The Course

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- 04 FarmingWithMicrobes.pptx
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Red Talapia

Green Water Culture

Gills covered
With membrane
To digest algae

Tilapia

Green Water Culture
Tilapia
Vertical column of Phytoplankton
30cm protein
Water harvesting

Common fertilization rates used to establish a phytoplankton bloom in fish ponds.

	Low hardness	Moderate hardness	High hardness
Granular 18-46-0	4-8 kilo/hectare	8-16 kilo/hectare	16-32 kilo/hectare

Semi-intensive Fish Pond 7 years

15 m^2 X 10pcs/m^2 =150 pcs
150 Tilapia X 105 days = 300 g

Sechi disk

Pond 3 2009
April 7 55 cm
April 14 54 cm
April 21 48 cm
April 28 33 cm
1. Observe & interact
"Beauty is in the eye of the beholder"
Observe and interact - By taking time to engage with nature we can design solutions that suit our particular situation

Semi-intensive Fish Pond 7 years
Bokashi Fish Feed
Home made feed
Natural,chemical free, organic
Homemade feed Sinks

Semi-intensive Fish Pond 7 years
Protect from fish
Home grown feed
Azolla
Natural,chemical free, organic
Floating Fish Feeder

Semi-intensive Fish Pond 7 years
Natural,chemical free, organic
Nile Talapia
15 m2 X 10pcs/m2 =150 pcs
150 Tilapia X 105 days = 300 g

ECHO Asia Notes

A Regional
ECHO Dev

Edited by Abram Bicksler and Rebecca Garofano

March

Farm-Generated Feed: Fish Feed Production

by Keith Mikkelson, Executive Director, Aloha House, Puerto Princesa, Palawan, Philippines

[Editor's Note: Keith has been practicing sustainable farming at the Aloha House Orphanage in Puerto Princesa for many years in order to produce nutritionally dense, farm-derived food that is consumed both at the orphanage and by local consumers. I had the privilege of visiting Keith and his family last March at the Aloha House, where the ECHO Asia/Aloha House Sustainable Agriculture Workshop was held. I was impressed by what they are able to achieve with very few off-farm inputs in a small amount of land area. In this article, Keith will share some of the basics for creating farm-generated fish feed.]

Farm-generated fertility makes agriculture more sustainable. Crop residues and manures are part of the nutrient cycle and can lower input costs through the use of thermophilic composting, vermiculture, bokashi production, or green manures. Farm-generated feeds can also reduce expenses, if farmers manage and utilize the resources already available to them. For, example, farmers might develop pasture using planned grazing for cattle; make hog feed from crop residue and by-products (such as whey and skim milk); cultivate legume shrubs for cut-and-carry operations for goats; and grow floating ferns and other water crops for fish and poultry.

As densities of livestock increase, the industrious farmer finds ways and means to increase his farm nutrient stream for the benefit of his system. **This article will examine the methods and techniques necessary for the smallholder farmer to succeed with farm-derived fish feeds.** A farmer should first fully exploit his extensive (and more passive) existing systems, and then consider intensifying his overall operation (Figure 1).

Important: Note that many journals, papers, and guides caution against the tendency to abandon established methods of feed production for a more intensive system without first assessing and then establishing new technologies with a transition period that is well-planned, capitalized and realistic.

Overview of the Aloha System

Planning includes securing both on-farm and off-farm feed sources, in case of contingencies. "Most farmers do not maintain all the ingredients needed to prepare a complete feed on-site or the equipment to blend and pellet it. They must, therefore, have guaranteed primary and alternative market sources at all times, which is not a simple management activity," (Skillicorn *et al.*, 1993). Our experience is with the tilapia GIFT variety, Improved Excel variety, and red tilapia from the Bureau of Fisheries and Aquatic Resources in the Philippines, as well as with Japanese koi obtained from commercial breeders in the Philippines (Figure 2). In our closed-loop recirculating aquaponic systems, we also keep catfish and snakehe
tilapia net culture. T
eat the residual fe
and keeping settle
the sump (the ar
retains water befo
it), through the
beds or solids-
help control fry
wandering hat

Feed Sou

Algae Bl

For tilapia pond
free or are in cages, algae
first feed considered. Ponds with a
capacity of 3 kg of fish/ square meter can
benefit greatly from the addition of fertilizers, which can increase algal bloom and reduce the cost of inputs. Natural fertilizers are used in our system, but commercial fertilizers or purchased worm castings and composts can also be used. However, do plan to utilize farm-generated fertility before considering purchased inputs.

