		Wheat Trials
1	Farmer Name	Ali Bux Mahar
2	Mobile #	0303-3707991
3	Village	Bhettor
5	variety	Pak Watun
6	Date of bowing	7/12/2012
9	Last crop	Rice
Land prepration	cultiwetr clock	Lelver clock
Time	1.5	1
Seed / accor	60 KGs / accor	
Ferlitizer DAP	50 KGS	
Urea	60 kg Date 29-12-2012	60 kg date 24-1-2013
water	1-date 29-12-2012	2nd -date 24-1-2013
laber Chrgz	400	400
Thrshar	per Man 3 kg-40 Kgs	
Spary Date and- Ml		
A-PLOT (Size one kanal)	B-PLOT (Size one kanal)	C-PLOT(Size one kanal)
GSF-2	GSF-2	GSF-2
Spary Date and- quantity		
600 ML Date 29-12-2012	1200 ML-Date 22-12-2012	1800 ml-date 23-12-2012
600 -ML-Date-2-2-2013	1200-ml Date-2-1-2012	1800 ml-date-27-12-2012
600 ml date 16-3-2013	1200 ml date -17-1-2012	1800 ml date 7-1-2013
600 ml date 11-4-2013	1200 ml date -22-2.2013	1800 ml date 29-1-2013
	1200 ml date -26-3-2013	1800 ml date 27.2.2013
	1200 ml date 11.4.2013	1800 ml date 19.3.2013
Yield Man Per Plot date 28/4/2013		
5-Man 7 kg 1656 Kg/acre (41.4 Monuds/acre)	5 ma 2 kg 1616 Kg/acre (40.4 Mounds/acre)	5 Man 11 kg 1688 Kg/acre (42.2 Mounds/acre)

	SSWO	
Rootarvetr clock		Expenses Rs,
1		4000
		2100
		4000
60 KG Date 2-18-2013		**4500**
3rd Date 2-18-2013	**date 5.4.2013**	**0**
400	**400**	**1600**
		1200
D-PLOT(Size one kanal)	**E-PLOT (Size one kanal)**	**F-PLOT(Size one kanal)**
GSF-1	**GSF-1**	**GSF-1**
600 ml date 7-1-2013	**1200 ml.date 22-12-2012**	**1800ml-17-12-2012**
	1200 ml-date-2-1-2012	**1800 ml date 27-1-2013**
	1200 ml-date-17-1-2013	
600 ml date 4.2.2013	**1200 ml-date 15-2-2013**	**1800 ml date 29-2-2013**
600 ml date 4.3.2013	**1200 ml date 19-3-2013**	**1800 ml date 27.3.2013**
600 ml date 8.4.2013	**1200 ml date 14.4.2013**	**1800 ml date 15.4.2013**
6-Man 20 kg **2080 Kg/acre (52 Mounds/acre)**	**5- Man-18kg 1744 Kg/acre (43.6 Mounds/acre)**	**6- Man 13Kg (2024 Kg/acre (50.6 Mounds/acre)**
	Expences Rs,	17400
	Yield Man	33500
	InCome	16100

Wheat Crop Trial

Application of GSF2 and GSF1 spray on wheat crop

Location= Chak no 249 GB Tehsil and District Toba Tek Singh

Date of Sowing= 20-11-2012

Cropping Pattern= Fallow-Wheat

Net Plot size= 1Kanal

Soil pH=8.5

Plot Layout

A	B	C
F	E	D

Date, Quantity and No of GSF2 & GSF1 spray applications

	GSF2			GSF1		
	No of spray	Total Quantity(ml)	Date	No of spray	Total Quantity(ml)	Date
Plot A	1	200	23-12-2012	1	200	22-1-2013
Plot F	1	200	23-12-2012	1	200	22-1-2013
Plot B	2	400	13-12-2012	2	400	12-1-2013
			23-12-2012			22-2013
Plot E	2	400	13-12-2012	2	400	12-1-2013
			23-12-2012			22-2013
Plot D	3	600	3-12-2012	3	600	12-1-2013
			13-12-2012			22-2013
			23-12-2012			12-1-2013
Plot c	3	600	3-12-2012	3	600	2-1-2013
			13-12-2012			12-1-2013
			23-12-2012			22-2013

