**4<sup>th</sup> BICAS 2020 & 4<sup>th</sup> BICSS 2020**

The 4<sup>th</sup> Bogor International Conference for Applied Science 2020

The 4<sup>th</sup> Bogor International Conference for Social Science 2020

email: [bicas2020@unida.ac.id](mailto:bicas2020@unida.ac.id) / [bicss2020@unida.ac.id](mailto:bicss2020@unida.ac.id)

Jl. Tol Ciawi, No. 1, Bogor, West Java-Indonesia, +62251 8240773

Number : 16/BICAS-BICSS20/X/2020  
Attachment : Conference Program  
Sub : **Announcement of the 4<sup>th</sup> BICAS and 4<sup>th</sup> BICSS Program**

To,  
**All Participant**

Dear all participants of the 4<sup>th</sup> BICAS & 4<sup>th</sup> BICSS 2020. Thank you for being part of the conference and willing to share your valuable findings of research in the conference.

According to the 4<sup>th</sup> Bogor International Conference for Applied Science (**4<sup>th</sup> BICAS 2020**) and the 4<sup>th</sup> Bogor International Conference for Social Science (**4<sup>th</sup> BICSS 2020**) schedule arrangement, we would like to announce the conference program as attached below. Through this letter, we would also like to invite the appointed participant as the session chair during the parallel sessions. The link zoom to access the conference session is as follows:

We are excited and honored to see you soon in the conference. We are looking forward to seeing you there during the conference session.

Sincerely,

Bogor, November 28<sup>th</sup> 2020

**Prof. Ir. Mohamad Ali Fulazzaky, CES, DEA, PhD.**  
Conference Chair

---



## CONFERENCE RUNDOWN

### THE 4<sup>TH</sup> BOGOR INTERNATIONAL CONFERENCE FOR APPLIED SCIENCE 2020

*"Facing the World Challenges through Exploring the Beneficial of Science and Technology for the Future"*

&

### THE 4<sup>TH</sup> BOGOR INTERNATIONAL CONFERENCE FOR SOCIAL SCIENCE 2020

*"Discovering the Social Empowerment Strategy as the Global Scientists Contribution to the World Security and Sustainability"*

December, 2<sup>nd</sup> 2020

TIME (JAKARTA)	ACTIVITY
<b>OPENING CEREMONY</b>	
07.30-08.00	Registration
08.00-08.05	Opening by MC
08.05-08.10	Reciting The Holy Qur'an
08.10-08.15	The National Anthem, Indonesia Raya
08.15-08.20	The Universiats Djuanda Hymne
08.20-08.30	Wecoming and Opening Remarks by The CHAIR CONFERENCE OF 4 <sup>TH</sup> BICAS AND 4 <sup>TH</sup> BICSS 2020 <i>By: Prof. Mohamad Ali Fulazzaky.</i>
08.30-08.35	Prayer <i>By: Radif Khotamir Rusli, M.Ed.</i>
<b>4<sup>TH</sup> BICAS - KEYNOTE SPEAKER SESSION</b>	
Moderator: Arti Yusdiarti, SP., MM	
08.35-08.50	Assoc. Prof. Dr. Ir. Dede Kardaya, M.Si <i>Rector of Universitas Djuanda, Indonesia</i>
08.50-09.05	Dr. Marco Tieman <i>Professor at Help University, CEO LBB International, Malaysia</i>
09.05-09.20	Dr. Chey Chan Oeurn <i>Vice Dean of Science, Royal University of Phnom Penh, Cambodia</i>
09.20-09.35	Assoc. Prof. Dr. Winai Dahlan <i>Halal Science Center, Chulalongkorn University, Thailand</i>
09.35-10.00	Q&A Session
<b>THE CLOSING OF 4<sup>TH</sup> BICAS - KEYNOTE SPEAKER SESSION</b>	
10.00-10.10	Awarding Certificate for Keynote Speakers
<b>4<sup>TH</sup> BICSS - KEYNOTE SPEAKER SESSION</b>	
Moderator: Arti Yusdiarti, SP., MM	
10.10-10.25	Assoc. Prof. Dr. H. Martin Roestamy, SH., MH <i>Chancellor Universitas Djuanda Bogor, Indonesia</i>
10.25-10.40	Assoc. Prof. Dr. Novel Lyndon <i>Professor in Educational Technology, Universiti Kebangsaan Malaysia</i>