Fish that benefit from algae production (such as tilapia) have a mucus membrane

(top to bottom) ***Figure 1.*** *Feeding strategies for fisn, ranging from extensive to intensive.* ***Figure 2.*** *Tilapia being held by Keith Mikkelson at Aloha House.*

Featured in this AN

1 Farm-Generated Feed: Fish Feed Production

7 Producing the Biocontrol Fungi *Trichoderma* and *Beauveria*

The ECHO Asia Impact Center operates under ECHO, a non-profit Christian organization that helps you help the poor to produce food in the developing world.

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Chiang Mai 50000 Thailand
echoasia@echonet.org
www.ECHOcommunity.org

Table 3. *Basic Tilapia feed using on-farm inputs. Note, 1 USD = approximately 45 Pesos.*

Commercial Feed	Crude Protein	Cost P / 50 kg Sack						
Fermented EM Feed	32.00%	1,300.00						
Ingredient	32.31%	512.34						
Rice Bran(D1)	Crude Protein	Weight (kg)	%	Cost P/kg	Crude Protein Units	COST		P / kg
Copra Meal	14%	28.00	32.2%	14.00	3.92	392.00	P	P / kg
Fish Meal	22%	8.00	9.2%	9.00	1.76	72.00	P	
Duck Weed	72%	17.00	19.5%	25.00	12.24	425.00	P	
Az olla	44%	3.00	3.4%	0.00	1.32	0.00	P	
Salvania	44%	10.00	11.5%	0.00	4.40	0.00	P	
Moringa	22%	20.00	23.0%	0.00	4.40	0.00	P	
Livestock Lime	18%	0.30	0.3%	1.00	0.00	0.26	P	
Rock Dust Minerals	0%	0.10	0.1%	8.00	0.00	0.80	P	
Charcoal - Fine	0%	0.26	0.3%	1.00	0.00	0.26	P	
Molasses	0%	0.26	0.3%	1.00	0.00	0.26	P	
EM	3%	0.10	0.1%	8.00	0.00	0.80	P	
	1%	0.10	0.1%	8.00	0.00	0.80	P	
	Wet Weight	86.96 kg	100.0%		28.09	10.25	P / kg	
	Dry Weight	60.87 kg				14.64	P / kg	

		%
		280
		.810
		0.380
Manganese		0.044
Iron		0.052
Copper	36	0.004
Zinc	206	0.021
Vermicast	**ppm**	**%**
Nitrogen (N)	5100	0.510
Phosphate (P_2O5)	8200	0.820
Potash (K_2O)	2500	0.250
Manganese	110	0.011
Iron	678	0.068
Copper	6.1	0.001
Zinc	206	0.021
Bokashi	**ppm**	**%**
Nitrogen	7600	0.760
Phosphate (P_2O5)	5000	0.500
Potash (K_2O)	8100	0.810
Manganese	50.99	0.005
Iron	175	0.018
Copper	3.37	0.000
Zinc	28.17	0.003
Calcium	1.41	0.000
Magnesium	0.16	0.000

Intensive Nursery 10 years

Natural,chemical free, organic

Intensive Nursery 10 years

+

Semi-intensive Fish Pond 7 years

=

Intensive Nursery 10 years

+

Semi-intensive Fish Pond 7 years

=

Intensive Recirculating Aquaponic System

Record Keeping

Color:
Horns: YES
Parent

Tilapia Record and Batch ID Card

Batch No. 0702

Start Date: 9/28/07

Fry

200PCS.
₱1.00 each
₱200.00

Adult
Female

Type:

Start: Fry or Fingerling

Supplier: BFAR NARRA

SOIL: Fertilize / Lime

Weight / Feed Rate / Secci

0 days 1g Sept. 28

21 days 5.5g Oct. 19

42 days 45g Nov. 10

63 days 50g Dec. 1

84 days 80g Dec. 22

105 days Jan. 13

Sickness/Injury/ Mortality

R-01: 40pcs 2-02: 38pcs.