Final Trial Data & Results

	Plant Height (Inch)	No of leaves/ Plant	Plant population/ m^2	wt of straw +grain(Kg)/ m^2	wt of grain (g)/m^2	1000 grain wt(g)	Regular fertilizer dose(Urea+DAP)	Regular fertilizer cost/acre	Estimated yield monds/acre
Plot C	37.9	8	465	1.6	480	50	Full	8600	49
Plot D	36.3	7	412	1.2	298	36	Half	4300	30
Plot B	37.5	8	449	1.5	466	47	Full	8600	47
Plot E	35.8	7	408	1.1	289	34	Half	4300	29
Plot A	37.4	7	455	1.3	459	42	Full	8600	46.5
Plot F	35.3	7	406	0.9	276	31	Half	4300	27.5

Impact Assessment of Liquid Fertilizers on Wheat

Wheat demo plots with liquid fertilizer application

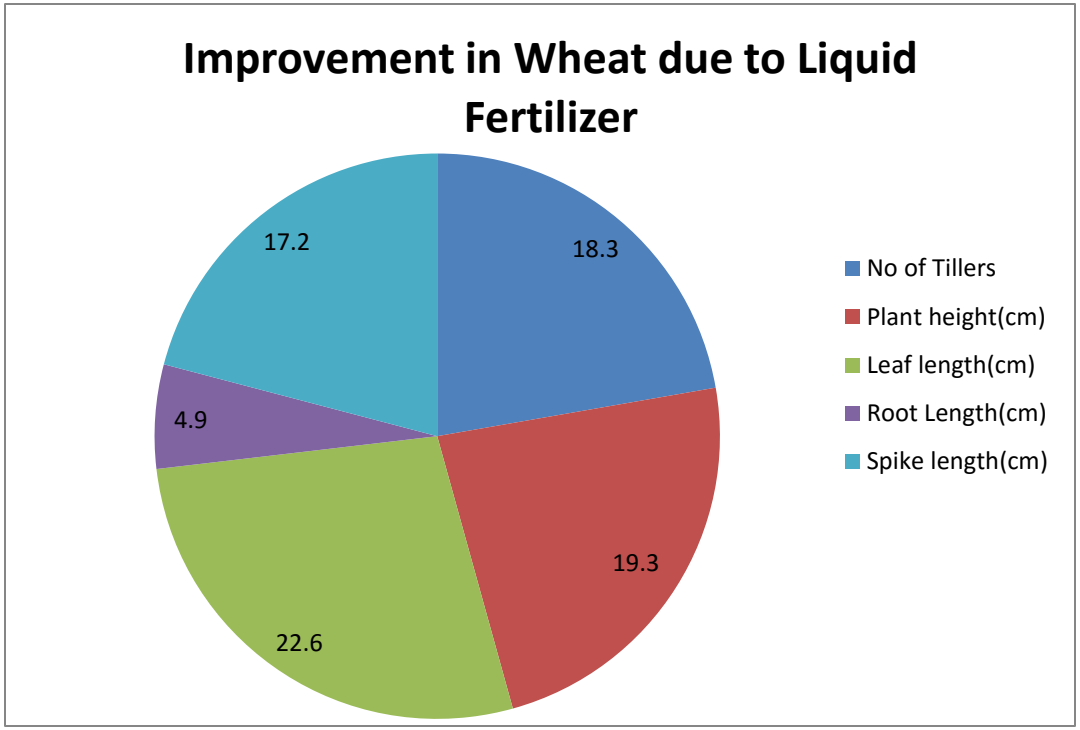
Plot id#	Former Name	Adress Village/UC	Verity	No of Tillers	Plant height(cm)	Leaf length(cm)	Root Length(cm)	Spike length(cm)
K.G 1	M.yar	Lakai/kaisaghar	Hashim	9	113	36	13	27
K.G 2	Meherban	Ghundikuna/kaisaghr	Hashim	9	102	32	10	23
K.G3	Amanullah	Ghundikuna/kaisaghr	Sehar	8	110	37	11	25
K.G4	Khwaja khan	Ghundikuna/kaisaghr	Sehar	8	99	33	10	24
K.G5	Azam khan	Lakai/kaisaghar	Sehar	9	107	30	14	24
K.G6	Umar khan	Ghundikuna/kaisaghr	Aas	9	104	35	11	25
K.G7	Azeeem khan	Niazikot/Kaisaghar	Aas	9	109	35	14	26
K.G8	Mir zaman	Lakai/kaisaghar	Hashim	8	114	36	13	27
K.G9	Khwaidad	Niazikot/Kaisaghar	Aas	9	111	34	15	24
k.G11	Qamarzaman	Ghundikuna/kaisaghar	Aas	8	110	38	10	24
S.G1	SardarGul	Ibrahimkhel/shinghar	Sehar	9	104	32	11	22
S.G2	Qadeem	Ibrahimkhel/shinghar	Sehar	9	112	33	10	25
Total				**104**	**1295**	**411**	**142**	**296**
Average				**8.67**	**107.92**	**34.25**	**11.83**	**24.67**

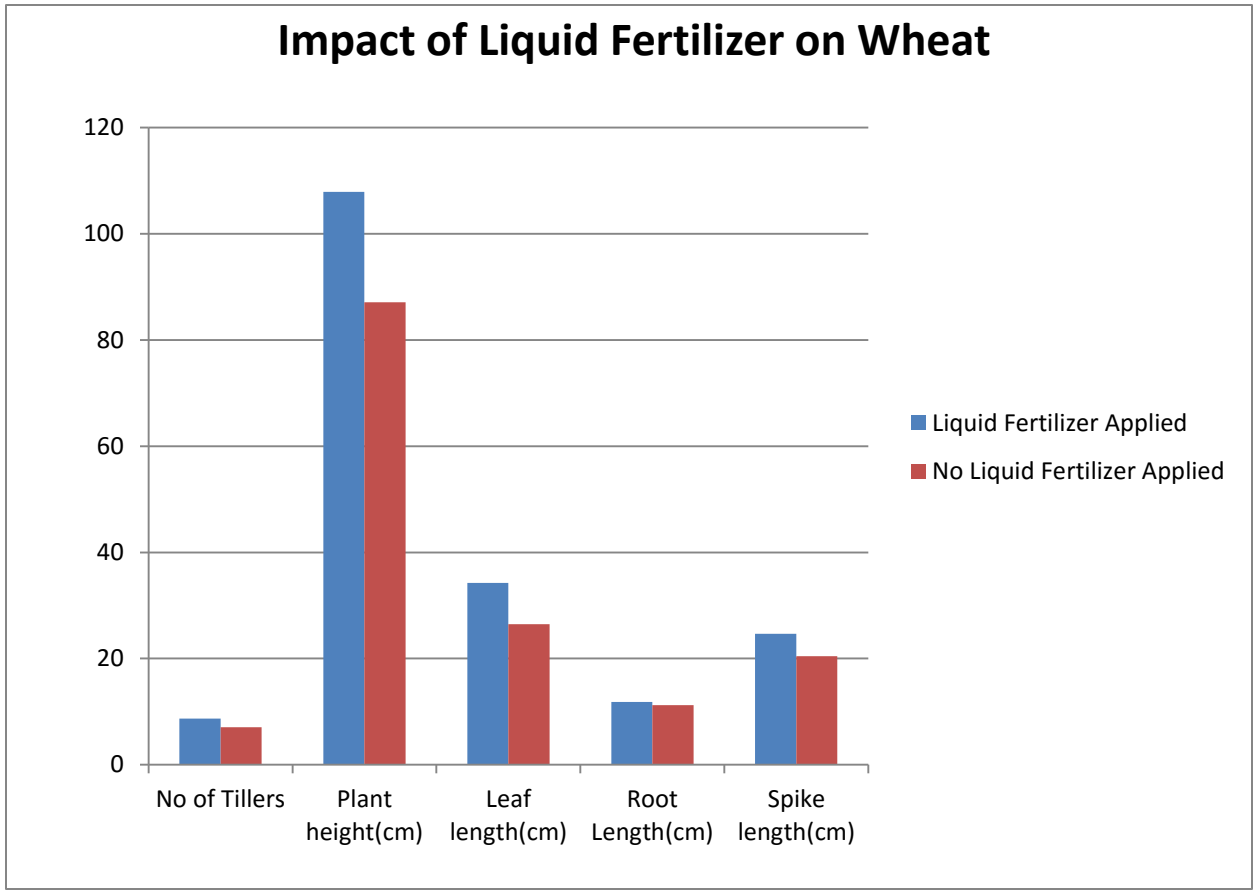
Wheat demo plots of improved seeds with no fertilizer application

Plot id#	Former Name	Adress Village/UC	Verity	No of Tillers	Plant height(cm)	Leaf length(cm)	Root Length(cm)	Spike length (cm)
K.G 1	M.yar	Lakai/kaisaghar	Hashim	7	90	27	11	21
K.G 2	Meherban	Ghundikuna/kaisaghr	Hashim	6	88	29	9	22
K.G3	Amanullah	Ghundikuna/kaisaghr	Sehar	6	91	26	10	20
K.G4	Khwaja khan	Ghundikuna/kaisaghr	Sehar	8	87	27	13	22
K.G5	Azam khan	Lakai/kaisaghar	Sehar	7	84	27	10	21
K.G6	Umar khan	Ghundikuna/kaisaghr	Aas	7	89	26	11	20
K.G7	Azeeem khan	Niazikot/Kaisaghar	Aas	7	91	26	12	21
K.G8	Mir zaman	Lakai/kaisaghar	Hashim	8	81	24	10	20
K.G9	Khwaidad	Niazikot/Kaisaghar	Aas	8	83	26	12	20
k.G11	Qamarzaman	Ghundikuna/kaisaghar	Aas	8	87	28	12	19
S.G1	SardarGul	Ibrahimkhel/shinghar	Sehar	6	85	26	11	20
S.G2	Qadeem	Ibrahimkhel/shinghar	Sehar	7	89	26	14	19
Total				**85**	**1045**	**318**	**135**	**245**
Average				**7.08**	**87.08**	**26.50**	**11.25**	**20.42**

Comparative assessment of Liquid Fertilizers applied on Wheat Plot

Wheat	Liquid Fertilizer Applied	No Liquid Fertilizer Applied	Improvement in Percentage
No of Tillers	8.67	7.08	18.3 %
Plant height(cm)	107.92	87.08	19.3 %
Leaf length(cm)	34.25	26.5	22.6 %
Root Length(cm)	11.83	11.25	4.9 %
Spike length(cm)	24.67	20.42	17.2 %




Impact of Liquid Fertilizer on Wheat
120
100
80
60
40
20
0
No of Tillers
Plant height(cm)
Leaf length(cm)
Root Length(cm)
Spike length(cm)
Liquid Fertilizer Applied
No Liquid Fertilizer Applied

Wheat demo plot with fertilizer application



Successful germination with taller plants, long spikes and no weeds

Wheat plot with no fertilizer application



Successful germination, free of weeds but smaller in height than the above

GSF Trail Plots Detail

Treatments layout plan

Plot-7

Half regular fertilizer (urea, DAP etc)		
Date	GSF type	Quantity (ml/L)
11-Jan	2	15
11-Feb	1	15

