© 2017 IJSRST | Volume 3 | Issue 9 | Print ISSN: 2395-6011 | Online ISSN: 2395-602X
National Conference on Green Approach towards Environment and Chemical Science

Urea + DAP Briquette Increases Yield and Reduce Fertilizer Cost of Paddy Crop

Yogesh B. Yadav[1], Prashant G. Shete[1], Samir S. Shaikh[2], Rahul G. Gadage[1]
[1]KRISHI VIGYAN KENDRA, NARAYANGAON (PUNE-II)
[2]Gramonnati Mandal's Arts Comm & Sci College, Narayangaon Pune, Maharashtra, India

ABSTRACT

In initial years of KVK assess the problems are faced by the tribal farmers during the production of Paddy crop in western sides of KVK. In case of Paddy crop due to heavy rainfall there is a leaching losses of fertilizers added by farmers or fertilizers washout in running water. So that in consideration to this KVK assess the performance of Use of Urea + DAP Briquette in Khamgaon Village which is near by Junnar Tahsil with the help of Line dept. (ATMA). Finally KVK comes up with the recommendations of complete package of Four Fold Rice Cultivation technology which covers recycling of crop residues (Paddy), Use of green manures (Glyricidia), Plantation of seedling in proper spaces (15 x 25 cm or 20 x 25 cm) and application of Urea + DAP Briquette (170 kg/ ha.). Using urea briquette fertilizer the farmers getting more no. of tillers and obtaining more yield than that of his traditional method. i.e. Broadcasting of fertilizers. Before demonstrations yield of farmers is 28 Q/ha. and after the assessment yield increases up to 39 Q/ha. And recovery percentage is 55 to 60.

Keywords: Briquette.NPK Ferilizers ,Rice crop.

I. INTRODUCTION

Assessment area comes under western part of Maharashtra which include Tahasils like Junnar, Ambegaon, Khed, Maval and Mulshi with average annual precipitation of 2500 to 4000 mm (80% of rainfall received during June to September) and maximum temperature ranges from 29 to 39 ^{0} C. Minimum temp. ranges from 13-20 ^{0} C. Soils of these parts are Warkas i.e. light lateritic and reddish brown, distinctly acidic, poor fertility low in organic matter, Phosphorus and Potash content. The measure cropping pattern is Paddy followed by Wheat or Gram in case of heavy rainfall. Fertilizers applied by farmers are loss with running water and mainly micronutrients Zn, Fe are not getting by crops so there is reduction of yield day by day.

In operational villages the Paddy is a main crop for farmers. In year 2012-13 we have approach three villages for the use of Urea + DAP briquette with four fold rice cultivation technique and also conducted some demonstration in these villages. KVK select farmers for use Urea+ DAP briquette technique in Paddy crop and taken detailed methodological information on spacing of plantation, fertilizer management with and without briquette, problems in paddy, yield etc. Before the implementation of programme KVK getting support from Agriculture Department.

Application of Urea + DAP Briquette

Proper spacing for use of Urea Briquette

Increase in No. of Tillers

II. Methods And Material

Rice is being grown in Northern part Pune district on large scale. Major area under rice cultivation is in Junnar,

Ambegaon, Khed, Maval & Mulshi Tahasils in the jurisdiction of KVK. Rice is being grown traditionally .The yield obtained are at low levels due to use of traditional varieties, lack of recommended management practices. In this situation KVK has taken the lead to enhance the productivity of rice crop and also uplifting the farmers economic status.

KVK has under taken survey of rice growing villages in Junnar Tahsil. Group discussions with rice growing farmers were arranged to understand the problems in rice cultivation. Khamgaon village was selected for conducting assessment of Use of Urea + DAP Briquette in rice cultivation which is 8 km away from Junnar Tahshil. In Khamgaon village major crop is rice and annual rainfall is near about 3500 mm. In this village farmer were growing rice by traditional method in low land area. KVK conducted the OFT by using recommended technology of four fold rice cultivation, which covers recycling of crop residues (Paddy), Use of green manures (Glyricidia), Plantation of seedling in proper spaces (15 x 25 cm or 20 x 25 cm) and application of Urea + DAP Briquette (170 kg/ ha.).

III. Observations

The observation tare taken for this assessment are Seed rate, No. of seedling planted per hill, No. of tillers per plant, fertilizer use, yield B : C ratio etc are taken on both conventional Method and assessment trial by KVK. Yield and return are found higher in assessment trial as compared to conventional method. This rice cultivation technique is helpful for healthy growth of seedlings at initial stage due to application of silicon through use of rice plant residues. Also use of *Glyricidia* leaves is helpful in enriching the soil with organic carbon. It is again helpful for reduction in application of nitrogenous fertilizers. . After transplanting of seedling urea briquettes 67 kg per acre were applied in rice field one briquette at the center of each square. Urea briquette application resulted into better availability of nitrogen & phosphorus to the plants and also minimizes the losses due to volatilization and leaching.

Particulars	**Traditional Method/acre**	**Four fold rice cultivation/acre**
Seed	30 kg	16 kg
No. of seedling planted per hill	10 -12	2-3
Fertilizer used kg	Urea 1oo kg .50 kg DAP	Urea +DAP Briquette 67 kg
No. of tillers per plant	10-12	20-25
Yield per acre	11.2 q/acre	15.6 q/acre
Cost of cultivation (Rs.)	24700/-	23100/-
Gross Income (Rs.)	49200/-	66000/-
Net Income (Rs.)	24500/-	42900/-
B:C Ratio	1.98	2.85

IV. Conclusion

By adopting this technique yield obtained per unit area is increased. The intercultural operation becomes easier their by saving labor cost & time. The incidence of pest and diseases was minimized. The losses of fertilizers are minimized. This method of rice cultivation is much easy for weed management. The produce quality obtained is superior their by fetching better prices in market. The economic returns per unit area is more in Four Fold Rice Cultivation technique. soil health is maintained and minimizes the use of nitrogenous fertilizers .

The analysis of this assessment indicates the use of Briquettes will improve the no. of tillering and grain filling capacity of crop which will be resulted in increase in yield of Paddy as compared to traditional method. Since last year KVK have make briquettes of NPK and micronutrient mixtures which will be benefitted to farmers of Aster, Sugarcane, Marigold, Tomato and Cabbage, Cauliflower. With the help of these briquettes farmer getting better results and save their costing of fertilizer management.

V. Acknowledgment

The Assessment was taken under in collaboration with line department for financial support . ATARI Hyderabad Suport For conduction of trials , Krishi Vigyan Kendra, Narayangaon support for the carry out this work.

VI. REFERENCES

[1]. Krishi Darshani.MPKV.Rahuri:,Use of urea Briquette in paddy.43-46(2011)
[2]. Krishi Darshani.KKV,Dapoli:,Use of urea Briquette in paddy.39-42(2011)
[3]. Bhattarai, S. P.; Palada, M. C.; Midmore, D. J.; Wu, D. and Salas, R. On-farm evaluation of fertilizer briquettes and low-cost drip irrigation for smallholder vegetable production in Cambodia. Irrigation and Drainage, 60: 318-329. (2011)
[4]. Misra, C.; Mohanty, B. C.; Das, B. S. and Savant, N. K. Relationship between some selected soil properties and yield of transplanted rice fertilized with urea briquettes.(1995).
[5]. Savant, N. K. and Stangel, P. J. Deep placement of urea super granules in transplanted rice: Principles and practices. Fert Res., 25: 1-831990).