BAMBOO LEAVES AS CHICKEN FEED & FODDER

By: Carmelita B. Bersalona
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 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 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) - 20 kgs
- Rice wash - 10 liters
- Abrex - 1 liter
- Muscovado - 2 kgs
- Fermented fruit juice - 2 cups
- Fermented fish amino acids = 2 cups
Organic Diet
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
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 – 11 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.
One-day-old organic chicks were sourced from a certified supplier and were split into two control batches and five test batches.
PROCESS
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
The average weights of the control and experimental batches

<table>
<thead>
<tr>
<th>Days</th>
<th>Control Group</th>
<th>Test Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Batch1</td>
<td>Batch 2</td>
</tr>
<tr>
<td>7</td>
<td>149</td>
<td>152</td>
</tr>
<tr>
<td>14</td>
<td>209</td>
<td>212</td>
</tr>
<tr>
<td>21</td>
<td>280</td>
<td>281</td>
</tr>
<tr>
<td>28</td>
<td>580</td>
<td>579</td>
</tr>
<tr>
<td>35</td>
<td>757</td>
<td>763</td>
</tr>
<tr>
<td>42</td>
<td>810</td>
<td>812</td>
</tr>
<tr>
<td>49</td>
<td>935</td>
<td>947</td>
</tr>
<tr>
<td>56</td>
<td>998</td>
<td>1010</td>
</tr>
</tbody>
</table>
Data Gathered During Experiment

Average weight of chickens over time

- No bamboo leaves in diet
- With bamboo leaves in diet

Weight (grams)

Age (days)
# Data Gathered During Experiment

<table>
<thead>
<tr>
<th>Chicken fed with bamboo leaves</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Heads</strong></td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td><strong>Live weight (Kilos)</strong></td>
<td>1.44</td>
<td>1.56</td>
</tr>
<tr>
<td><strong>Dressed weight (Kilos)</strong></td>
<td>1.14</td>
<td>1.26</td>
</tr>
<tr>
<td><strong>Length of intestines (cm)</strong></td>
<td>89.20</td>
<td>78.33</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chicken without bamboo leaves</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of heads</strong></td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td><strong>Live weight (Kilos)</strong></td>
<td>1.44</td>
<td>1.52</td>
</tr>
<tr>
<td><strong>Dressed weight (Kilos)</strong></td>
<td>1.14</td>
<td>1.22</td>
</tr>
<tr>
<td><strong>Length of intestines (cm)</strong></td>
<td>69.40</td>
<td>68.33</td>
</tr>
</tbody>
</table>
## NUTRITIONAL VALUE OF LEAVES FOR FODDER

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

Source: Bureau of Animal Industry, Department of Agriculture
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

***HIGHER CHICKEN PRODUCTIVITY WITH BAMBOO ****
We grow our chickens at the foot of the Cordillera Mountains just for you with your health in mind.

These are free range chickens and totally organic! We process our own feeds, free of GMO, hormones and chemicals, from our own corn, cassava, vegetables, protein plants and fish fermented with molasses, mixed with rice bran.

The chickens are from 1 kg to 1.5 kg each. We deliver to your doorstep at 290/kg.

call now! Medilen Singh +63917.629.0829
Thank you

SALAMAT