10.40-10.55	Assoc. Prof. Dr. Guido Benny <i>Programme Director, Bachelor of Social Science with Honours (International Relations), Taylor's University, Malaysia</i>
10.55-11.10	Assoc. Prof. Dr. Lubna Zaheer <i>Institute of Communication Studies, University of Punjab, Lahore, Pakistan</i>
11.10-11.25	Dr. Sok Soth <i>Dean of Faculty of Education, Royal University of Phnom Penh, Cambodia</i>
11.25-11.40	Q&A Session
<b>THE CLOSING OF 4<sup>TH</sup> BICSS - KEYNOTE SPEAKER SESSION</b>	
11.40-11.45	Awarding Certificate for Keynote Speakers
11.45-11.50	Virtual Photo Session
11.50-12.45	<b>Break Session</b>
<b>PARALEL SESSION</b>	
12.45-13.00	Breakout Room for Paralel Session
13.00-15.00	Paralel Session

## 4th Bogor International Conference for Applied Science 2020 (4th BICAS 2020)

**Room:** 7  
**FoS:** Agriculture & Other Farming Studies  
**Session Chair:** Dr. Dede Kardaya  
**IT Support:** Saepul Anwar, S.Ak

No	Registration Number	Article Title	Field Study	Member	Presenter	Email	Institution
1	BICAS001	Evaluation of chili production on the concentration of banana growth controls Author: Oktavianus Lumban Tobing, Yanyan Mulyaningsih	Agriculture and Other Plantation Science / Pertanian dan Ilmu Perkebunan Lainnya	Faculty Members / Professionals	Oktavianus Lumban Tobing	oktavianus@unida.ac.id	Universitas Djuanda
2	BICAS002	Market Performance of Indigenous Basil (Ocimum basilicum L.) Vegetables in Kadudampit District, Sukabumi Regency Author: Wini Nahraeni, Arifah Rahayu, Arti Yoesdiarty, Iis Apriani Kulsum	Agriculture and Other Plantation Science / Pertanian dan Ilmu Perkebunan Lainnya	Faculty Members / Professionals	Wini Nahraeni	wini.nahraeni@unida.ac.id	Universitas Djuanda
3	BICAS003	Growth, Production, and Quality of Katuk (Sauropus androgynus (L.) Merr.) Accessions on Various Nitrogen Organic Fertilizer Author: Arifah Rahayu, Nur Rochman, Wini Nahraeni, Lathifah Nuraeni	Agriculture and Other Plantation Science / Pertanian dan Ilmu Perkebunan Lainnya	Faculty Members / Professionals	Arifah Rahayu	arifah.rahayu@unida.ac.id	Universitas Djuanda
4	BICAS004	CONTRIBUTION OF RIPARIAN VEGETATION TO WATER QUALITY IN SPRING WATER ORAS, SOBA VILLAGE, KECAMATAN AMARASI BARAT, KUPANG DISTRICT Author: Yulita Iryani Mamulak, Chatarina Gradict Semiun	Botanical Sciences / Ilmu Botani	Faculty Members / Professionals	Yulita Iryani Mamulak	yulitairyani@yahoo.co.id	Universitas Katolik Widya Mandira
5	BICAS020	Flushing Diet Supplementation Affects Apparent Nutrient Digestibility of Postweaning Pasundan Calves under Extensive Grazing Author: Dede Kardaya, Elis Dihansih, Deden Sudrajat	Livestock, dairy farming and small / Peternakan, peternakan sapi perah dan kecil	Faculty Members / Professionals	Dede Kardaya	dede.kardaya@unida.ac.id	universitas djuanda