Sale Price:

DAILY RECORD - FERTILER AND SECCI ON BACK

Mortality No. pcs.

Consumed Wt.

Sale Wt.

SOW CARD

Starting No. pcs. 1 gilt

Mortality No. pcs.

Consumed Wt.

Sale Wt.

6½ mo BREED ~~OCTOBER~~ SEPTEMBER 28, 2007

7 mo. October 12, 2007 → HARVEST MARCH 12

Artificial Insimination ① - NOV. 17, 18, 07

② April 20, 21, 8

③rd May 13-14, 2008

K/ V.7.

XI – XV. 20, 2008

Batch No./Type 701 LR/LW

Birth Date: MARCH 9 2007

Purchase Date: MARCH 68 days

Phase out / Feed: ₱3,000.00

Record Keeping

Bees are livestock

Bees are livestock

Bees are livestock

Queen
Bees are livestock

UPLB Bee Keepers
Dr. Sting

Dr. Cleo Cervancia

Built in Habitat for Indigenous Bees
Apis Trigona

Apis Trigona
Built in Habitat for Indigenous Bees

Apis trigona

Create habitat

Solitary pollinators
Live alone

Carpenter bees
Mud wasps

Indigenous

Social insects
Live in colonies

Apis dorsota
Apis cerena
Apis trigona

Live Feed
Bulati are livestock!

"Rice is a staple crop. Pigs are prolific; also poultry. Cattle, goats and sheep were introduced from Spain."
Bancroft, Hubert Howe,
The New Pacific
New York: Bancroft Company, 1900. p.231

ORPINGTON CHICKEN BREEDS

Originally from England. This is a heavy set bird and because of its size is not flighty. They are lovely, docile chickens and therefore make excellent pets as well as a breed for the novice chicken keeper. Orpingtons lay 220 - 240 eggs a year, making it another good breed for egg layers.

Broody
Gentle
Ideal for the novice

The Standard refers to the *Standard of Perfection*, a book published by the American Poultry Association, which describes the appearance of each breed and variety — color, weight, shape, feathering, etc. If you want to show your chickens at the fair, they should conform to the Standard; the extent to which they do determines the prizes they get. A standard-bred chicken is any one which appears in the *Standard of Perfection*. (The word "standard" is sometimes used incorrectly to refer to large-sized chickens, as opposed to bantams.)

LEGHORN CHICKEN BREEDS

These are probably the best laying chickens around, besides the Rhode Island Breeds. They are prolific egg layers of white eggs. A small, spritely, noisy bird with great style, Leghorns like to move about. They are good foragers and can often glean much of their diet from ranging over fields and barnyards. Leghorns are capable of considerable flight and often roost in trees if given the opportunity.

Leghorns lay more than 300 eggs a year.

AUSTRALORP CHICKEN BREEDS

An Australian bird developed from the Orpington chicken. Black feathers with a green sheen. Can lay from as early as 5 months. Australorps lays about 300 eggs a year, so another good layer for chicken eggs.

Dual Purpose
Hardy
Good Choice for Novice Breeder

LIGHT SUSSEX CHICKEN BREEDS

The Sussex is an attractive little bird and makes a good all-round farm fowl. It is a good layer of cream eggs. 260-280 eggs per year. So not a bad egg layer.

Best Dual Purpose Bird
Good Foragers
Tend to go Broody

RHODE ISLAND RED CHICKEN BREEDS

The Rhode Island Red Chickens are prolific egg layers of medium brown eggs. Relatively hardy, they are probably the best egg layers of the dual purpose breeds. Reds handle marginal diets and poor housing conditions better than other breeds and still continue to produce eggs. 200-250 eggs a year.

