Introduction of Technology in Support to Duck Farming in The Tuutu Village of West Tondano District Regency of Minahasa Province of North Sulawesi Indonesia

by Lydia Kalangi 7

Submission date: 21-Sep-2022 04:38AM (UTC+0700)
Submission ID: 1904837729
File name: District_Minahasa_Regency_North_Sulawesi_Province,_Indonesia.pdf (1.58M)
Word count: 5497
Character count: 30073

ISBN 978-602-96530-6-9

FACULTY OF ANIMAL SCIENCE
BOGOR AGRICULTURAL UNIVERSITY

isai 4th
International Seminar on Animal Industry 2018

THE FOURTH INTERNATIONAL SEMINAR ON ANIMAL INDUSTRY

"Harmonizing Livestock Industry Development, Animal Welfare, Environmental and Human Health"

August, 28-30 2018
IPB International Convention Center, Bogor-Indonesia

PROCEEDING

Organized by: **Supported by:**

ISBN 978-602-96530-6-9

FACULTY OF ANIMAL SCIENCE
BOGOR AGRICULTURAL UNIVERSITY

isai 4th
International Seminar on Animal Industry 2018

THE FOURTH INTERNATIONAL SEMINAR ON ANIMAL INDUSTRY

"Harmonizing Livestock Industry Development, Animal Welfare, Environmental and Human Health"

August, 28-30 2018
IPB International Convention Center, Bogor-Indonesia

PROCEEDING

Organized by:

Supported by:

FLPI
MSM MAASTRICHT SCHOOL OF MANAGEMENT
WAGENINGEN UR
iuffic
aeres groep

EDITORS

SCIENTIFIC EDITORS

Chief :

Dr. Ir. Asep Sudarman, M.Rur.Sc. (Indonesia)

Member :

1. Prof. Junichi Takahashi (Japan)
2. Prof. Wayne Pitchford (Australia)
3. Ir. M.W. (Marcel) Ludema, PhD (The Netherlands)
4. Dr. Andrzej Łozicki (Poland)
5. Dr. Despal, S.Pt., M.Sc.Agr. (Indonesia)

TECHNICAL EDITORS

1. Dr. Nur Rohmah Kumalasari, S.Pt.,M.Sc.
2. Rika Zahera, S.Pt., M.Si.
3. Reikha Rahmasari, S.Pt, M.si.
4. Tera Fit Rayani, S.Pt, M.Si.

REVIEWERS

1. Dr. Ir. Asep Sudarman, M.Rur.Sc.
2. Dr. Ir. Rudy Priyanto
3. Prof.Dr.Ir. Ronny Rachman Noor, M.Rur.Sc
4. Dr. Irma Isnafia Arief, S.Pt, M.Si
5. Dr. Tuti Suryati, S.Pt, M.Si
6. Prof. Dr.Ir. Wasmen Manalu, MSc
7. Dr. Ir. Rita Mutia, M.Si.
8. Prof Panca Dewi Manuhara Karti
9. Dr. Sri Suharti, S.Pt, M.Si
10. Dr.Ir. Muhammad Ridla, M.Agr
11. Prof.Dr.Ir. Dewi Apri Astuti, MS.
12. Ir. Anita Sardiana, M.Rur.Sc
13. Prof. Dr. Ir. Sumiati, M.Sc
14. Dr. Epi Taufik, S.Pt., MVPH, MSi.
15. Prof. Drh. Arief Boediono, PhD
16. Dr. Anuraga Jayanegara, S.Pt, M.Sc
17. Dr. Ir. Heri Ahmad Sukria, M.Sc
18. Dr. Rudi Afnan, S.Pt., MSc.Agr
19. Prof. Dr. Ir. Komang G.W.
20. Prof. Dr. Ir. Cece Sumantri, M.Agr.Sc
21. Dr. Desl, S.Pt. M.Sc.Agr
22. Dr.agr. Asep Gunawan, S.Pt., M.Sc
23. Dr. Ir. Lucia Cyrilla Eko Nugrohowati SD, M.Si
24. Prof. Dr. Ir. Asnath M Fuah, MS
25. Dr. Ir. Moh. Yamin, M.Agr.Sc.
26. Dr. Nur Rohmah Kumalasari, S.Pt.,M.Sc.