Plot-5

Full regular fertilizer (urea, DAP etc)		
Date	GSF type	Quantity (ml/L)
2-Jan	2	15
26-Jan	1	15

Plot-3

Half regular fertilizer (urea, DAP etc)		
Date	GSF type	Quantity (ml/L)
21-Dec	2	7
31-Dec	2	15
11-Jan	2	15
26-Jan	1	15
5-Feb	1	15
25-Feb	1	15

Plot-1

Full regular (fertilizer (urea, DAP etc)		
Date	GSF type	Quantity (ml/L)
21-Dec	2	7
31-Dec	2	15
11-Jan	2	15
26-Jan	1	15
5-Feb	1	15
25-Feb	1	15

Plot-8

No use regular fertilizer (urea, DAP etc)		
Date	GSF type	Quantity (ml/L)
21-Dec	2	15
31-Dec	2	15
11-Jan	2	15
26-Jan	1	15
5-Feb	1	15
25-Feb	1	15

Plot-6 (Control)

Full regular fertilizer (urea, DAP etc)
No spray of GSF

Plot-4

Half regular fertilizer (urea, DAP etc)		
Date	GSF type	Quantity (ml/L)
26-Dec	2	15
5-Jan	2	15
20-Jan	1	15
10-Feb	1	15

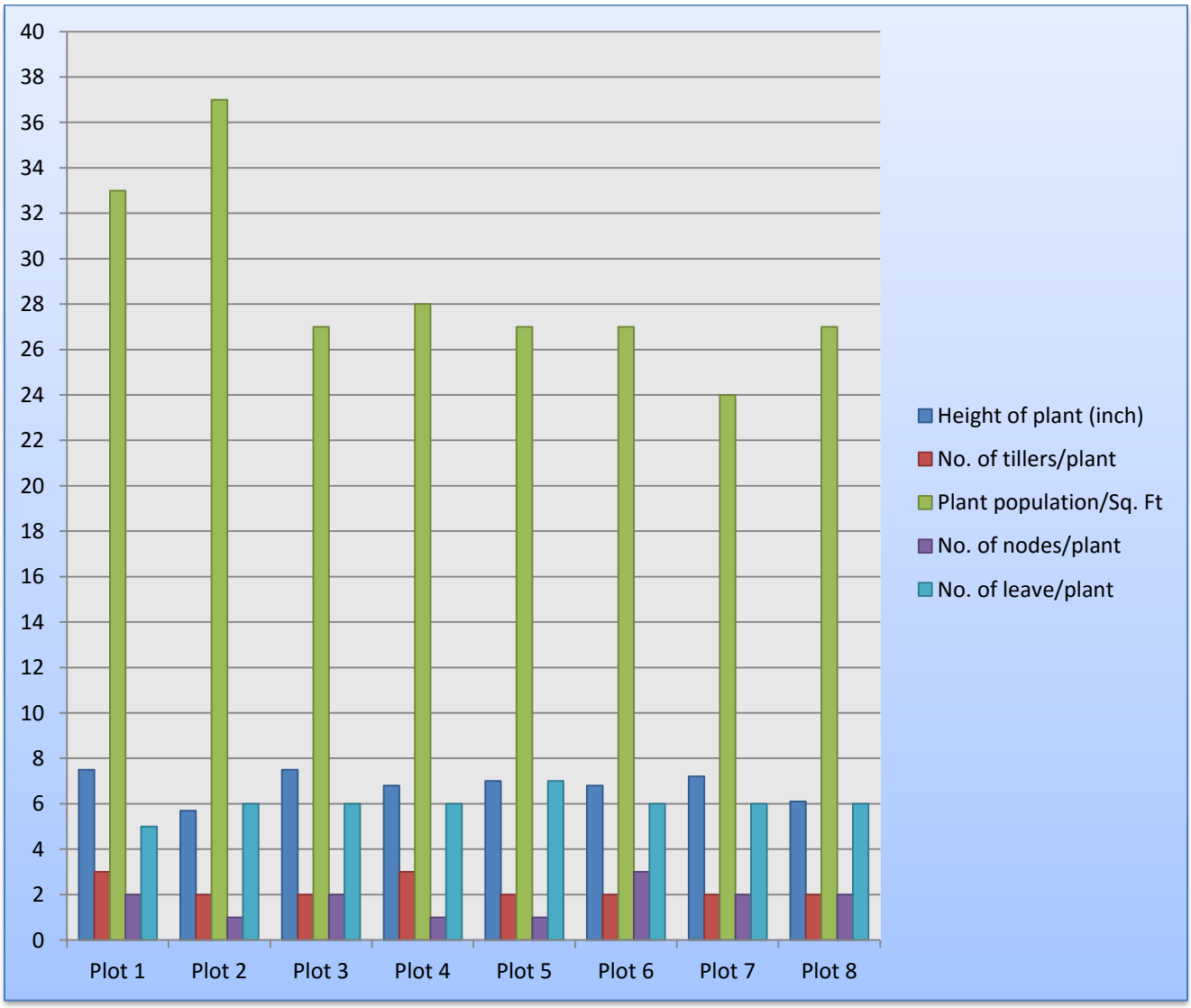
Plot-2

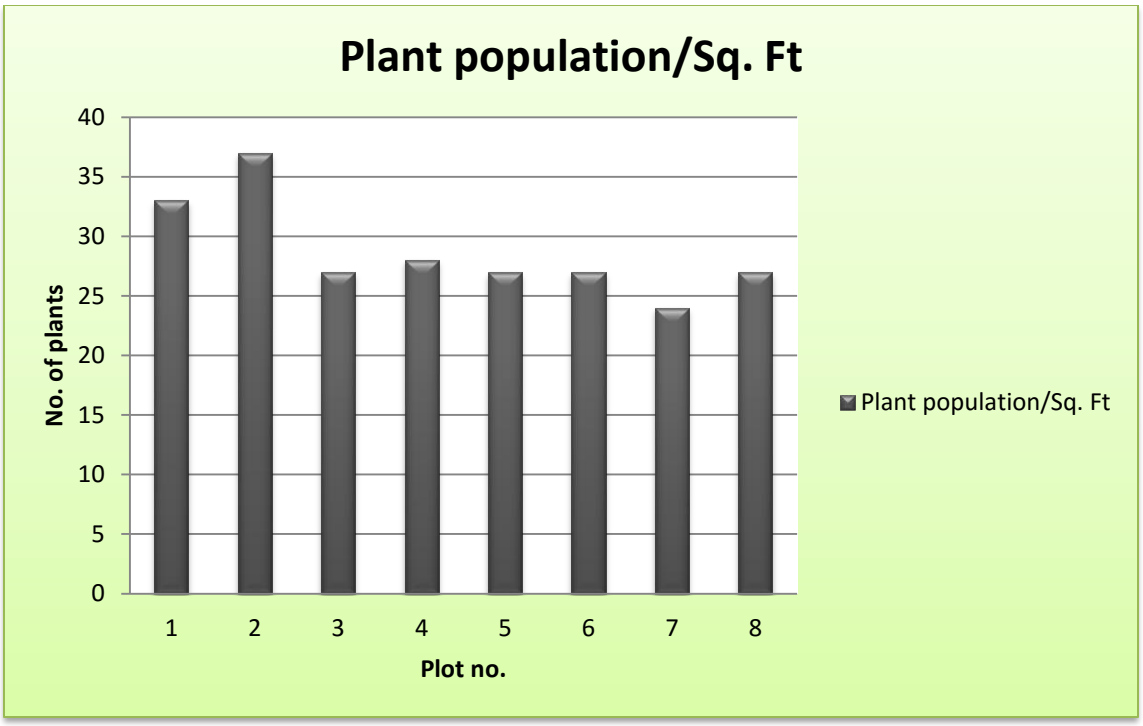
Full regular fertilizer (urea, DAP etc)		
Date	GSF type	Quantity (ml/L)
26-Dec	2	15
5-Jan	2	15
20-Jan	1	15
10-Feb	1	15

