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## DEPARTMENT OF AGRONOMY

COLLEGE OF AGRICULTURE

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**Dr. B. S. Mahapatra**

(Ph.D. Pantnagar, Post Doc. Reading, UK)

*Professor*

and

*Chief Agronomist, Cropping Systems Research*

NO. CA/Agron/1211  
Dated: 14.06.07

Mr. A. K. Guin  
Divisional Manager  
Elegant fashion Fiber Chemicals Limited  
D - 54 A, Defence colony, Jajmau  
Kanpur - 208 010

**FAX : 0512 - 2404023**

Dear Mr. Guin,

This has reference to the project of Elegant Fashion Fiber Chemicals Ltd. in operation at this institute with effect from October, 2006. Kindly find enclosed herewith the half yearly progress report of the experiments (rabi 2006-07) on wheat crop conducted at Pantnagar and farmers field conditions for necessary action at your end.

Thanking you, with regards.

Yours sincerely,

  
(B. S. MAHAPATRA) 14.6.07

Encl: Copy of the report.

CC: Director Research, GBPUA&T, Pantnagar with a copy of the report for information please.

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## **Half yearly progress report 2006-2007 (Rabi Season)**

**Project title: "Testing of Organic fertilizer (Jinong) at Seed Production Centre and farmers field"**

**Funding agency: "Elegant Fashion Fiber Chemicals Ltd."**

### **Project Leader**

Dr. B. S. Mahapatra

Professor Agronomy

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### **General Information**

#### **Experiment I.\***

Site : Seed Production Centre, GBPUA&T, Pantnagar  
Variety : UP 262  
Date of sowing : 27-11-2006  
Plot size : 10 m × 7 m

\* Experiment was conducted in pure organic mode.

#### **Experiment II \*\***

Farmers Name : Sri. Kunvar Singh  
Site : Village Behra, Milak, Rampur (U.P.)  
Variety : PBW 343  
Date of sowing : 16-11-2006  
Plot size : One Acre

\*\* Experiment was conducted with farmer's practice i.e. crop was fertilized with 150 Kg N/ha and 60 Kg P<sub>2</sub>O<sub>5</sub>/ha through urea and DAP

## Treatment details

### Step 1:

Jinong Liq. 750 ml. and Jinong Seaweed 750 g. To be added in the soil for making the soil ready for sowing. It can be mixed with sand for easy spreading.

### Step 2:

Seeds should be dipped in required Jinong water (3 ml Jinong liq. : 1 ltr water ratio) for thirty minutes before sowing.

### Step 3:

First top dressing with 500 ml Jinong and 250 g seaweed, mixed with sand for easy spreading.

### Step 4:

Second top dressing with 500 ml Jinong and 250 g seaweed, mixed with sand for easy spreading.

### Step 5:

Foliar application with 2 ml/ 2.5 ml. Jinong Liq. and 1 g. seaweed per liter of water to be mixed & sprayed.

### Step 6:

Foliar application with 2 ml. /2.5 ml. Jinong Liq. and 1 g. seaweed per liter of water to be mixed & sprayed.

## Experimental Results

**Experiment I: Experiment conducted at Seed Production Centre, GBPUA&T, Pantnagar**

**Table 1: Plant height at harvest and yield attributes of wheat as influenced by the Jinong organic fertilizer treatment**

Treatment	Plant height at harvest (cm)	No. of spikes/m <sup>2</sup>	Grains/spike	1000- grain weight (g)
Control	54.5	263	15.0	36.00
Treated	55.6	275	15.9	36.70

The Wheat crop, variety UP 262, was consciously influenced by Jinong (liquid and seaweed) organic fertilizer treatment. Data revealed (Table 1) that plant height increased from 54.5 (control) to 55.6 cm with Jinong treatment number of spikes/m<sup>2</sup>, grains/spike and 1000-grain weight were higher, i.e. 275, 15.9 and 36.7 g in treated plots compared to control plot where the values were 263, 15.0 and 36.0 g, respectively.

**Table 2: Yields and harvest index of wheat as influenced by the Jinong organic fertilizer treatment**

Treatment	Grain yield (Kg/ha)	Straw yield (Kg/ha)	Biological yield (Kg/ha)	Harvest index (%)
Control	1739	2111	3850	45.17
Treated	1863	2202	4065	45.83

Data presented in Table 2 showed the slight increase in grain, straw and biological yields from 1739 to 1863, 2111 to 2202 and 3850 to 4065 kg/ha respectively, as compared to control. Harvest index was also higher (45.83) in treated plots.

