



# Waste Management Association

Mahesh Babu  
President

28<sup>th</sup> May 2013

Ref# WMA/DoF/2013/06

Shri Sudhir Mittal, IAS  
The Secretary  
Department of Fertilizers (DoF)  
Ministry of Chemicals & Fertilizers  
Shastri Bhawan, New Delhi

**Re : Inclusion of Phosphate Rich Organic Manure under Nutrient Based Scheme**

Dear Shri Mittal:

*Waste Management Association (WMA)* includes members from all the major compost manufacturers in the Country with a combined annual capacity of producing 1.3 million tons of city compost from processing municipal solid waste.

Please find enclosed our proposal for '*Inclusion of Phosphate Rich Organic Manure under Nutrient Based Scheme*'. We request DoF to steer this on an urgent basis in the Inter Ministerial Committee on Nutrient Based Scheme. We are also approaching the Department of Agriculture & Cooperation in this regard. WMA believes this to be a small but path-breaking step towards organic fertilization and Integrated Plant Nutrient Management (IPNM).

We look forward to your support and guidance in taking this initiative forward.

Sincerely,

(Mahesh Babu)

Encl. :a/a

Regn No. S/194/2013

WASTE MANAGEMENT ASSOCIATION

**Proposal for inclusion of  
Phosphate Rich Organic Manure (PROM)  
under NBS scheme**

Submitted to Department of Fertilizers, Govt. of India

**May 2013**

Subsequent to gazette notification dated 22nd June 2012 from Ministry of Agriculture, to include PROM in Fertilizer Control Order (FCO), there is a need to consider its inclusion under NBS to make the product affordable to the farmers so that its usage is increased as the product offers advantage of higher Phosphate availability along with Organic Carbon and other micronutrients to the soil.

## Inclusion of Phosphate Rich Organic Manure under Nutrient Based Scheme

### **I. Background**

Urban India currently generates over 70 million tons of Municipal Solid Waste (MSW) each year, of which, around 5% is processed. In the year 2000, the Ministry of Environment and Forests (MoEF) introduced the MSW Rules, which mandates the processing of waste and scientific land filling of rejects. The dumped garbage leads to environmental and health hazards in all our cities and occupies scarce urban land. *Processing can reduce the volume of waste to landfill/dumpsite by 80 % by converting the waste into useful by-products.* Processing provides an opportunity and is critical for cleaning the urban landscape while mitigating green house gases. The processing of MSW leads to Organic Compost (also known as City Compost), a very useful product for agriculture which was brought under Fertilizer Control Order (FCO) regime in 2009. The product is rich in Organic Carbon which is needed by the soil for restoring its basic properties. Yet another variant brought under the FCO regime in June 2012 is Phosphate Rich Organic Manure (PROM) and city compost is a key base ingredient for making PROM.

The Ministry of Agriculture has initiated certain concerted efforts to promote use of PROM by the farming community as the product besides being rich in Phosphate also provides much needed Organic Carbon to the soil.

### **II. IPNM and Need for a Balanced Nutrition for Plants**

Integrated Plant Nutrient Management (IPNM) is one of the critical factors in improving India's declining soil productivity. The Indian Council for Agricultural Research (ICAR), amongst others, has demonstrated that integrated use of optimal amounts of Nitrogen, Phosphorus and Potassium (NPK) in conjunction with organic fertilizer ensures better and sustainable yields, while correcting some of the secondary and micro-nutrient deficiencies in the soil.

It is proven that compost, in addition to replenishing the low Organic Carbon in Indian soils, also has several physical, chemical and biological effects including providing plant micro nutrients. Several Government task forces have recommended Integrated Plant Nutrient Management (IPNM) which envisages use of organic compost in conjunction with chemical fertilizers. The compost also includes micronutrients such as Zinc (Zn), Copper (Cu), Iron (Fe), Sulphur (S) etc.

***“PROM is the answer and a product of the future”.***

The balanced use of chemical fertilizers and organic compost also complements the Government move towards a Nutrient Based Subsidy (NBS) regime started in April 2010. The NBS provides for a ‘fixed subsidy for every kg of primary nutrient’ (N, P, K, S) in any fertilizer product for the whole year, while giving the industry the freedom to fix retail prices.

### **III. Constitution of PROM**

PROM is a value added product produced by co-composting high grade (+32 % P<sub>2</sub>O<sub>5</sub>) Rock Phosphate in fine size with organic compost and enriching it with microbial inoculants like Phosphate Solubilizing Bacteria (PSB) and Nitrogenous bacteria like Azotobacter. The application of PROM has proved beneficial even in saline and weak alkaline soils.

