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Fertiliser Best Management Practices in Uttar Pradesh, India



R.K. Tewatia

The Fertiliser Association of India

New Delhi, India

Email: ags@faidelhi.org

Roadmap of Presentation

- Need and Relevance of FBMPs in UP
- Constrains in adoption of FBMPs
- FBMPs in Uttar Pradesh: FAI-IPi initiative
- Promising interventions identified for UP
- Suggestions
- Way forward



Need & Relevance of FBMPs in UP

- IFA Workshop in March 2007 highlighted the need of FBMPs in global contest.
- As follow up, IPI and FAI decided to make joint effort to promote FBMPs concept in India, (UP)
- Fertiliser use is skewed in favour of N (wide NPK Consumption ratio)
- Excessive use of N and P particularly in potato and sugarcane and inadequate use of potash
- Increasing deficiency of secondary and micro-nutrients particularly S & Zn
- Stagnation in foodgrain production and productivity
- Low and declining crop response of fertilisers



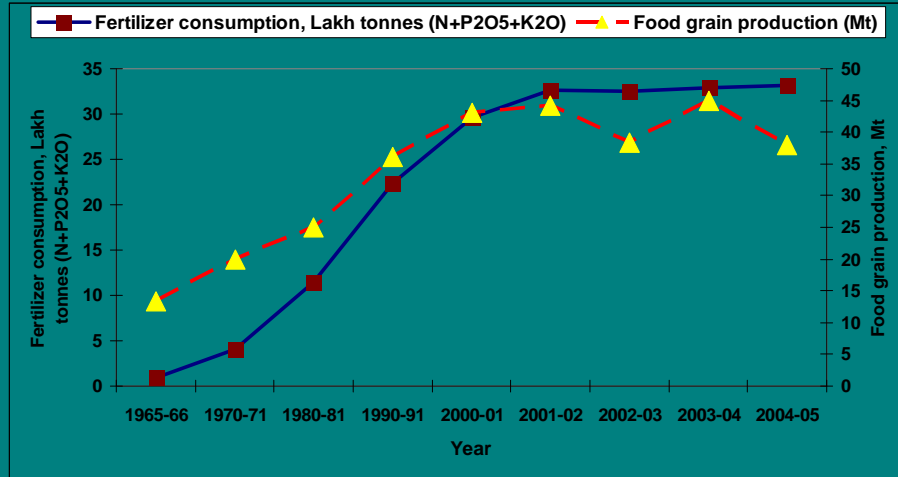
Fertiliser Consumption 2006-07

KG/ha

Item	N	P	K	Total	NPK Ratio
India	72	29	12	113	5.9:2.4:1
U P	112	35	7	153	16:5:1
Varanasi District	256	102	25	383	10:4:1
Banda district	16	8	neg.	24	-



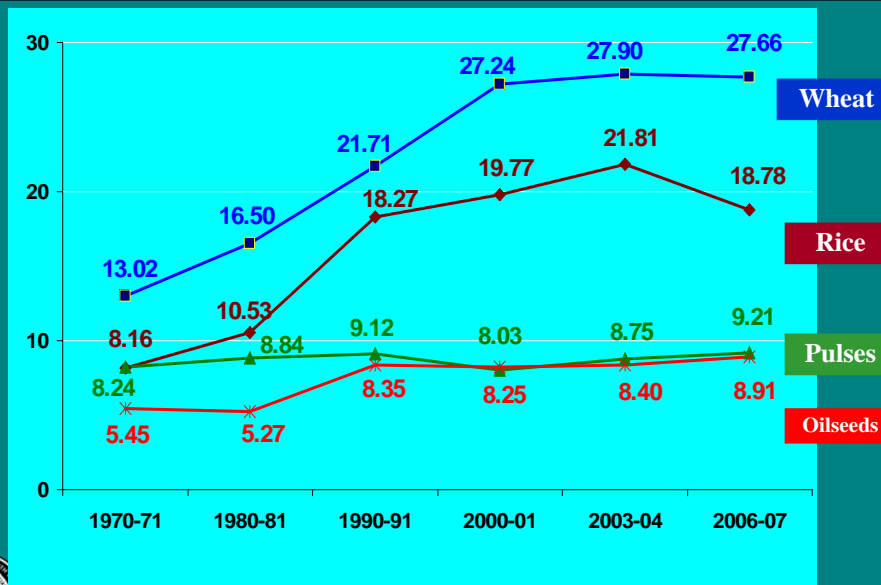
Growth of fertiliser consumption and food grain production in U.P.



One million = 10 lakhs



Stagnation in productivity of major crops (q/ha)



One tonne = 10 quintal (q)



Decline in Crop Response to Fertiliser

Period	Kg food grains per kg nutrients (NPK)
5 th Plan (1974 -79)	1:15.0
8 th Plan (1992 -97)	1:7.5
9 th Plan (1997 -02)	1:7.0
10 th Plan (2002 -07)	1:6.5
11 th Plan (2007 -12)	1:6.0



Constraints in Adoption of FBMPs

- Inadequate and unreliable soil testing facilities
- Outdated & improper fertiliser recommendations
- Poor awareness of farmers about balanced plant nutrition and water management
- Poor knowledge base of fertiliser dealers
- Inadequate availability of fertilisers particularly P&K fertilisers
- Weakening of Agriculture Extension Machinery
- Lack of appropriate policy for promoting FBMPs particularly value added products / more efficient fertiliser materials.