Dual Purpose Bird
Hardy
Good Choice for Novice Breeders

Pastured Poultry
“Naked Neck”
SASSO

Pastured Poultry
"Sunshine"

The Hybrid Challenge

Fast Growing /
Strong bones

F1

Hybrid Pedigree

Strong bones male

Breeders

female Fast Growing

Fast Growing / Strong bones

F1

Hybrid Pedigree

Strong bones Female
Strong bones Male
Parent Stocks
Fast Growing Female
Fast Growing Male
Strong bones
male
Breeders
female
Fast Growing
Fast Growing / Strong bones
F1
Hybrid Pedigree

The Hybrid Challenge

Fast Growing /
Strong bones

F1 X F1 = F2

Hybrid Pedigree

F2 F2 F2 F2 F2 F2 F2 F2 F2 F2 F2

D - 102
LEGHORN
RHODE ISLAND RED
♂
PARENTS
♀
HYBRID

D - 192
LIGHT SUSSEX
RHODE ISLAND RED
♂
PARENTS
♀
HYBRID

D - 109
AUSTRALORP
RHODE ISLAND RED
♂
PARENTS
♀
HYBRID

D - 107
AUSTRALORP
LEGHORN
♂
PARENTS
♀
HYBRID

FARMERS' CHOICE FREE RANGE DAY OLD CHICKS— Refers to the products' name of Happy Farmers' Poultry Enterprise High quality day old chicks produced by GRIMAUD FRÈRES Parent stocks Imported from Roussay, France. These breeders are located in 3 Breeder stations in Luzon

GRIMAUD FRÈRES – The genetic supplier from Roussay, France that supplies the Parent stock Breeders of colored chicken. The company also supply Pekin ducks, Geese, Hybrid Rabbits, Guniea Fowl and Hybrid pigeons worldwide. GRIMAUD Company also owns HUBBARD international.

Pastured Poultry

Rotational Grazing 100 birds

1-14 days Brooder only
15-28 days Brooder/Pasture
29-52 days Pasture A
53-70 days Pasture B

CLASSIFICATION: SLOW GROW FREE RANGE

- Slow growing system with 30% high density feeds and 70% low density feeds and legumes
- Expected average live weight of 1.5 kilos at 70 days!
- **Housing 14 m^2 per 100**
- **Range 100 m^2 per 100**

114 m^2 per 100

© HAPPY FARMERS' ®
CHOICE FREE RANGE
MEAT CHICKEN

COMMERCIAL FEEDS

AG	AV. WEI	FEEDS/DAY/BIRD	EST R
7 s	125 GRAM	26 GRAMS	1
14 s	250 GRAMS	8 GRAMS	0.
21 s	425 GRAMS	AMS	1
28 d	550 GRAMS	47 G S	
35 da	750 GRAMS	62 GRAM	24
42 days	010 GRAMS	70 GRAMS	1.52
49 days	1 RAMS	83 GRAM	1.88
56 days	1650 GR	MS	2.20

ALOHA NATURAL FEEDS ™

70 days 1500 GRAMS

Vaccination / Health supplement program

AGE	PARTICULARS
1	Bamboo leaves and Brown rice supplement
2-6	Banana and watermelon supplement
7	NCD B1-B1 strain thru eyedrop - Please refer to proper vaccination method
8-10	Herbal 1 water supplement
11-14	Plain water
15-17	Plain water
18-20	Herbal 1 water supplement
21-23	Plain water
24-27	Herbal 2 water medication supplement
28	NCD LA SOTA MEDICATION THRU WATER – Please refer to proper vaccination method
29-31	Plain water
32-38	Plain water
39-42	Herbal / Vegetable feed additive
43-46	Herbal / Vegetable feed additive
47-50	Herbal / Vegetable feed additive
52-55	Herbal / Vegetable feed and water additive
56-60	Herbal / Vegetable feed and water additive

3% mortality w/ New Castle vaccinte

Batch 1 Bird Cost

Labor P/hr	hrs	labor total	birds	feed cost	feed total	Chicks	cost	chicks total	total bird cost
30	90	2,700	80	60	4,800	100	45	4,500	12,000

Cleaning / packaging Cost

# people on line	hrs	rate	labor total	Whiz/ gas/ bird	birds	Whiz/ gas total	Cleaining cost total	TOTAL COST
8.0	5.3	30	1,260	11	70	770	2,030	14,030

