CONTRIBUTIONS FROM PRIVATE COMPANIES

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The use of foliar fertilizers under rain-fed conditions.

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The objective of this study was to measure the effects of four foliar fertilization treatments on grain yield and its principal components. The commercial cultivar Baguette Premium 11 (winter type) was sown according to the no-till and para-till practices. A completely randomized block design with three replications was used. The treatments and their chemical and operational aspects are presented in Table 1.

Table 1. Treatments used in assessing the efficacy of foliar fertilizers under rain-fed conditions.

	Treatment	Application	Amount (L/ha)
T_0	Untreated		
T_1	BioForge® (antioxidants)	Anthesis	1.2
T_2	Flower Power® (B, Co, Mo, Zn)	Anthesis	2.4
T_3	Sugar Mover® + CoMo® (B, Mo) + (Co, Mo)	Double ridge	2.4 + 1.0
T_4	Sugar Mover® (B, Mo)	Double ridge	3.5

The mean values of the different measured traits are shown in Table 2 (no-till practice) and Table 3 (p. 32) (paratill practice).

Table 2. Comparison of four foliar fertilizer treatments on eight traits of non-till cultivated wheat. Means in a column with different letters are significantly different at 0.05 probability level (Duncan test). BY: biological yield, GY: grain yield, HI: harvest index, TKW: 1,000-kernel weight, GN: grain number, PN: plant number, SN: spike number, and SS: seed number/spike.

Treatment	**BY** (g/m^2)	GY (g/m^2)	HI (%)	TKW (g)	GN ($n°/m^2$)	PN ($n°/m^2$)	SN ($n°/m^2$)	SS ($n°$)
T_0	1,234.33 A	388.67 A	31.70 A	33.33 A	11,859.00 A	160.00 A	519.33 A	23.00 A
T_1	1,358.33 A	422.67 A	31.33 A	33.00 A	12,867.33 AB	151.00 A	512.33 A	25.67 A
T_2	1,461.33 A	457.67 A	31.40 A	31.67 A	14,447.00 B	175.67 A	614.67 A	24.00 A
T_3	1,318.33 A	416.67 A	31.80 A	32.33 A	12,850.67 AB	146.33 A	533.00 A	24.33 A
T_4	1,353.00 A	433.00 A	32.10 A	33.00 A	13,247.00 AB	151.67 A	559.67 A	24.00 A

No significant differences were noted between treatments for grain yield in both agronomical practices. However, the Flower Power® treatment during anthesis with the micronutrients B, Co, Mo, and Zn generated a significant increase in grain number/m^2 with respect to the untreated experimental unit in the no-till trial.

For the para-till experiment, the Flower Power® foliar fertilizer significantly increased the 1,000-kernel weight when compared to the control. In conclusion, both principal grain-yield components showed significant and positive changes in response to foliar fertilization.

Table 3. Comparison of four foliar fertilizer treatments on eight traits of paratill cultivated wheat. Means in a column with different letters are significantly different at 0.05 probability level (Duncan test). BY: biological yield, GY: grain yield, HI: harvest index, TKW: 1,000-kernel weight, GN: grain number, PN: plant number, SN: spike number, and SS: seed number/spike.

Treatment	BY (g/m^2)	GY (g/m^2)	HI (%)	TKW (g)	GN (n^o/m^2)	PN (n^o/m^2)	SN (n^o/m^2)	SS (n^o)
T_0	1,224.67 A	394.33 A	32.20 A	31.40 A	12,576.33 A	177.33 A	485.00 A	26.00 B
T_1	1,280.67 A	389.67 A	30.63 A	32.93 AB	11,758.67 A	167.33 A	544.33 A	23.00 AB
T_2	1,289.33 A	387.33 A	30.33 A	32.93 B	11,758.67 A	168.00 A	535.00 A	23.33 AB
T_3	1,247.33 A	400.33 A	32.10 A	31.87 AB	12,564.00 A	168.00 A	517.33 A	24.33 AB
T_4	1,231.67 A	359.67 A	29.50 A	31.17 A	11,537.67 A	164.33 A	528.33 A	22.00 A

ITEMS FROM AFGHANISTAN

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The 2007 harvest of wheat in Afghanistan was good, due to normal environmental conditions during both winter and spring. The extent of drought and high temperature was typical for Afghanistan. Consequently, yield levels were normal. Yellow rust levels on wheat were low to high at various testing sites. Cereal balance at the national level in 2007 is presented in Table1.

Table1. Cereal balance in Afghanistan in 2007.

Crop	Area ($x10^6$ ha)	Production ($x10^6$)	Surplus/deficit ($x10^6$ t)
Irrigated wheat	1,071	2,878	
Rain-fed wheat	1,395	1,606	
All wheat	2,466	4,484	-433
Rice	170	370	-93
Maize	137	360	0
Barley	236	370	0
All cereals	3,009	5,584	-526

The overall wheat price was $250/t in October 2006 and increased to $320/t, an increase of 13.4% on the previous month and 29.8% increase on the same month of last year.

Wheat is the number one staple crop in Afghanistan and is grown almost everywhere in the country. Winter wheat is grown in central areas where winters are cold. A small number of hectares of spring-sown wheat is grown in areas where it is too cold for winter wheat or when autumn planting is missed. Mainly spring and facultative types are sown in the autumn in most parts of the country. Most of the rain-fed crops are grown in early spring. Maize and rice are important summer cereal crops in Afghanistan, but because of two decades of unrest and 5 years of drought, maize and rice have received less attention. Six-row barley is grown and mainly used for feeding horses in the northern provinces where they are used for transport. Hulless barley is used in central areas as food either direct or mixed with faba bean for the preparation of special breads

The seed policy now calls for certified seed production to be grown by farmers. The total amount of certified wheat seed produced in 2007 was 7,900 t by NGOs, and the public and private sectors. Five NGOs, six Improved Seed Enterprises, Agriculture Research Institute of Afghanistan (ARIA) farms, and 12 recently established, private seed enterprises in 10 provinces with initial support from the FAO continue to produce certified wheat seed. Breeder and foundation seed in 2007 was produced by implementing partners such as the FAO and ARIA.