6	BICAS021	Chemical characteristics of Goat Milk Kefir Added with Moringa oleifera Leaf Powder Author: Srie Rezeki Nur Endah, Putri Dian Wulansari	Livestock, dairy farming and small / Peternakan, peternakan sapi perah dan kecil	Attendee	Srie Rezeki Nur Endah	callmeuput@gmail.com	Universitas Perjuangan Tasikmalaya
7	BICAS028	MEAT SENSORY QUALITY OF FEMALE ALABIO DUCKS FED COMMERCIAL RATIONS SUPPLEMENTED WITH MANGOSTEEN (Garcinia mangostana L) PERICARP MEAL Author: Anggraeni, Ristika Handarini, Visya Mudyana Khoiriyah	Poultry Farming / Peternakan Unggas	Faculty Members / Professionals	Anggraeni	anggraeni@unida.ac.id	Universitas Djuanda
8	BICAS029	Performance of Male and Female Local Grower Ducks Fed Fermented Non-Conventional Rations Supplemented with Asam Gelugur Leaf Meal Author: Dewi Wahyuni, Burhanudin Malik, Elis Dihansih	Poultry Farming / Peternakan Unggas	Faculty Members / Professionals	Dewi Wahyuni	dewi.wahyuni@unida.ac.id	universitas djuanda
9	BICAS030	Effects of the Inclusion of Papaya (Carica Papaya L) Leaf Meal in Rations on the Productivity of Quail (Coturnix-coturnix japonica) Layers. Author: Rahma Fatimah Zahra, Deden Sudrajat, Dewi Wahyuni	Poultry Farming / Peternakan Unggas	Faculty Members / Professionals	Dr. Ir. Deden Sudrajat, M.Si	deden.sudrajat@unida.ac.id	Universitas Djuanda Bogor
10	BICAS031	UTILIZATION OF FERMENTED FISH WASTE AS MULTIPURPOSE FEED AGAINST THE PERFORMANCE OF ALABIO DUCK Author: Taufikurrahman, Achmad Jaelani, Tintin Rostini	Poultry Farming / Peternakan Unggas	Virtual Conference	Achmad Jaelani	jaelaniborneo@gmail.com	Universitas Islam Kalimantan Muhammad Arsyad Al Banjari Banjarmasin
11	BICAS032	Sensory Evaluation of Meat of Spent Ducks In Fed Nonconventional Ration with Garcinia Atroviridis Leaf Author: Elis Dihansih	Poultry Farming / Peternakan Unggas	Virtual Conference	Elis Dihansih	elis.dihansih@unida.ac.id	Universitas Djuanda
12	BICAS033	The Meat Composition of Spent Duck with Garcinia Atroviridis Leaf Flour in the Nonconventional Ration Fed Author: Nadzira Nurifazria, Elis Dihansih, Dede Kardaya	Poultry Farming / Peternakan Unggas	Virtual Conference	Nadzira Nurifazria	elis.dihansih@unida.ac.id	Universitas Djuanda

# CERTIFICATE



THIS CERTIFICATE IS PROUDLY PRESENTED TO

## Achmad Jaelani

Title: " Utilization of Fermented Fish Waste as Multipurpose Feed Against The Performance Of Alabio Ducks "

Authors: Taufikurrahman, Achmad Jaelani, Tintin Rostini ,



as **BEST PRESENTER**

in The 4<sup>th</sup> Bogor International Conference for Applied Science 2020,  
"Facing The World Challenges through Exploring the Beneficial Science  
and Technology for the Future".  
Conducted Virtually on December 2<sup>nd</sup>, 2020.

Chairman,



Prof. Mohamad Ali Fulazzaky, Ph. D  
Scopus H-Index 16, WoS-Index 15

Rector of Djuanda University,



Assoc. Prof. Dr. Ir. Dede Kardaya, M.Si  
NIP: 196107241989031001

Organized by:



Joint-Host: