



Free range chicken from ABRA

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# BAMBOO LEAVES AS CHICKEN FEED & FODDER

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# Bamboo: protector of earth's health & wealth

- a pillar for environmental protection
- a material for sustainable development
- a vehicle for fast returns on small investments



# Bamboo for Construction



# Bamboo for Housing



# Bamboo for Furniture



# Bamboo : Furniture



# Bamboo for Outdoor Furniture



# Bamboo for Schools



# Bamboo for curtains & food package



# Bamboo:a substitute for fossil fuel

- Activated carbon for industrial use;
- Gas produced through gasification;
- comparable or higher net calorific value of 18.3 – 19.7 mj/kg than wood.



# Bamboo: essences & cosmetics



# Bamboo: vinegar & juice



# Bamboo as Textile



# Bamboo in Transportation



# Bamboo as Food for Livestock



- Chicken
- Panda
- Goat
- Donkey



# Why Organic? For Improved Health



# Bambuorganic Farm : its beginning



- Started in March 2010 as an advocacy for health & for bamboo promotion -integrated farm with **POULTRY, TRAINING CUM PRODUCTION CENTER FOR BAMBOO, LOOMWEAVING, NATURAL DYE & FRUIT TREES PLANTATION**

# Out of Local Materials Planted Earlier



# Organic/ Free Range Chicken



Chicken have access to open-air runs during daylight hours  
Chicken must be protected from predators at all times

The ground to which the chicken have access is covered with palatable vegetation & has some shades provided

There is vegetation cover growing on the land where the chicken range

Stocking rate is 1.5 birds per 10 square meters

# Organic Food

Rice bran - 20 kgs  
Ground corn - 10 kgs  
( carbohydrates)  
Banana trunk - 10 kgs  
Camote (sweet potato) - 20kgs  
Rice wash -10 liters  
Abrex - 1 liter  
Muscovado— 2 kgs  
Fermented fruit juice - 2 cups  
Fermented fish amino acids = 2 cups



# Organic Diet



# Nature's Effective Mechanism

## ABREX

### **ABREX(Abra Extract) PREPARATION**

#### **A. IMO**

- Cook 1 ganta organic rice
- Place cooked organic rice inside Bamboo cylinder
- Cover with manila paper and cellophane and tie
- Dig 10" deep in a virgin soil
- After 7 days (good quality – no black mold), remove from cylinder

#### **B. NEM**

- Remove rice from cylinder
- Weigh – equal to muscovado
- Place in a plastic gallon the NEM (Nature Effective Microorganism)
- Ferment for 28 days



# Nature's Effective Mechanism

## ABREX



### C. ABREX

- Mix 300cc NEM ( Nature's Effective Microorganism) (1 small can of sardines)
- 100L water
- 3kg muscovado
- 21 days fermentation

### ABREX uses:

- Decomposers – 1L abrex, 400 L water, 4kg sugar
- Deodorizer – 1L abrex, 50L water
- Enhanced digestion – 20mL abrex, 1L water



# Limitations of Study

- Only conducted on this chicken which is GRIMAUD FRERES (parent stocks imported from Roussay, France), by Free Range Aimee, the supplier for day-old chicks of Bambu Organic Natural Farm poultry component. The testing was not conducted for other species/varieties of fowls.
- Only a comparative study between experimental and control groups were done. The variables of the study have been limited because of many constraints.
- The poultry is just a backyard farm and not a large scale production unit. It is more a venture in an advocacy - for health improvement and for learning with limited production capacity, rather than a large-scale production unit.