Harmonizing Livestock Industry Development, Animal Welfare, Environmental and Human Health. Proceeding Full Papers of the 4th ISAI (International Seminar on Animal Industry) held at IPB International Convention Centre, Bogor, 28 – 30 August 2018

Created by
Faculty of Animal Science, Bogor Agricultural University (FAS-IPB)
Jl. Agatis Kampus IPB Darmaga
16680 Bogor, Indonesia

FIRST DAY
POSTER SESSION I

Tuesday, August 28, 2018
Time: 13.10-13.35

No ID	Author(s)	Titles
18014	Retno Widyani; Muh Hisyam Hermawan	In Vitro Studies : Potensial of Dyospiros Kaky as an Agent of Anti Cholesterol to Decrease Stroke Case
18016	Helmy Metawi	Small Ruminants Production Performance under Different Water Availability in Egypt
18031	Erina Erina; M. Aman Yaman; Vinky Claudya Fransiska; Kamiliyatul Fadhilah	Ratio of Bursa Fabricius Weight and Final Body Weight, Thymus Regression Time on Alpu Chicken
18039	Fuad Hasan; Hamdan	Inbreeding of Murrah Buffalo in Tanjung Garbus Village, Deli Serdang Distric, North Sumatera Province
18042	Zakiah Wulandari; Laila Wahyuni; Neny Polii	Nutritional Content and Characteristics of Protein Tortilla Corn Chips with The Addition of Egg White Powder as Protein Source
18050	Ingriet Lumenta; Lidya Kalangi; Artise Salendu; Femi Elly	Development of Duck Farming Environmentally Friendly in Regency Of Minahasa, North Sulawesi Province, Indonesia
18052	Artise H.S. Salendu; Ingriet D.R. Lumenta; Femi H. Elly; Derek Polakitan	Prospect of Environmental Beef Cattle Development in Regency of North Bolaang Mongondow, North Sulawesi Province, Indonesia
18053	Lidya Siulce Kalangi; Stanly Oktavianus Bryneer Lombogia; Sony Arthur Ely Moningkey	Empowerment for Duck Farmer Group in Tuutu Villages West Tondano District Minahasa Regency North Sulawesi Province, Indonesia
18055	Tilly F.D Lumy; Meiske L. Rundengan; Anneke K Rintjap; Richard E.M.F Osak	Role of Feed Technology in Increasing Cattle Productivity in South Minahasa Regency Of North Sulawesi, Indonesia

LIST OF CONTENTS

FULL PAPERS
PARALLEL SESSIONS
SUBTHEME: ANIMAL AGRIBUSINESS, SOCIAL ECONOMICS AND POLICY IN ANIMAL PRODUCTION

Introduction of Technology in Support to Duck Farming in The Tuutu Village of West Tondano District Regency of Minahasa Province of North Sulawesi Indonesia

Stanly O.B. Lombogia, Lidya S. Kalangi, Sony A.E. Moningkey, Jeane Pandey

Faculty of Animal Husbandry, University of Sam Ratulangi, Manado, North Sulawesi, Indonesia
lombogiastanly@yahoo.co.id

Abstract

Duck is one of the livestock developed and is a source of income farmers Tuutu village. The problem is how far the benefits received by the farmers and whether the introduction of the technology responded well. This research has been conducted with the aim to identify problems of duck farming and business profits for empowerment activities through the introduction of technology. This research has been done by using survey method and case study approach. Determination of sample location has been done by purposive sampling. Respondents have been determined based on the farmers who are members of the group. Data analysis conducted is descriptive analysis and RC ratio. The results showed that duck farming was developed in paddy fields. Feed consumption is rice waste after harvesting, this is because feed prices tend to increase. In addition, expensive duck breeds cause duck farming is not continuous. Based on the results of this study, it can be concluded that duck farming is feasible to be developed from RC ratio and introduction of technology responded well by group members.

Keywords: duck, introduction, technology

Introduction

Duck is one of the livestock developed and is a source of income farmers' breeders in Tuutu Village. Duck is a poultry producer of eggs and meat so that is quite potential. Wahyono and Daroini (2013), saying that breeding duck has a business process that is potential to be developed and marketed, both as a profitable business and as a side business, so it is very helpful in increasing the income and living standards of farmers.

Investment opportunities in ducks attracted people, especially in Tuutu Village, because the location of the area adjacent to the paddy's fields and Tondano Lake. This is a support in duck breeding business because of easily to get food and water. Tuutu Village is a part of West Tondano District, Minahasa Regency of North Sulawesi Province, with total area of 3,158 km2 and livestock farmers' livelihoods reach 41% (Central Bureau of Statistics, 2017). This is indicated by the increasing number of duck livestock farms. Whilst the duck meat industry is quite small in comparison to chicken meat production, it is expanding rapidly at a growth rate of 10-15% annually (Stein, 2010). However, despite its potential prospect, duck

business also requires a high cost for each period of production. Feed cost has the largest component of total maintenance cost. Because the investment cost is relatively high then the level of profit from the duck business needs to be studied, so it is reasonable whether or not this business to run. The problem is how far the benefits received by farmers and whether the introduction of technology responded well. This research has been done with the aim identify problems of duck farming and business benefits for empowerment activities through the introduction of technology.

Methods

The research materials were ducks, feed, cage, hatching machine. The duck in this study belongs to members of the farmers group. This research has been conducted, using survey method and case study approach. Determination of sample location done by purposive sampling. Research location in Tuutu Village, West Tondano Sub-district, Minahasa District, North Sulawesi Province, with consideration of duck breeders farmers have breeder groups. Number of breeders who are members of the group as many as 32 people and ready to be empowered through the introduction of technology. Data analysis used is descriptive analysis and RC ratio analysis. RC ratio analysis is used by to see the feasibility of duck business.

Results and Discussion

Farmers in Tuutu village cultivate rice crops and also develop ducks. According to Polakitan et al (2011), duck livestock became the foundation of life of some people who live in wet agroecosystem (paddy field, coastal lake and watershed). Based on the existing potential, duck livestock business can be developed integrated rice plants and agribusiness oriented (Elly, 2012).

The results showed that duck breeding in Tuutu Village is still semi intensive and grazing activiy is moving from one field to another. During the day ducks grazed in the fields to find food, but at night the ducks kept to the cage. Duck ownership by group members started from 10 to 600. This condition shows that duck business is still a sideline effort so it cannot be relied upon as the main source of income. Erlina (2013) suggested that duck business can be declared not well developed indicated from 80% of farmers have duck <500 heads. According to Satrio et al (2015) that duck business needs to be developed from traditional to advanced farms by utilizing technology. Budi et al (2015) stated that 1466 cultivated ducks produce a profit of Rp 135,000,000 per year.

The feed given to ducks in the form of finished feed (manufacturers), corn, rice bran and "renga /Snails". Unfortunately, farmers usually get renga from Tondano lake, but nowadays renga can no longer be found. Yet according to farmers renga is a very reliable feed ingredients to improve the productivity of duck eggs. Instead of "renga", farmers give yellow corn (local maize in Minahasa) but not all farmers grow yellow corn. Farmers in this case provide self-managed feeds that are concentrate, corn and bran. Corn and bran were obtained in the concentrated research area purchased at the Livestock Feed Store.

The cages used for the cultivation of ducks are very simple ie made of wire without a roof. Several of them (30% farmers) make semi-permanent ducks. A farmer develops a hatching machine for seeds (DOD). Seeds produced, in addition to the

cultivation itself amd is also sold to other farmers in need. Lack of utilization of hatching machine causing duck livestock business is discontinuous. Price of Rp 12,500 seedlings is considered expensive by farmers and difficult to obtain. Farmers' knowledge of hatchery is also low. DOD hatched by farmers only around 65% caused by the feed consumed sizes that do not fit both the quantity and quality. Duck breeder productivity can be improved through improved feed, management and breeding program (Hidayati, et al 2016).

The results of the study that the feed given to ducks in the form of feed manufacturers, corn, rice bran and "renga/snails". Farmers usually get snails from Tondano lake, but nowadays it is barely found. According to farmers renga is a very reliable feed ingredients to improve the productivity of duck eggs. Instead of snails, farmers feed yellow corn (local maize in Minahasa) to the ducks but not all farmers grow yellow corn. In this case, farmers provide self-managed feeds consisted of concentrate, corn and bran. Corn and bran were obtained in the research area purchased, while consentrate were taken at the Livestock Feed Store.

The cages used for the cultivation of ducks are very simple ie made of wire without a roof. Only 30% farmers made semi-permanent ducks cage. A farmer develops a hatching machine for getting day old ducks (DOD). DOD produced, besides for the cultivation itself also to be sold to other farmers. Lack of utilization of hatching machine is causing duck livestock business discontinuous. Price of DOD Rp 12,500 is considered expensive by farmers and difficult to obtain. Farmers' knowledge of hatchery is also low. Only 65% of DODs is hatched by farmers because the feed consumed do not fit both the quantity and quality. Duck breeder productivity can be improved through improved feed, management and breeding program (Hidayati, et al 2016).

The results showed that the duck business income was Rp 557,700,000. This revenue was obtained from the sale of rejected ducks and duck eggs. The farmer spent Rp 296,168.62. These costs consist of fixed costs and variable costs. Fixed costs are the cost of the cage and the place to eat / drink. Variable costs consist of DOD, feed, vaccine / medicine and labor costs. The R / C value of 1.88 means every Rp. 1,000 cost incurred by breeder in duck breeding business hence revenue earned equal to Rp. 1.880 / duck. Based on this value of RC ratio, the duck business in Tuutu Village is feasible to be developed. RC value of this ratio is still greater than the results of research by Lastinawati (2016) which obtained RC ratio of 1.42. This condition shows that duck business in Tuutu Village has prospect and opportunity to be developed. But duck breeders in Tuutu Village, West Tondano District have knowledge and experience of breeding for generations. The absorption of technology introduction in this case is always "wait and see", it means to wait and see the success of the applied technology, then the breeder will follow

Based on the problem, technological intuition has been done through empowerment of group members. Empowerment is a human-oriented development system by promoting the principle of participation (participatory), democracy (inclusive democratic) and justice (equity), the process of providing access (ease) so that ultimately achievable progress and independence (Hendayana, 2005). Empowerment is done through the use of hatching machines and the preparation of rations by utilizing local resources. The farmer's response to the introduction of feed

technology at the time of the research was excellent. The absorption of technology depends on the characteristics of group members. Age of group members ranges from 29 - 56 years, are categorized as productive age. Age is one factor that can affect the productivity of the livestock business. Livestock productivity is closely related to technology adoption. Farmers who are still productive will be easier in adopting technology. The education of group members also determines the absorption of introduced technology. Group education level 6.25% at elementary school, 12.5% at junior high school, and 81.25% at senior high school. The low level of education affects the productivity of the duck business. Moreover, an increased level of education can allow a person to change his attitude and behavior to act more rationally.

Conclusions

Based on the result of this research, it can be concluded that duck business in Tuutu Village, West Tondano Sub-district of Minahasa Regency, is feasible to be developed if seen from analysis value of R / C ratio 1, greater than one. Introduction of technology responded well by duck breeder farmers in Tuutu Village.

Acknowledgment

This research was funded by PKM Dikti year 2018

References

Central Bureau of Statistics of Minahasa Distrct. West Tondano District In Figures 2017. http://minahasakab.bps.go.id

Budi, E.S., E. Yektiningsih and E. Priyanto. 2015. Profitability of Duck Breeding Business in Kebonsari Village, Candi District, Sidoarjo. Journal of Agriculture. Vol 1 No. 1 Jan 2015: 33-37.

Elly, F.H., A.H.S. Salendu and D. Polakitan. 2012. Analysis of the production function of duck livestock business in Talikuran village in supporting the consumption of animal protein based on agribusiness. Proceedings of National Seminar Faculty of Soedirman University Purwokerto, Date June 9, 2012.

Erlina, S. 2013. Linkage of Agribusiness Subsector of Alabio Ducks in Hulu Sungai Utara Regency of South Kalimantan Province. IJAS. Vol 3 No. 3 Edition Dec 2013: 73-77.

Hendayana, R. 2005. Farmer Farmers Empowerment Toward Independence through Wahana Agribusiness Joint Business Group (Case on Duck Livestock Business in West Lombok NTB). Met. Pet. Vol.24 No. 1.

Hidayati, N.H., E.Y.W. Yuniwarti and S. Isdadiyanto. 2016. Comparison of Quality of Magelang Duck Beef, Duck Pengging and Tegal Ducks. Bioma. Vol 18 No. 1 June 2016: 56-63.

Lastinawati, E. 2016. Break Even Point Analysis and Risk of Duck Farming Business Income in Sugih Waras Village Belitang Mulya Sub-district, East Ogan Komering Ulu Regency. Journal of Social Economic of Agriculture. Vol 5 No. 1 April 2016: 1-7.

Polakitan, D., P. Paat and L. Taulu. 2011. Duck Livestock Production System In North Sulawesi. National Technological Innovation Workshop in Supporting Poultry Breeding Farmers. Agricultural Technology Assessment Institute SULUT, Manado.

Prasetyo, L.H., P.P. Ketaren., A.R. Setioko., A. Suparyanto., E. Juwarini., T. Susanti and S. Sopiyana. 2010. Guidance and Cultivation of Ducks. Ciawi Livestock Research Center, Bogor.

Satrio, Y.W., S.I. Santoso and A. Setiadi. 2015. Analysis of Duck Livestock Business Development in Banyubiru Sub-district, Semarang Regency. Animal Agriculture Journal 4 (2): 256-259. July 2015.