*PROM has been brought under FCO in 2012 (Gazette notification attached) considering its organic nature and higher efficiency over inorganic Phosphatic fertilizer. It has 10.42 % Phosphorus and 7.87 % Carbon besides other important macro & micro nutrients.*

### **IV. Key Benefits of PROM**

1. Phosphate maintains balanced intake of Nitrogen & Potash for the plants and it is the yield deciding factor and also necessary for quality product,
2. PROM helps in profuse root growth and development, a most important factor for uptake of plant nutrients,
3. PROM application triggers the seed germination and results in more number of tillers, optimum girth of stem, extra vegetative growth, which gives increased yield,
4. Phosphate is a building block for plants and an important element of DNA and RNA of Plant cells, and
5. Because of presence of Organic Carbon in PROM, availability of ‘P’ to plants is highest in comparison to inorganic fertilizer, as Carbon increases Cation Exchange Capacity (CEC) and water holding capacity of soil.

## V. Advantages of PROM

1. The dissolution of rock phosphate mineral in PROM is mainly due to biotic activity. Compost naturally contains a variety of micro organism that dissolves rock phosphate mineral. Addition of phosphate solubilizing micro organism further enhances the PROM efficiency,
2. In PROM, the basic raw material is organic compost and rock phosphate. Due to bonding of rock Phosphate with humus, microbial activity is activated resulting in higher availability of 'P',
3. Due to the presence of Silica and Calcium in PROM, plants become strong, healthy and pest and disease resistant,
4. PROM also provides micronutrients like Zn, Fe, Mg and Cu in potentially active form,
5. Humus induces microbial activity because of which soil becomes live and porous with enhanced water holding capacity and a neutral pH,
6. It is economically cheaper compared to other Phosphatic chemical fertilizers, and
7. Most of the chemical Phosphatic fertilizers (e.g. Di-Ammonium Phosphate (DAP) or Single Super Phosphate (SSP)) contain  $P_2O_5$  in water soluble form. However after few days of application water soluble  $P_2O_5$  turns to unavailable forms due to soil fixation. Only 20% to 25% of  $P_2O_5$  is effectively used in case of inorganic fertilizers while in case of PROM,  $P_2O_5$  availability is much higher and remains available for a longer time.

## VI. Application Mode

It is recommended to use two (2) to three (3) bags of PROM as an equivalent of one (1) bag of DAP. Though different crop have different nutrient requirement, the application can be minimum two (2) bags to maximum three (3) bags depending upon crop grown and type of soil.

**VII. PROM Costing and Need for Subsidy**

S. No.	Ingredient	Ratio/Unit	Cost per Metric Ton (MT)	Cost /MT of PROM
1	Compost	65 %	3500	2275
2	Rock Phosphate* with 32% P <sub>2</sub> O <sub>5</sub>	35 %	11000	3850
3	PSB	3 liters		420
4	Azotobactor	2 liters		280
5	Humic Acid	1 liter		130
<b>Total</b>				<b>6955</b>

\* High Grade

**Rs 6955/MT or Rs 348/bag of 50 kg**

**Note:** A batch of 106 kg is prepared and each bag is packed with 53 kg of material to get a net weight of 50 kg providing for minor moisture and weight loss due to continuous decomposition.

**Per Bag cost of PROM**

**(Rs /bag of 50 kg)**

1. Cost of PROM alone per bag of 50 kg	348
2. Cost of empty bag	25
3. Labor and handling	20
4. Manufacturers & Marketing Company margins	67
5. Average freight to dealer points	40
6. Dealer Margin	50
7. Minimum possible MRP to farmers	550/ bag or Rs 11000/ MT

The current cost of PROM will make it less popular with the farmers unless price advantage with other analogous products is maintained. Currently, one (1) bag of DAP is available to farmers at a price range of Rs 1200.

The rate of subsidy on Phosphates on chemical fertilizers under NBS is Rs 18.68/kg. If PROM is considered for subsidy on 'P' under NBS, it would have a net subsidy of Rs 1946/MT or Rs 97/bag. The selling price to farmers shall in that case be Rs 450/bag and they will be motivated to use PROM.

## **VIII. Proposal**

The chemical fertilizers like Urea, DAP, Muriate of Potash (MOP), SSP etc are currently falling under subsidy regime controlled through NBS scheme. The Govt. of India is constantly endeavoring to bring down the overall fertilizer subsidy burden. The Finance Minister has announced a 15% cut in fertilizer subsidy for FY 13-14 and the subsidy under NBS stands revised to that extent. As PROM is considered the closest substitute to DAP, it is believed that higher use of PROM by farming community will reduce dependence on DAP in a gradual manner and bring down the subsidy bill as well as bring down the import bill as PROM will be an import substitution product.

