GOLDEN APPLE SNAI L NEW ECONOMIC ANIMAL IN FUTURE FOR THAILAND

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1. Area under rice production in Thailand about 9,120,000 hectare.
   Direct-seeded rice area: 4,272,000 hectare.
   Transplanted rice area: 4,848,000 hectare.


3. The management or alternative methods for rice farmers to control apple snail.
   • kill by chemicals
   • picking or mechanical control
   • farm animal fed for duck, chicken, fish, and prawn
   • liquid bio-fertilizer or compost
   • foods
   • gift set

4. The most popular utilization of golden apple snail by rice farmer:
   • Liquid bio-fertilizer or compost
   • Farm animal fed
**Liquid bio-fertilizer or Compost**

**Materials**

1. golden apple snail meat without shell
2. golden apple snail eggs
3. young waste plants
4. golden apple snail meat with shell
5. molasses
6. container with cover 200 liter for bio-fertilizer ferment
7. EM. (effective micro organisms)
8. Container for EM.
9. gallon or bottle for contain ready liquid bio-fertilizers
10. filter for separate cake and liquid bio-fertilizer

<table>
<thead>
<tr>
<th>Liquid bio-fertilizer</th>
<th>pH</th>
<th>EC</th>
<th>N  %</th>
<th>P₂O₅ %</th>
<th>K₂O %</th>
<th>Humic Acid %</th>
<th>Organic Matter %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. GAS with Shell</td>
<td>4.9</td>
<td>17,350</td>
<td>0.84</td>
<td>-</td>
<td>1.67</td>
<td>3.07</td>
<td>15.13</td>
</tr>
<tr>
<td>2. GAS eggs</td>
<td>4.6</td>
<td>17,020</td>
<td>1.23</td>
<td>0.06</td>
<td>1.16</td>
<td>4.45</td>
<td>26.51</td>
</tr>
<tr>
<td>3. GAS eggs and plant waste</td>
<td>4.3</td>
<td>16,110</td>
<td>0.87</td>
<td>0.9</td>
<td>1.68</td>
<td>4.47</td>
<td>26.67</td>
</tr>
<tr>
<td>4. GAS eggs and meat</td>
<td>4.3</td>
<td>12,280</td>
<td>1.62</td>
<td>0.64</td>
<td>2.04</td>
<td>4.31</td>
<td>20.44</td>
</tr>
<tr>
<td>5. GAS meat and plant waste</td>
<td>4.3</td>
<td>15,510</td>
<td>0.74</td>
<td>0.33</td>
<td>1.83</td>
<td>3.57</td>
<td>30.68</td>
</tr>
</tbody>
</table>

Source: (Boonyoug Yaisang, SMS, Chanthaburi Province. April 4, 2000)

The results showed all liquid bio-fertilizer are highly acidic about 4.2-4.9 and high concentrate. It has high toxicity to young plant. Before use, observe effective or reaction of the plant. The rate of use is about 5-20 cc. per water 20 liter. It's good for any kind of plant and soil fertility.
It is ready to use after one month. If we mixed 1 part of GAS and 1 part of molasses, we can get 60% of liquid and 40% of cake, which can make compost. Now, they are commercial and popular in Thailand. One litter is about 80-150 Baht (2-3.5 US.)

**Animal farm Fed**

**For duck**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Small duck 0-4 weeks Protein 18% weight (kg)</th>
<th>Young duck 5-10 weeks Protein 16% weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice bran</td>
<td>40.0</td>
<td>30</td>
</tr>
<tr>
<td>Broken Rice</td>
<td>7.5</td>
<td>22.5</td>
</tr>
<tr>
<td>Chop dry meat GAS</td>
<td>30.0</td>
<td>30.0</td>
</tr>
<tr>
<td>Soybean cake</td>
<td>22.5</td>
<td>17.5</td>
</tr>
<tr>
<td>Minerals</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>Salt</td>
<td>0.5</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Source: Tharn Nuankeaw, SMS, Uthaithani Province. October, 1999

This formula can save more cost for farmer and make deep red egg yolk.