**Table 3: Soil chemical properties at harvest as influenced by the Jinong organic fertilizer**

Treatment	Organic Carbon (%)	Available N (Kg/ha)	Available P (Kg/ha)	Available K (Kg/ha)
Control	0.737	267	19.1	161
Treated	0.773	274	19.0	164

Soil organic carbon, available N and K content in soil after harvest of wheat crop were improved with Jinong treatment (Table 3). Soil organic carbon increased from 0.737 to 0.773 (%), available N and K from 267 to 274 kg/ha and 161 to 164 kg/ha, respectively with the treatment as compared to control. Only the value of available P decreased slightly in treated plots compared to control i.e. from 19.1 to 19.0 kg/ha.

### **Experiment II: Experiment conducted at farmer field with farmer's practice**

**Table 1: Plant height at harvest and yield attributes of wheat as influenced by the Jinong organic fertilizers at farmers field**

Treatment	Plant height at harvest (cm)	No. of spikes/m <sup>2</sup>	Grains/spike	1000- grain weight (g)
Control	58.9	369.3	17.5	38.20
Treated	60.2	371.0	17.9	38.83

Plant height at harvest and yield attributes of wheat crop variety PBW 343 grown at farmers field were influenced by the treatment with Jinong (liquid and seaweed) organic fertilizer (Table 1).

Plant height at harvest was found to be little higher (60.2 cm) in Jinong and seaweed treated plots compared to control (58.9 cm). Number of spikes/m<sup>2</sup>, grains/spike and 1000-grain weight showed same trend and recorded from 369.3 cm to 371.0 cm, 17.5 to 17.9 and 38.20 g to 38.82 g respectively due to Jinong organic fertilizer treated plot over control.

**Table 2: Yield and harvest index as influenced by Jinong organic fertilizer at farmers field**

<b>Treatment</b>	<b>Grain yield (Kg/ha)</b>	<b>Straw yield (Kg/ha)</b>	<b>Biological yield (Kg/ha)</b>	<b>Harvest index (%)</b>
<b>Control</b>	3903	6127	10030	38.93
<b>Treated</b>	4107	6347	10454	39.30

Data from (table 2) revealed that all grain, straw and biological yields increased in Jinong treated plot. Grain, straw and biological yield were 4107, 6347 and 10454 kg/ha respectively in treated plots compared to 3903, 6127 and 10030 kg/ha in control. Harvest index was also found to be comparatively higher (39.30 %) in treated plots compared to control.

**Table 3: Soil chemical properties at harvest as influenced by Jinong organic fertilizer**

<b>Treatment</b>	<b>Organic Carbon (%)</b>	<b>Available N (Kg/ha)</b>	<b>Available P (Kg/ha)</b>	<b>Available K (Kg/ha)</b>
<b>Control</b>	0.707	252	15.2	145
<b>Treated</b>	0.723	264	16.6	153

Jinong organic fertilizers treatment improved the nutrient status at harvest of wheat, in terms of organic carbon, available N, P and K (Table 3). Amounts of organic carbon and available N, P, K were analyzed and found to be 0.723 %, 263.77, 16.58 and 153 kg/ha respectively in treated plots compared to control plot where the values were 0.707 %, 252, 15.2 and 145 kg/ha, respectively.

## Silent Achievements

1. Wheat crop treated with Jinong (liquid and seaweed) organic fertilizer improved plant height at harvest and yield attributing characters in both organic mode of cultivation and farmers practices.
2. Application of Jinong (liquid and seaweed) in wheat recorded 7.13 % and 5.23 % higher yield over control under organic mode of cultivation and farmers practice.
3. Soil chemical analysis showed that wheat crop treated with Jinong (liquid and seaweed) improved 4.88 %, 2.62 % and 1.86 % higher organic carbon, available N and available K over control under organic mode of cultivation, respectively.
4. Under farmer's practice, crop treated with Jinong (liquid and seaweed) recorded 1.6 %, 4.6 %, 9.2 % and 5.5 % higher soil organic carbon, available N, P and K, respectively.
5. The data obtained from experiments at University and farmers field conditions are preliminary. It needs validation at least for another two years.



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