Stein B., 2010. Introduction to commercial duck farming. Departemen of Primary Industries NSW Goverment

Supriyadi, M. M. 2009. Duck Complete Guide. Self-Helping Spreader, Jakarta.

Wahyono, T and A. Daroini. 2013. Duck Development Strategy for Increasing Revenue Farmers in Kediri District. Journal of Agribusiness Management, Vol 13, no 2 July 2013. P: 17-30

Introduction of Technology in Support to Duck Farming in The Tuutu Village of West Tondano District Regency of Minahasa Province of North Sulawesi Indonesia

ORIGINALITY REPORT

20%	16%	10%	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Mateja Šelih, Maja Mikulič Petkovšek, Damjan Krajnc, Rebeka Lucijana Berčič, Andreja Urbanek Krajnc. "Screening of leaf metabolites in historical mulberry trees (Morus alba L.) from different eco-geographical regions of Slovenia", Trees, 2020 Publication	2%
2	rp2u.unsyiah.ac.id Internet Source	2%
3	"Preface", IOP Conference Series: Earth and Environmental Science, 2022 Publication	1%
4	media.neliti.com Internet Source	1%
5	www.journalcra.com Internet Source	1%
6	ijeab.com Internet Source	1%

	Internet Source	1%
8	ejurnal.litbang.pertanian.go.id Internet Source	1%
9	www.proceedings.com Internet Source	1%
10	www.tandfonline.com Internet Source	<1%
11	jurnal.polinela.ac.id Internet Source	<1%
12	intipdaqu.inovasi.lipi.go.id Internet Source	<1%
13	www.neliti.com Internet Source	<1%
14	anyflip.com Internet Source	<1%
15	kzz.up.poznan.pl Internet Source	<1%
16	ojs.uho.ac.id Internet Source	<1%
17	Lidya S. Kalangi, Stanly O. B. Lombogia, Jeane Pandey. "Determining Factors of the Broiler Farmer's Profitability under the Partnership Program in Tomohon, North Sulawesi-Indonesia", E3S Web of Conferences, 2021 Publication	<1%

18	eprints.lancs.ac.uk Internet Source	<1%
19	www.scilit.net Internet Source	<1%
20	"Book of Abstracts International Conference on Agriculture, Environment, and Food Security 2017 (AEFS) 2017", IOP Conference Series: Earth and Environmental Science, 2018 Publication	<1%
21	repository.ub.ac.id Internet Source	<1%
22	repository.ugm.ac.id Internet Source	<1%
23	tiest.staff.ipb.ac.id Internet Source	<1%
24	lppm.ipb.ac.id Internet Source	<1%
25	onlinelibrary.wiley.com Internet Source	<1%
26	gerontolog.info Internet Source	<1%
27	jsss.co.id Internet Source	<1%
28	ouci.dntb.gov.ua Internet Source	<1%

29	"Proceeding of the 1st International Conference on Tropical Agriculture", Springer Science and Business Media LLC, 2017 Publication	<1%
30	123dok.com Internet Source	<1%
31	I W. Wijana, K.Warsa P, Candra Wedana, G.A.M.Kristina Dewi, I M.Fera S, N.P.M. Suartiningsih. "The Impact of Adding Dragon Fruit (Hylocereus sp.) Peel Extract to Drinking Water on the Percentage of Carcasses and Offal Organs of Free-Range Village Chickens", KnE Life Sciences, 2022 Publication	<1%
32	e378a16a-a07a-4394-9fe1-1cd9a6bc91e2.filesusr.com Internet Source	<1%
33	text-id.123dok.com Internet Source	<1%
34	fsd.unsyiah.ac.id Internet Source	<1%
35	sinta.ristekbrin.go.id Internet Source	<1%
36	onesearch.id Internet Source	<1%
37	www.scribd.com Internet Source	<1%

38	Brigita K.M Kumaat, F H Elly, E Wantasen, L S Kalangi. "ANALISIS KONSUMSI DAGING BABI OLEH MASYARAKAT PESISIR DANAU TONDANO", ZOOTEC, 2019 Publication	<1%
39	Rizki Palupi, Fitri Novaliya Lubis, Ego Syailendra. "Effect of Supplementation of Indigofera zollingeriana Top Leaf Meal in the Diets to the Slaughter Weight and Carcass of Pegagan Ducks", IOP Conference Series: Earth and Environmental Science, 2019 Publication	<1%
40	visit.ipb.ac.id Internet Source	<1%
41	zombiedoc.com Internet Source	<1%
42	ki.ipb.ac.id Internet Source	<1%

Exclude quotes	Off	Exclude matches	Off
Exclude bibliography	Off		