Artemis & Angel Co. Ltd.
99/296 President Park, Sukhumvit 24, Klongtoey,
Bangkok 10110, Thailand
Tel.: (President) +66-86-329-6038; (Sales): +66-99-337-7866
E-mail: artemisandangelcoltd@gmail.com **Website:** www.artemisthai.com

Monday, October 9, 2023

Some Field Test Results and a Summary of the Benefits of Using Bio-Plant and Pro-Plant to Grow Tea

1. Effect of Using Bio-Plant and Pro-Plant to Grow Tea in Chiang Rai Province, Thailand

- Many farmers in the hills of North Thailand use the bio-fertilisers to grow tea. After spraying Pro-Plant twice during a 2-week leaf-picking period they obtain the following standard benefits:
  - The yield is 20% - 30% higher than when they grow tea with chemical fertiliser, even when they do not prepare the soil with Bio-Plant and only spray Pro-Plant on the leaves. It is standard that the tea bushes produce more leaves and branches.
  - The leaves look fresher and shine more.
  - The tea has less tannin and tastes less bitter.
  - The tea plants have more leaves and branches.
  - The quality and fertility of the soil is superior.
  - The quality of the tea is higher.
  - The tea has a more pleasant scent.
  - The Vitamin C level is higher.
  - Fungicides and insecticides are no longer need to be used (additional cost savings).

2. Maintenance of the Tea Plants

- The tea growers in Vietnam do the following to get their good results:
  - Over time the leaves of the tea plants get dusty, which inhibits the growth. They mix 1 litre of washing liquid in about 300 litres of water and spray or pour it over the leaves, followed by spraying water over the leaves. This cleans off the dust. Some tea growers may say that this is extra work, but the tea growers in Vietnam say it pays off in productivity.
  - The plants should be pruned once a year and the old leaves taken off. This needs to be done because if it is not done, when the tea growers spray Pro-Plant, the plants will be so thick that the spray cannot get through to the leaves.

3. Two Tests on Tea in Bangladesh

- Two tests have been carried out with ***tea*** in Bangladesh. These results are fairly standard as the same level of results is obtained commonly in Thailand and Vietnam when compared to chemical fertilisers. The increase is usually about 20% - 30%, more when there is proper soil preparation with Bio-Plant.
- **Test 1:** The test was carried out in a pretty well dead area of a tea plantation and the tea plants recovered to give a good yield of about 20% more than chemical fertilisers. Continuous use of chemical fertilisers had caused the condition of the tea plantation to deteriorate.

- **Tea 2:** After spraying Pro-Plant on Day 1, Day 8, and Day 15 the yield was 20% - 30% higher than what chemical fertilisers achieved. The leaves grew faster, and were thicker, longer, and greener. This happened again in the next 2 picking periods. The farmer's profit margin was much higher than usual with chemical fertilisers, but the agent could not say how much.

4. Vietnam Tea Test Results 2004

a) General Conditions

- On 9th June 2004 Bio-Plant and Pro-Plant were used to grow tea plants, and the effects were analyzed on 16th June 2004.
- The tea variety used was a local variety (green tea) and was grown from seed. It had been planted in the area since 1984. The soil had received very little fertiliser over this time.
- The soil condition was sandy soil mixed with stone. The height of the tea plant was 18 cm. The circumference of the tea leaves was 64.3 cm.
- At the end of 2003 no fertiliser had been applied to the soil.

b) The Test Process

- One farmer family was selected. The planting area was 1,800 m^2.
- The formula for using the bio-fertilisers was as follows:
  A. Bio-Plant (5 ml.) + water (20 litres).
  B. Bio-Plant (5 ml.) + Pro-Plant (10 ml.) + water (20 litres).
  C. Bio-Plant (5 ml.) + Pro-Plant (20 ml.) + water (20 litres).
- The Comparison Area did not use the bio-fertilisers.

c) The Test Results

Formula	Length of Tea Leaves (Cms.)	Weight of 100 Leaves (Grams)	Quantity Of Leaves (Per M^2)	Produce (Grams Per M^2)	Weight Comparison (Grams)
Test Area Formula A	6.5	95	196	1.86	0.46
Test Area Formula B	7.1	100	232	2.32	0.92
Test Area Formula C	8.2	110	249	2.73	1.33
Comparison Area	5.4	80	116	1.40	-

d) Comments

- Using the bio-fertilisers, the growth rate was clearly faster and the tea leaves were thicker, longer, and greener.
- After using the bio-fertilisers for 7 days, tea-end leaves could be picked, but in the Comparison Area it took 15 days before this could be done.
- The cost of applying the bio-fertiliser was 7,000,000-10,000,000 Dong/360 m^2, and the production increased by 3-4 kgs. dry weight compared to the Comparison Area, and this added significant extra revenue for the farmers of 75,000,000 – 100,000,000 Dong.

Hartai Provincial Agricultural Association,
District Juengmee

5. Vietnam Tea Test Results 2002-2003 *(See Part E on the next page.)*

Bio Liquid Fertilizer Research

Between

Department of soil development

Ministry of Agriculture and cooperative of Vietnam

And

Artemis & angelio co.,ltd.

Culture 2002-2003

Conclusion

Size research Small and large area with all kinds of Plants culture

LOCATION Northern Part of Vietnam.