FBMPs in UP: FAI-IPI Initiative

- IPI initiated a number of activities in India to promote BFU in collaboration of FAI, ICAR, SAUs
- To address the problem of inefficient fertiliser use, FAI in collaboration with IPI decided to organise a Round Table on FBMPs in UP
- The objective of RT was to bring all stake holders at common platform and discuss benefits & challenges in adoption of FBMPs
- UP was chosen for conference because:
 - UP is the most important state of India from fertiliser and agriculture point of view
 - Unbalanced and inefficient use of fertiliser is prevalent throughout the state
 - Crop response to fertiliser and farmers profitability is declining
 - Research and extension infrastructure is underutilised
 - Wide gap between potential yield & actual yield at farmers field
 - Poor knowledge of farmers about FBMPs



Share and Ranking of UP in All India Fertiliser & Crop Production

Crop	% share	Rank
Fertiliser Use	17	1 st
Foodgrains	19	1 st
Wheat	35	1 st
Rice	12	2 nd
Pulses	16	1 st
Sugarcane	45	1 st
Potato	42	1 st
Vegetable	16	1 st



Comparative Productivity of Major Crops (2005-06)

(t /ha)

Crops	India	Best State	UP	Highest in UP	Lowest in UP
Wheat	2.62	4.18 Punjab	2.63	3.61 Meerut	1.02 Sonbhadra
Rice	2.10	3.87 Karnataka	2.0	2.32 Barabanki	0.78 Hamirpur
Maize	1.94	4.1 A.P.	1.20	2.21 Kaushambi	0.57 Jhansi
Bajra	0.80	1.49 M.P.	1.43	1.89 Firozabad	0.66 Sitapur
Pulses	0.60	0.81 U.P.	0.81	1.39 Kanpur Dh.	0.47 Saharanpur
Oilseeds	1.00	1.62 Tamilnadu	0.99	1.56 Mathura	0.25 St. Ravidas Nagar

Main Features of Round Table

- The programme was inaugurated by Agriculture Production Commissioner, UP.
- Principle Secretary (Agri), UP; Director, IPI & DDG, FAI addressed the delegates at the inaugural session
- Active participation from top officials from State Deptt. of Agriculture; Scientists from State Agril. Universities & ICAR Institutes; Representatives from Fertiliser Companies; FAI & IPI
- Excellent presentations by experts and very fruitful discussions





Content Coverage

- **Seven brief presentations were made in the forenoon session covering following topics**
 - FBMPs - Global Context
 - Essence of FBMPs
 - Component of FBMPs
 - Typical Cropping Systems, Nutrient Consumption & requirement of UP
 - Fertilizer use, recommendations and nutrient balance
 - Current FBMPs Activities in UP
 - Way forward for communication, Education and Pilot Demonstration for Adopting FBMPs in UP
- **Delegates were divided in two working groups in afternoon session to discuss:**
 - Prospects of FBMPs in UP – Working Group-I
 - Ways and means for delivering FBMPs knowledge to extension workers. - Working Group-II



Promising Interventions Identified

- **Nutrient Management**
 - Nitrogen Management in rice using LCC
 - Use of neem coated urea in rice
 - Proper time of fertiliser application in sugarcane
 - Cut in fertiliser dose in potato belt (Agra region) having high P buildup
 - Split application of K in wheat
 - Crop residue management with bio inoculants
- **Precise fertiliser Recommendations**
 - 3 sets of recommendations based on farmers affordability
 - Fertiliser recommendations should be based on 5 categories of fertility (very low, low, medium, high and very high) instead of existing 3
 - Ready beconer for N,P and K for major crop viz paddy, wheat & sugarcane
- **Assessment of nutrient mining and Monitoring of Soil Health through INM**
- **Sowing of wheat & sugarcane simultaneously using furrow irrigated raised bed planter**
- **Laser land leveling for higher water and nutrient use efficiency**



Suggestions

- A project on FBMPs should be initiated in UP which can serve as a model for India/Asia.
- Considering the vast area of state, the proposed project should be undertaken at zonal / district level
- The project should target on dominant crop of particular area
 - Sugarcane for Lucknow
 - Paddy for Varanasi
 - Paddy & Sugarcane for Gorakhpur
 - Potato/oilseed/pearlmillet for Agra division
- The focus of FBMPs should be on nutrient management but each nutrient to be dealt separately
- NPK should be taken first & therefore, S & Zn may be included



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Suggestions

- Farmers need to be educated/trained to increase their awareness and adoption of FBMPs
- Adequate and timely availability of all types of fertilisers needed in particular area must be ensured
- Special emphasis should be given on dealers training to convert them from seller to specialist
- Creating a forum involving all stake holders to undertake common FBMPs programme like demonstrations, soil testing campaigns, field days, soil health programmes to promote the concept of FBMPs.
- A 4 members subgroup was formed to work out details and come out with tangible products with regard to the prospects FBMPs in UP



Way Forward

- To identify the practices which are urgently needed as all the suggestions/interventions can not be taken up
- Type of activities to be under taken & area of operation of the proposed project will depend on the availability of funds
- FAI will be able to execute the project at the competitive cost with the cooperation and support from its member companies, state department of agriculture, SAUs and ICAR
- FAI is exploring financial support from its member companies and international organizations, like IFA, IPI, IPNI and TSI.