INCOME

AVG. Dressed Kilos	# bird s	total weight	price	Total Income	Amortiz ation	Net INCOME	Profit/bird in PESO	
1.6	70	109	195	21,158	1,500	5,628	56	40.11%

Batch 2 Bird Cost

Labor P/hr	hrs	labor total	birds	feed cost	feed total	Chicks	cost	chicks total	total bird cost
30	70	2,100	100	60	6,000	100	45	4,500	12,600

Cleaning / packaging Cost

# people on line	hrs	rate	labor total	Whiz/ gas/ bird	birds	Whiz/ gas total	Cleaining cost total	TOTAL COST
4.0	8.0	30	960	11	70	770	1,730	14,330

INCOME

AVG. Dressed Kilos	# bird s	total weight	price	Total Income	Amortiz ation	Net INCOME	Profit/bird in PESO	
1.6	97	150	195	29,318	1,500	13,488	135	94.13%

Ave Live Wt 1.55K
Dressing percentage 76% [1.1K]
Mortality 3%

1-14 days Brooder only
15-28 days Brooder/Pasture
29-52 days Pasture A
53-70 days Pasture B

1-14 days Brooder only
15-28 days Brooder/Pasture
29-52 days Pasture A
53-70 days Pasture B
Daytime Pasture
Acclimitiztion
Night time brooder box

1-14 days Brooder only
15-28 days Brooder/Pasture
29-52 days Pasture A
53-70 days Pasture B

1-14 days Brooder only
15-28 days Brooder/Pasture
29-52 days Pasture A
53-70 days Pasture B

1-14 days Brooder only
15-28 days Brooder/Pasture
29-52 days Pasture A
53-70 days Pasture B

Shade increases
feeding activity
and weight gain

Professionally bred
Means uniformity

Grass pasture

Grass pasture

House design for 200 birds

Pastured Layer Poultry
Greens/pasture
Nest box 1:6
Multi-water points 1:10
Sunny days more eggs
-add light for cloudy days

Pastured Layer Poultry
ALOHA Layer House and Double Pasture System

Pastured Layer Poultry
ALOHA Layer House and Double Pasture System

Pastured Layer Poultry
BSF Larva Feed
ALOHA Layer House and Double Pasture System

Pastured Layer Poultry
BSF Larva Feed
ALOHA Layer House and Double Pasture System

Pastured Layer Poultry
Feeder
ALOHA Layer House and Double Pasture System

Pastured Layer Poultry
Layer breed
ALOHA Layer House and Double Pasture System

Pastured Layer Poultry
Vented roof
ALOHA Layer House and Double Pasture System

Pastured Layer Poultry
Chicken Salad

Pastured Layer Poultry
Chicken Salad

Pastured Poultry drives off snakes!

Chicken Tractor
ALOHA ® Patented © Whizbang Chicken Sled™

Meat 7-12/sq m
Layer less
Water
ALOHA ® Patented © Whizbang Chicken Sled ™

ALOHA ® Patented © Whizbang Chicken Sled ™
Wala Na

Shade increases feeding activity and weight gain
Sunlight increases Vitamin D production and immunity (overall health)
ALOHA ® Patented © Whizbang Chicken Sled ™

Built in feeder moves with cage

Feeder mounted in front only, overlap feed zone from previous day

ALOHA ® Patented © Whizbang Chicken Sled™

Feed spill zone

Feeder

Feeder mounted in front only, overlap feed spill zone from previous day

ALOHA ® Patented © Whizbang Chicken Sled ™

Feeder mounted in front only, overlap feed spill zone from previous day

ALOHA ® Patented © Whizbang Chicken Sled™

Feeder mounted in front only, overlap feed spill zone from previous day

ALOHA ® Patented © Whizbang Chicken Sled™

Feeder mounted in front only, overlap feed spill zone from previous day

ALOHA ® Patented © Whizbang Chicken Sled™
Water, Grass
and sunshine

ALOHA ® Patented © Whizbang Chicken Sled™

ALOHA Whizbang Chicken Sled

side

front

1/2” clearance for grass

Density 3 to 6 meat birds /sq m

CORNGRITS
25.00
CRACK CORN
24.00
Feed
Scratch

GESTATING
23.00
/Kg
24
EXCEL
HOG STARTER PELLET
25.00
CORN MEAL
20.00
/ KILO
HOG GROWER PE
Starter

Feed
COPRA MEAL
12.00
HOG ST

Feed

Feed

Chicken Feed Layer (2 Liter Scoop)