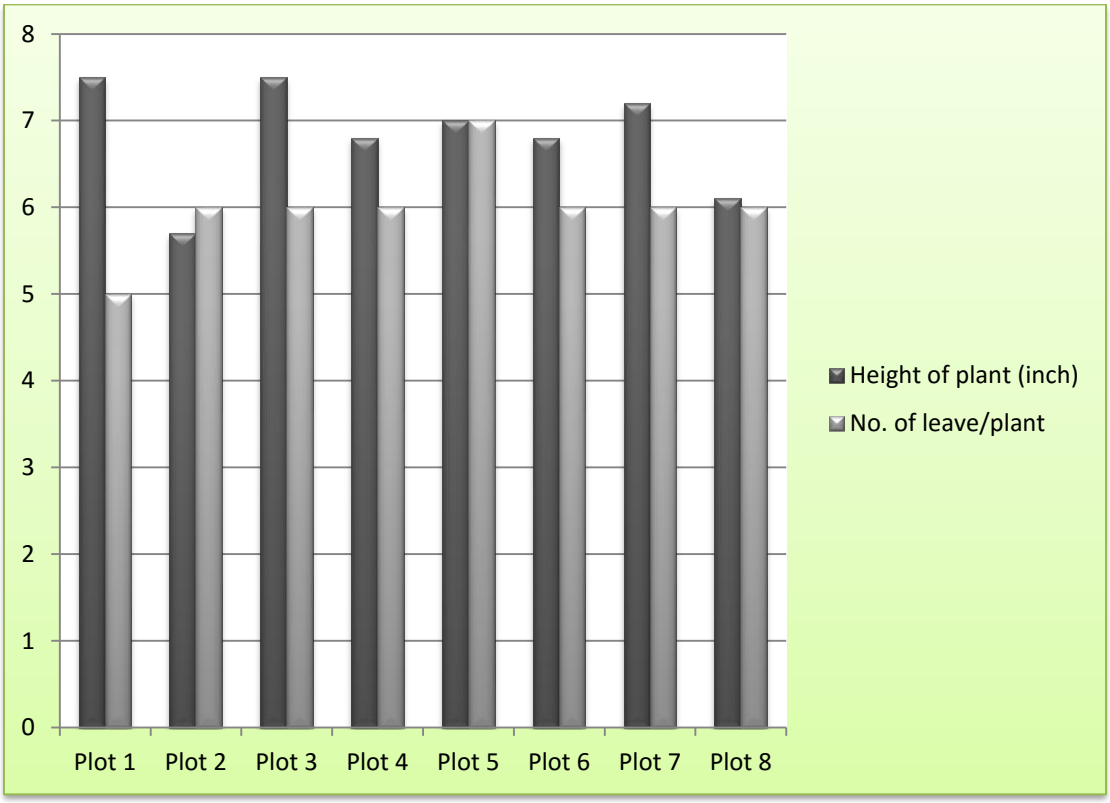
Initial parameters detail (Average values)