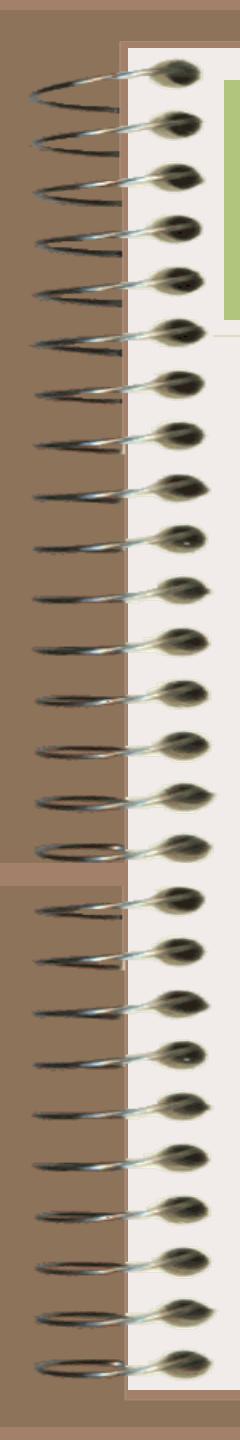
# PROCESS



One-day-old organic chicks were sourced from a certified supplier and were split into two control batches and five test batches

# PROCESS





# PROCESS

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- 1/Two control batches fed a standard organic diet of fermented vegetables, corn, muscovado sugar, and fermented fish.
- 2/ Test batches fed standard organic diet of fermented vegetables, corn, muscovado sugar, and fermented fish, with bamboo leaves added. Young bamboo leaves were harvested by hand on a daily basis to ensure freshness, from a widely grown *Bambusa sp1*, species (known locally as “*bayog*”). When supplies of *bayog* were not readily available, another commonly growing species, *Bambusa blumeana* (“*kawayan tinik*”), was substituted.