1 Scoop Bokashi B (w/o tae)
1 Scoop Copra
1 Scoop Fish Meal
1 Scoop Corn Grits
1 Scoop Tiki Tiki
1 Table Sp Sea Salt or rock dust
1 Table Sp Livestock Lime

3% min.

Goats & cows
- cut and carry/pasture
Supplement only

EM Bokashi B (Hog Feed)

Ferment 2 weeks
10 L D1
10 L Copra
50 ml Molasses
50 ml EME
100 ml uling

Ducks
50% Bokashi B
25% Fish meal
25% chopped greens

Fish Cakes
50% Bokashi B
50% Fish meal

Feed

Scientifically Formulated Excel Spread Sheet Balanced Protein

Chicken Feeds

Starter	_____DAYS				
	Crude Protein	Cost P/ 50K sack			Cost P/ Kilo
B Meg Starter	19.00%	1,100.00			22.00
Fermented EM Feed	19.16%	625.67			12.51
Formula					
	Crude Protein	Weight (K)	Cost P/Kilo	CP Units	COST (Pesos)
Tiki Tiki	14.0%	**2.00**	8.00	0.28	16.00
Copra Meal	22.0%	**2.00**	8.00	0.44	16.00
Fish Meal	40.0%	**2.00**	20.00	0.80	40.00
Corn Grits	7.0%	**2.00**	20.00	0.14	40.00
Hog Feed	14.0%	**2.00**	8.00	0.28	16.00
Livestock Lime	0.0%	**0.02**	8.00	0.00	0.16
Rock Dust Minerals	0.0%	**0.02**	2.00	0.00	0.04
Charcoal-fine	0.0%	**0.03**	1.00	0.00	0.03
Fish Sliage (FAA)	33.0%	**0.20**	6.00	0.07	1.20
EM & Molases (each	100ml/10 Liters)	**0.20**	8.00	--	1.60
		10.47		2.01	131.03

Feed
Chicken Salad
VARSITY

Manual
Or
Motor Driven

Feed
Sack of wet sawdust
Move every 3-4 days
Termites = free feed
Insect Habitat

Feed
Free Choice

Feed
Free Choice

Feed
Mongo Plant Feed
Fodder Crop

Mongo Plant Feed
Feed
Fodder Crop

Why Grass-Fed is Best

More Fat-Soluble Vitamins – A, D, E, K - in the fat.

More CLA - anti-cancer & weight loss compound - in the fat.

More minerals - mostly in the fat.

To get the benefits of grass feeding... you must eat the fat!

And I will send grass in thy fields for thy cattle, that thou mayest eat and be satisfied.
Deut 11:15

NUTRIENT DENSE FOOD AND MAXIMUM HEALTH

Liver: No food higher in nutrients

Per 100 g	**Apple**	**Carrots**	**Red Meat**	**Liver**
Phosphorus	6 mg	31 mg	140 mg	476 mg
Iron	.1 mg	.6 mg	3.3 mg	8.8 mg
Zinc	.05 mg	.3 mg	4.4 mg	4.0 mg
Copper	.04 mg	.08 mg	.2 mg	12 mg
Vitamin B2	.02 mg	.05 mg	.2 mg	4.2 mg
Vitamin A	0	0	40 IU	53,400 IU
Vitamin C	7 mg	6 mg	0	27 mg
Vitamin B6	.03 mg	.1 mg	.07 mg	.73 mg
Vitamin B12	0	0	1.84 mg	111.3 mg

Eat liver fried, grilled, with bacon, in sausage, pate and liverwurst.