Variety of Plants

1. Rice
2. Corn
3. Yellow bean
4. Cabbage
5. Tea

A. Rice culture research

1. Bio - Plant 99
   - Productivity increase = 990 -1,500 kg / hectare = 10,000 m^2 or 14.8 - 20.3 %
   - Income increase = 547,500 – 567,500 d / hectare = 99.84 USD
2. Pro - Plant 99
   - Productivity increase = 10.8 -15.9 %
   - Income increase = 942,900 – 1,422,900 d / hectare
3. Mix Bio - Plant 99; Pro – Plant 99 25% and Chemical Fertilizer 75%
   - Productivity increase = 8.4 – 25.5%
   - Income increase = 762,400 – 2,918,200 d/ha

B. Corn culture research

Location = Sea Side , Soil condition = Soil mix Sand

Bio-plant 99

- Productivity increase = 320 kg / hectare
- Income increase = 207,500 d / hectare

C. Yellow bean culture research.

1. Bio-plant 99

- Productivity increase – 120-180 kg / hectare or 4.9 - 12.9 %
- Income increase = 392,900 d / hectare
- Protein increase = 1.94 %

2. Mix Bio-Plant and Pro-Plant 25% and Chemical Fertilizer 75%

- Productivity increase = 230-360 kg /hectare or 14.6-16.4 %
- Income increase = 455,500-1,118,100 d / hectare
- Protein increase = 0.45 %

D. Cabage culture research

1. Bio-Plant 99

- Productivity increase = 640-720 kg / hectare or 13.1-15.3%
- Income increase – 9,167,500-10,367,500 d / hectare

2. Pro-Plant 99

- Productivity increase = 760-840 kg / hectare or 15.6-7.8%
- Income increase – 10,742,900-11,942,900 d / hectare
- Vitamin C increase = 5.8 mg / 100g
- Nitrate reduce = 2.9 mg / kg

3. Mix Bio-Plant and Pro-Plant 25% and Chemical Fertilizer 75%

- Productivity increase = 960 kg / hectare or 19.7-20.3 %
- Income increase = 14,136,900-14,140,700 d / hectare

E. Tea leaf culture research.

1. Bio-plant 99

- Productivity increase = 720-770 kg / hectare or 15.6-7.8%
- Income increase = 13,644,900-14,647,900 d / hectare
- Vitamin C increase = 30.6 mg / 100g (fresh tea leaf)
- Tannin reduce = 6.88 mg / kg

2. Pro-Plant 99

- Productivity increase = 400-430 kg / hectare or 18.1-21.6%
- Income increase = 3,354,000-5,154,000 d / hectare

Conclusion research for all kind of Plant Ministry of Agriculture Department of Soil development had approved to used Bio Liquid Fertilizer brand Bio-plant 99 and Pro-Plant 99 with culture for all kind of plant .

Artemis & Angel Co. Ltd.
99/296 President Park, Sukhumvit 24, Klongtoey,
Bangkok 10110, Thailand
Tel.: (President) +66-86-329-6038; (Sales): +66-99-337-7866
E-mail: artemisandangelcoltd@gmail.com **Website:** www.artemisthai.com

A Summary of the Benefits of Bio-Plant and Pro-Plant, 100% Organic, Liquid Bio-fertilisers for the Tea Industry in Kenya

The bio-fertilisers will enable the Kenya Tea Development Agency (MS) Ltd. to:

1. Make Kenya's tea industry completely 100% organic. This will provide Kenya with a significant advantage over other tea-producing countries. Moreover, tea from Kenya would have greater value in the global tea markets.
2. Increase tea exports. Kenya will become known for exporting 100% organic tea, which will increase exports and provide more money for the farmers and the economy.
3. Eradicate harmful chemical fertilisers and sprays from tea farming, and ensure that the country's tea exports will not be rejected over coming years because of chemical content. The European Union and Japan, for example, are becoming very strict about pesticide levels.
4. Increase the quality of tea. The usual benefits experienced by tea farmers in Vietnam, for example, are: the tea bushes have more leaves and branches; the yield of leaves is higher; the fertility and soil food web of the soil in the tea plantations improves continuously; the quality of the tea is higher; the leaves look fresher and shine more; the tea has a more pleasant scent and a less tannic taste; and the Vitamin C level is higher.
5. Reduce tea production costs. In both 100% organic farming and bio-chemical farming the cost savings are significant compared to chemicals. Also, fungicides and pesticides will no longer need to be used, which reduces costs more.
6. Restore and increase the soil's fertility, soil food web, and nutrient cycle. The bio-fertilisers do this effectively, and this is the key to increasing the productivity and quality of Kenyan tea.
7. Clean the soil of pesticides through bio-remedial microbial action, and change hard, chemical soil and poor soil into a crumbly, fertile state that is rich in micro-organisms and beneficial insect life.
8. Provide a flexible approach to transforming chemical tea production to 100% organic tea farming. Some chemical farmers might prefer to phase out their chemicals via bio-chemical farming, which they can accept easily. Others can start to farm 100% organically straight away.
9. Help to transform agriculture throughout Kenya to 100% organic agriculture with all the macro- and micro-economic, social, environmental, and health consequences this entails.
10. Reduce chemical agro-chemical pollution in the country's waterways and underground streams, which are used to produce drinking water.

My warmest regards,

Peter McAlpine
Chief Marketing Officer

อาร์ทีมิส Artemis & Angel Co.,Ltd. บริษัท อาร์ทีมิส แอนด์ แอนเจล จำกัด