DEPARTMENT OF SOIL SCIENCE

Faculty of Agriculture/Institute for Agricultural Research, Samar

Ahmadu Bello University

P.M.B. 1044, Zaria, Nigeria.

☎ (069) 550008
cdciar@inet-global.com

☎ (069) 5505/12
FAX: 1+234) 69-55056

Our Ref: SSD/FAC/29 Date: 2nd March 2016

The Honourable Minister
Federal Ministry of Agriculture and Rural Development
Abuja

ATTENTION: Mr Isah Adamu, AD Organic Fertilizer, Farm Input Support Service Department, Federal Ministry of Agriculture and Rural Development, No 4 Bima Close, Off Otupko Street, Off Gimbiya Street, Area 11, Garki-Abuja

Dear Sir,

RE-REQUEST FOR LABORATORY ANALYSIS OF TWO LIQUID ORGANIC FERTILIZERS (NANOMIX LEGUMES AND NANOMIX CEREALS)

This is to certify that we have carried out quality inspection and analysis on two organic seaweed fertilizer product named ***Nanomix Legumes and Nanomix Cereals*** marketed by **FLORECER GLOBAL SERVICES LIMITED**, submitted to us for analysis by your Ministry vide your letter Ref.: FISS/MGT/690/Vol 1/19 of 18th December 2016. The results are as follows:

1. Sample labeled ***Nanomix Cereals***

a. Physical Analysis

State: Liquid (Clear solution)
Colour: Green
Odour: Odourless

b. Chemical Analysis

Nutrient/parameter	Concentration < ——% w/v —— >
Nitrogen (N)	5.35
Phosphorus (P_2O_5)	0.21
Potassium (K_2O)	0.96

Nutrient/parameter	Concentration < —mg/L w/v — >
Calcium (CaO)	191.49
Magnesium (MgO)	246.83
Zinc (Zn)	770.89
Iron (Fe)	2134.96
Manganese (Mn)	539.53
Copper (Cu)	936.32
Cadmium (Cd)	Trace
Lead (Pb)	trace

Other parameters	
pH	3.26
Organic carbon (%)	0.69
Organic matter (%)	1.38
C:N ratio	0.13
Density (g cm^{-3})	1.17

c. Remarks

Our laboratories evaluated the fertilizer to determine some physical qualities, the concentrations of some essential plant nutrients and some elements considered toxic to crops, man and the environment. The results obtained show that the physical qualities of the products met the specifications set for packaging, storage, transportation and handling of organic fertilizers.

Results of the chemical analysis (on weight by volume basis) are presented in the Table above. Information on package indicated that the fertilizer is micronutrient-based combined with growth-enhancing substances. We were able to analyze the N, P, K and contents of some micronutrients. The concentrations of the micronutrients determined were high enough to provide for good plant nutrition and within tolerable limits .The concentrations of N was above the minimum values set for organic fertilizers in Nigeria while P and K were below, albeit the fact that the specification did not indicate these fertilizer elements were part of the formulation. The heavy metals Cadmium and Lead, were also within tolerable limits. Values for pH was also within the limits set for organic fertilizers. The organic matter level was lower than the minimum expected in organic fertilizers, though resulting C:N ratio is indicative of the fact that nitrogen in the fertilizer will be released to plants easily. From the foregoing, we conclude that the sample submitted is a good organic fertilizer. There is however the need to evaluate the efficiency of the fertilizer under greenhouse and field conditions. This is with a view to ascertaining the numerous claims contained in the information brochure.

2. Sample labeled ***Nanomix Legumes***

b. Physical Analysis:

State: Liquid (Clear solution)
Colour: Green
Odour: Odourless

b. Chemical Analysis

Nutrient/parameter	Concentration <——% w/v ——>
Nitrogen (N)	7.53
Phosphorus (P_2O_5)	0.18
Potassium (K_2O)	1.08
Nutrient/parameter	**Concentration <——mg/L w/v ——>**
Calcium (CaO)	159.04
Magnesium (MgO)	236.18
Zinc (Zn)	761.43
Iron (Fe)	2087.72
Manganese (Mn)	536.53
Copper (Cu)	912.39
Cadmium (Cd)	trace

Lead (Pb)	32.76

Other parameters	
pH	4.02
Organic carbon (%)	0.56
Organic matter (%)	1.03
C:N ratio	0.13
Density (g cm^{-3})	1.17

c. Remarks

Our laboratories evaluated the fertilizer to determine some physical qualities, the concentrations of some essential plant nutrients and some elements considered toxic to crops, man and the environment. The results obtained show that the physical qualities of the products met the specifications set for packaging, storage, transportation and handling of organic fertilizers.

Results of the chemical analysis (on weight by volume basis) are presented in the Table above. Information on package indicated that the fertilizer is micronutrient-based combined with growth-enhancing substances. We were able to analyze the N, P, K and contents of some micronutrients. The concentrations of the micronutrients determined were high enough to provide for good plant nutrition and within tolerable limits. The concentrations of N and K were above the minimum values set for organic fertilizers in Nigeria while P fell below, albeit the fact that the specification did not indicate these fertilizer elements were part of the formulation. The heavy metals Cadmium and Lead, were also within tolerable limits. Values for pH was also within the limits set for organic fertilizers. The organic matter level was lower than the minimum expected in organic fertilizers, though resulting C:N ratio is indicative of the fact that nitrogen in the fertilizer will be released to plants easily. From the foregoing, we conclude that the sample submitted is a good organic fertilizer. There is however the need to evaluate the efficiency of the fertilizer under greenhouse and field conditions. This is with a view to ascertaining the numerous claims contained in the information brochure.

Thank you for your patronage.

Yours faithfully,

Professor I Y Amapu
Chairman, Analytical Committee