Feed
Rotaional Grazing

Feed
Insects

Feed
Insects

Feed
B-2

Conventional
vs.
Aloha Grass Fed
Chicken Egg

Hard Boiled
Aloha Grass Fed
Chicken Egg
vs.
Conventional

Raw
Conventional
vs.
Aloha Grass Fed
Chicken Egg

Conventional
2 distinct parts
Yolk
White

VS.

Grass fed
3 distinct parts
Yolk
Protein
White

We never refrigerate our eggs

Once chilled, always chilled

"The egg is a marvel in terms of protecting itself, and one of the protections is this coating, which prevents them from being porous," says food writer Michael Ruhlman, author of *Egg: A Culinary Exploration of the World's Most Versatile Ingredient.*

Essential Fatty Acids

Humane and
Efficient Harvest

Humane and
Efficient Harvest
The Kill Cone
VARSITY
10

Humane and
Efficient Harvest
Cone
Pattern
48”
17.5”

1. outer compass
48"
Kill cone

2. inner compass
17.5"

3. cut with 2 tabs
per cone

4. four cones
per circle
eight cones
per sheet
48"
17.5"

Humane and
Efficient Harvest
Power
Chicken
Plucker
Kent C-25
Plucker Finger
1 bird plucked
In 3 minutes

Whizbang Chicken Plucker

Effective Hair Restraints
Professional Poultry Processing Line

Dressed 1.5 kilo avg
70 days
Net profit P56/bird

Iced Birds!

Ducks

Ducks

Ducks
Shade increases feeding activity and weight gain

Viet Ville
Ducks

Ducks

Ducks

Pasture Ducks and Geese too!
Ducks

Ducks

Ducks

Ducks

Ducks

Starter	0 - 14 DAYS					
	Crude Protein	Cost P/ 50K sack				Cost P/ Kilo
B Meg Starter	20.00%	₱ 1,600.00				22.00
Aloha Feed	19.83%	₱ 728.63				14.57
	Crude Protein	Weight (K)	%	Cost P/Kilo	CP Units	COST (Pesos)
Tiki Tiki	14.0%	**1.00**	13.8%	8.00	0.14	8.00
Copra Meal	22.0%	**1.00**	13.8%	8.00	0.22	8.00
Fish Meal	40.0%	**2.00**	27.5%	20.00	0.80	40.00
Corn meal	7.0%	**2.00**	27.5%	20.00	0.14	40.00
Bokashi Hog Feed	14.0%	**1.00**	13.8%	8.00	0.14	8.00
Livestock Lime	0.0%	**0.02**	0.3%	8.00	0.00	0.16
Rock Dust Minerals	0.0%	**0.02**	0.3%	2.00	0.00	0.04
Charcoal-fine	0.0%	**0.02**	0.3%	1.00	0.00	0.02
Fish Sliage (FAA)	33.0%	**0.00**	0.0%	6.00	0.00	0.00
EM & Molases (each	100ml/10 Liters)	**0.20**	2.8%	8.00	--	1.60
		7.26	**100%**		1.44	105.82

Ducks

Ducks
08/16/20
2:21

Duckponics

Ducks
Meet
Keith
Whizbang your ducks too!

EM Livestock

Goat

EM Claims

1. Boosts stomach flora
2. Prevents worms
3. Probiotic
4. Increases digestible protein
5. Minimizes odors
6. Increases fertilizer value
7. Prevents ammonium build up

Train Your
Livestock!
WBB 882

Train Your Livestock!
Goat Management

DAR-PARO
CENTER

Miss Bokashi

Goat Management

Feed

- Cut and carry
  - Labor
  - Fodder crops
- Concentrate
  - expensive
- Pasture
  - Parasites AM

Cut and Carry Management

Rinzoni, Flanemgia

Grazing

- Tether
- Fence
- Sheppard

https://www.pinterest.com/pin/452541462542767238/

Life Cycle of Haemonchus contortus, the barber pole worm

•Dry season pasture

•Rainy season pasture
Pasture Management

Cogon grass

Humidacola

Humidacola

Vertical Pasture

Kennedy grass

Medicinal Pasture

Wheat grass, rice grass

Rope method Vetiver
For washout zones
Vetiver
Super bound non-erosion

	Young Vetiver	Mature Vetiver	Old Vetiver
Energy [kcal/kg]	522	706	969
Digestibility [%]	51	50	-
Protein [%]	13.1	7.93	6.66
Fat [%]	3.05	1.30	1.40