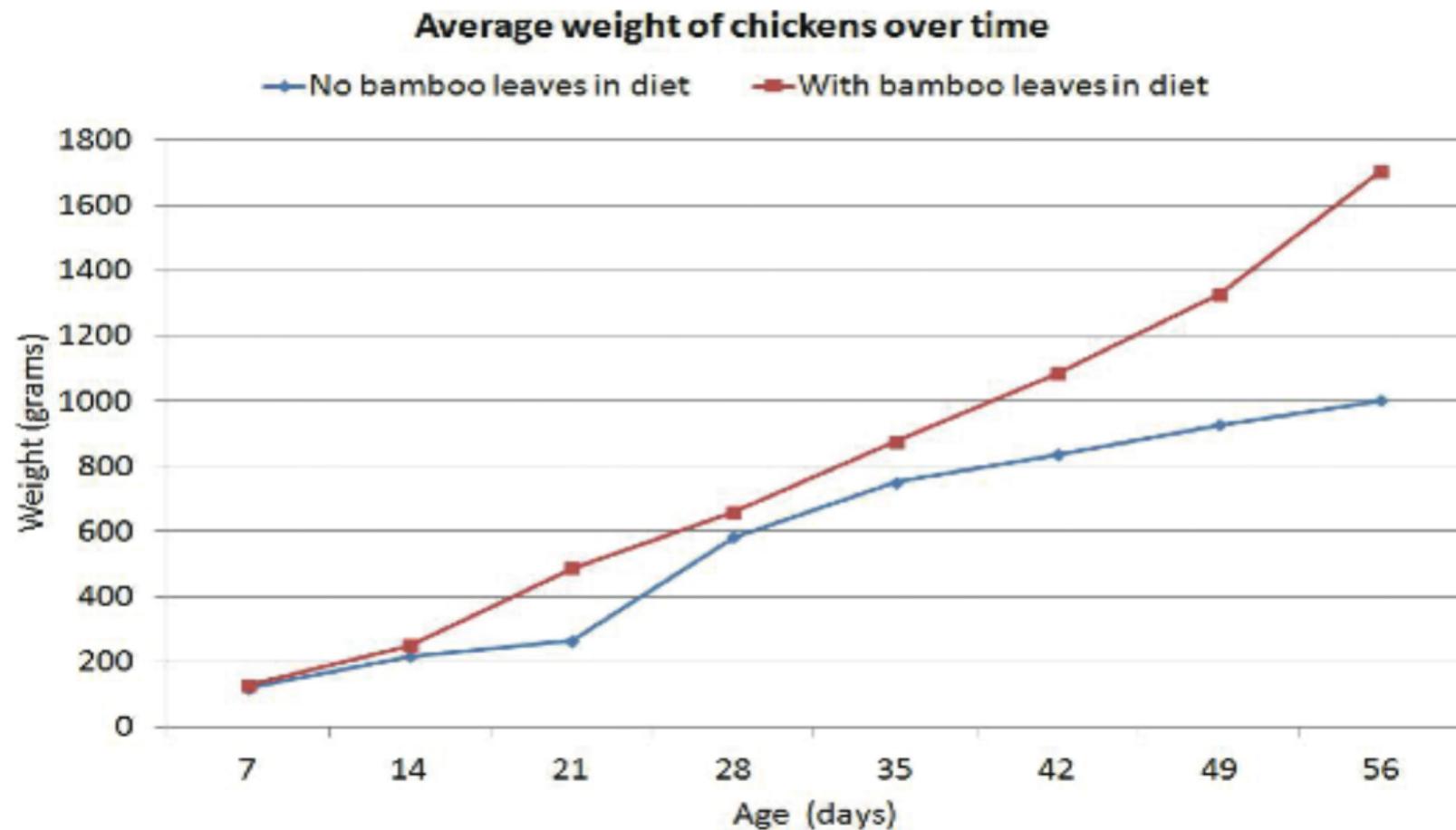
# Feeding with Bamboo Leaves



# Data Gathered During Experiment

Days	Control Group			Test Group					
	Batch1	Batch 2	Average	Batch 3	Batch 4	Batch 5	Batch 6	Batch 7	Average
7	149	152	150.5	149	150	149	149	150	149.4
14	209	212	210.5	235	242	240	238	240	239.0
21	280	281	280.5	499	505	501	495	500	500.0
28	580	579	579.5	635	640	640	643	640	639.6
35	757	763	760.0	875	881	880	883	881	880.0
42	810	812	811.0	1087	1083	1080	1076	1080	1081.2
49	935	947	941.0	1327	1335	1330	1327	1330	1329.8
56	998	1010	1004.0	1695	1698	1701	1703	1698	1699.0

# Data Gathered During Experiment



# Data Gathered During Experiment

Chicken fed with bamboo leaves		
Number of Heads	50	50
Live weight (Kilos)	1.44	1.56
Dressed weight (Kilos)	1.14	1.26
Length of intestines (cm)	89.20	78.33
Chicken without bamboo leaves		
Number of heads	50	50
Live weight (Kilos)	1.44	1.52
Dressed weight (Kilos)	1.14	1.22
Length of intestines (cm)	69.40	68.33

# NUTRITIONAL VALUE OF LEAVES FOR FODDER

Feed Material	Dry Matter	Crude Protein	Ether Extract	Crude Fiber	Ash	Nitrogen Free Extract
Bamboo, green variety	42.00	7.64	1.48	12.21	5.23	15.44
Bamboo, yellow variety	37.90	6.72	1.19	11.70	3.99	14.30
Sorghum (Hallepence)	18.97	2.45	4.62	6.30	2.56	7.04
Sweet potato, green leaves	29.75	8.02	0.24	3.51	2.86	15.12
Sweet potato, purple leaves	23.62	7.38	0.31	2.42	2.19	11.32
Sweet potato, vine and leaves	15.66	2.93	0.46	1.49	1.66	9.12



# CONCLUSION

Feeding chicken with an organic diet containing fresh bamboo leaves results in their increased weight up to 70% more than those fed with the standard organic diet.

The fiber in the bamboo leaves enlarges the digestive tract of a chicken and enables it to consume more , and thus, grow faster.



# The Way Forward

- Determine the optimal amount of bamboo material given as fodder
- Analysis of nutritional value of other local bamboo species
- Analysis of nutritive content of chicken fed with bamboo
- The effects of feeding other animals with bamboo leaves

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**SALAMAT**