*The revised subsidy on DAP (for Phosphate content) is Rs 18.68 per kg and with 46% Phosphate content in DAP, per MT subsidy will be Rs. 8593.*

Our proposal is to also include PROM under NBS. The subsidy on PROM for its Phosphate content of 10.42% will only be Rs 1946/MT against Rs 8593/MT for DAP. The PROM will have the added advantage of Organic Carbon being available to soil. Organic Carbon has its own advantage in restoring soil health and increasing soil productivity. Besides subsidy on 'P' content as defined under NBS, PROM should also be given freight subsidy applicable to other products and as defined under NBS.

## **IX. Financial Implications - A Clear Advantage**

The Solid Waste industry is capable of producing up to 15 million tons of city compost, which can result in about 20 million tons of PROM annually. However, this escalation will happen in a gradual manner as the product establishes popularity with farming community.

DAP with 46% of 'P' content gets a subsidy of Rs 8593/MT for Phosphate while the equivalent quantity of 2 MT of PROM will have a subsidy impact of Rs 3892. The differential saving to the government will be Rs 4700 per MT of DAP.

**Import Substitution Product:** During FY 11-12, total availability of DAP in the country was 10.86 million tons of which 6.91 million tons was imported and balance 3.95 million tons was domestic production. Indigenously manufactured PROM can potentially replace import of chemical fertilizers over time.

**Savings to Govt. of India:** With the PROM potentially becoming an import substitution product replacing imported DAP, the total saving to government will be around Rs 3200 crores per annum on 'P' content of DAP on imported portion alone.

## X. Operating Mechanism

It is proposed that the implementation of the scheme shall be at par with other chemical fertilizers being marketed by fertilizer companies and monitored under Fertilizer Monitoring System (FMS). The government shall fix Maximum Retail Price of the product and the sales/marketing will be done by chemical fertilizer companies and subsidy under NBS to be monitored and given to fertilizer companies only along with transport subsidy.

Fertilizer companies will purchase PROM from compost manufactures at a fixed and agreed price which is remunerative to them. The price fixation can be done by Department of Fertilizers and/or Fertilizer Association of India (FAI) in consultation with compost (PROM) manufacturers.

## XI. Recommendations

1. In order to promote the use of PROM, *the final price has to be maintained at par or lower than DAP and SSP and brought under NBS regime,*
2. *PROM should also be given freight subsidy applicable to other products and as defined under NBS,*
3. *The price fixation between manufacturers and marketing companies to be based on cost of manufacturing, and monitoring be carried as being followed under FMS for chemical fertilizers, and*
4. *As PROM is FCO compliant product, only those organic manures which are defined in FCO (i.e. vermi compost and city compost) should be defined as permitted base material to manufacture PROM.*





# Waste Management Association

Mahesh Babu  
President

4<sup>th</sup> October 2013

Ref# WMA/DoF/2013/10

Shri Sudhir Mittal, IAS  
The Secretary  
Department of Fertilizers (DoF)  
Ministry of Chemicals & Fertilizers  
Shashtri Bhawan, New Delhi

**Re: Inclusion of Phosphate Rich Organic Manure under Nutrient Based Subsidy Scheme**

Dear Shri Mittal:

Waste Management Association (WMA), vide its letter under reference No WMA/DoF/2013/06 dated 28<sup>th</sup> May, 2013, has submitted a proposal for considering the inclusion of Phosphate Rich Organic Manure (PROM) under Nutrient Based Subsidy (NBS) scheme.

As PROM is a bulky product, a primary constraint faced by the manufacturers is the cost of transportation from the urban waste generation and processing centres to the rural consumption points. Based on existing composting plants the rural consumption points are on an average at a distance of 200 km to 500 km. This leads to an approximate average transportation cost of Rs 600 to 1000 Per Metric Ton (PMT). Initially, the manufacturers will find it very difficult to bear this cost burden till the product sales reach reasonable volumes.

We understand that our proposal for inclusion of PROM under NBS is under your kind consideration. It is requested that this proposal be considered on the same lines as was done when Single Super Phosphate (SSP) was brought under NBS scheme (the manufacturers/marketing companies were allowed transport subsidy for a limited period). On the same lines, WMA requests you to consider providing freight subsidy for a limited period of two (2) to three (3) years, by which time the product will gain acceptance amongst the farmers.

We look forward to your support and guidance in taking this important initiative forward.

Sincerely,

(Mahesh Babu)

Regn No. S/194/2013