Figure 5 Potential of cut and carry grasses- *Chrysopogon zizanioides* (vetiver) -Wikipidea

Raised Feeder

Bucks
Milking doe

Planned Pedigree Print

www.adgagenetics.org

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Planned Breeding

K-N-H RANCH SBS BODACIOUS x K-N-H RANCH SBS BUTTERFLY

SSS : LAKESHORE-FARMS DOCTOR LUKE
SS : LAKESHORE DL PERFECT STORM
SSD : LAKESHORE-FARMS SIERRA STORM
S : LAKESHORE PS SPOKANE BY STORM
SDS : KASTDEMUR'S AT YOUR SERVICE
SD : LAKESHORE ACE SHAKIRA
SDD : LAKESHORE-FARMS RCS SHASTA
K-N-H RANCH SBS BODACIOUS
DSS : LADIES-BLUE CMD JESSE JAMES
DS : REUEL SAMIEL JJ STARBUCKS
DSD : REUEL ZEPHYR'S EK SAMIEL
D : K-N-H RANCH SB ZSA ZSA
DDS : REUEL RUFUS' J.J. RYAN
DD : REUEL ABEDIAH'S RY ADERA
DDD : REUEL AMANDA'S J.J. ABIDAH

SSS : LAKESHORE-FARMS DOCTOR LUKE
SS : LAKESHORE DL PERFECT STORM
SSD : LAKESHORE-FARMS SIERRA STORM
S : LAKESHORE PS SPOKANE BY STORM
SDS : KASTDEMUR'S AT YOUR SERVICE
SD : LAKESHORE ACE SHAKIRA
SDD : LAKESHORE-FARMS RCS SHASTA
K-N-H RANCH SBS BUTTERFLY
DSS : LADIES-BLUE CMD JESSE JAMES
DS : REUEL SAMIEL JJ STARBUCKS
DSD : REUEL ZEPHYR'S EK SAMIEL

Planned Breeding ETA

ETA21: N/A
ETA12: N/A

K-N-H RANCH SBS BODACIOUS x K-N-H RANCH SBS BUTTERFLY - 22.08% Inbred

Top 10 Individual Contributors to Inbreeding %

Registered Name	Reg #	Inbreeding %
LAKESHORE PS SPOKANE BY STORM	N001442448	7.30
REUEL SAMIEL JJ STARBUCKS	N001412255	1.82
LAKESHORE DL PERFECT STORM	N001430017	1.80
LAKESHORE ACE SHAKIRA	N001367574	1.68
LADIES-BLUE CMD JESSE JAMES	N001055898	1.22
KASTDEMUR'S AT YOUR SERVICE	N001138617	0.99
BROWN SUGAR'S CROWN AMBASSADOR	N000729928	0.58
LADIES-BLUE CAT-MAN-DOO	N001013023	0.52
KASTDEMUR'S CROWN EXCESS	N000906108	0.46
LAKESHORE-FARMS SIERRA STORM	N001164383	0.44

Bucks Breeding Barn
Prevents in-breeding
Separate from Milking Does
[milk will not smell]

Sell your buck
every year to
prevent inbreeding

NAVIGATION

Kidding

Kidding

Kidding
EM1:H2O
1:50

Housing

- Mud floor
  - disease
- Cement floor
  - hygiene
- Sawdust
  - Maintenance
- Wood slotted floor
  - Maintenance
- Plastic slotted floor
  - Maintenance

KNF Flooring

Slotted plastic flooring

Complex Social Hiarchy

Slotted plastic flooring

PGR-Cocogro
Coco meat

After much clinical research, experts have now identified the top four leading causes of premature death…
Happy Birthday Archie
1. Birthdays
2. Weddings
3. Graduation
4. Fiesta

It’s up to you now

1. Assess resources
2. Make a workable plan
3. Start using EM
4. Do the 10 Fundamentals
5. Come back for more training

Alumni now qualify to return for hands on experience!