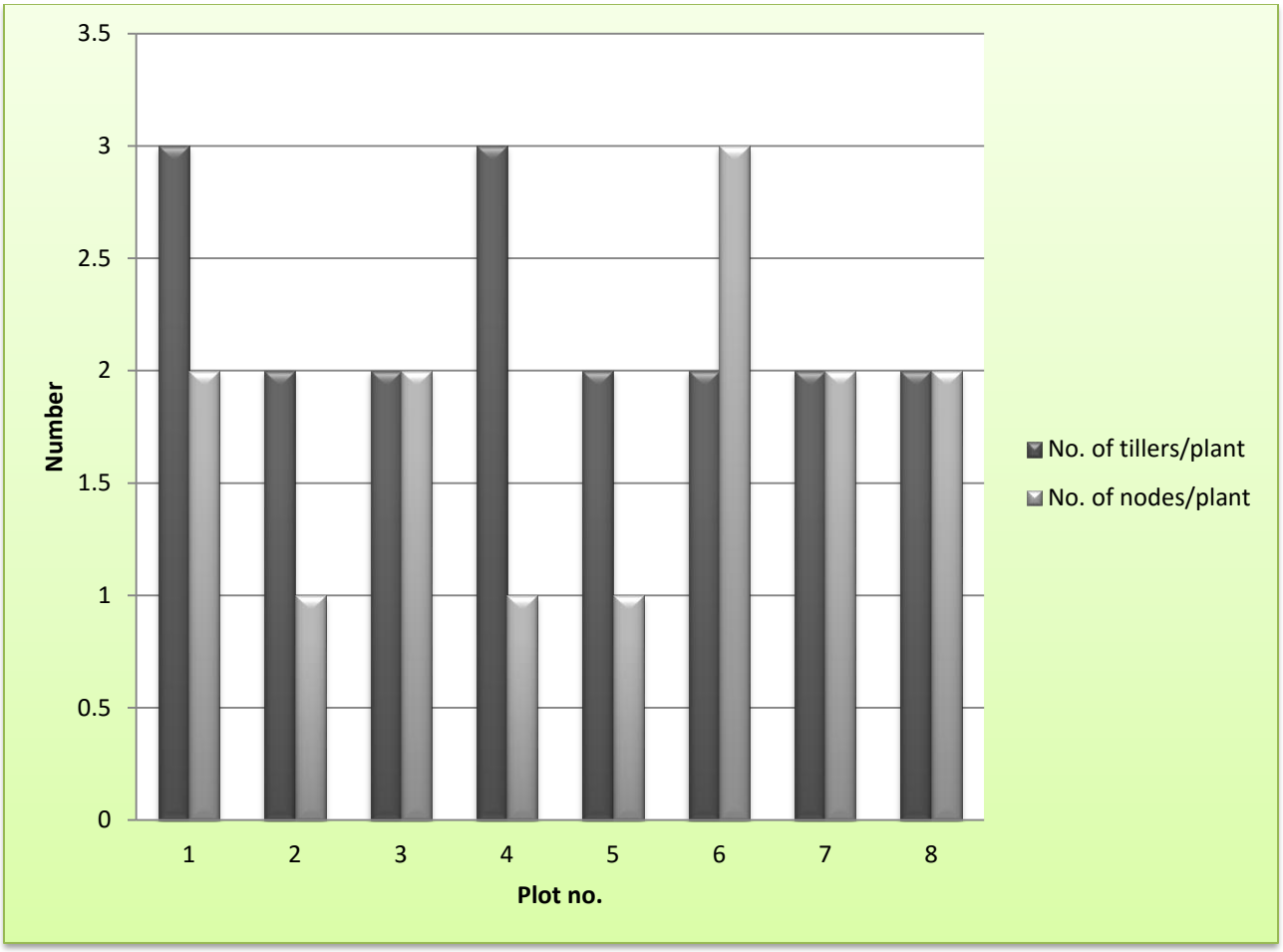
	Height of plant (inch)	Plant population/Sq. Ft	No. of tillers/plant	No. of nodes/plant	No. of leave/plant
Plot 1	7.5	33	3	2	5
Plot 2	5.7	37	2	1	6
Plot 3	7.5	33	3	2	6
Plot 4	6.8	27	3	1	6
Plot 5	7	37	2	1	7
Plot 6	6.8	27	2	3	6
Plot 7	7.2	30	2	2	6
Plot 8	6.1	28	2	2	6

Graph of GSF data (Initial parameters)




Plant population/Sq. Ft
40
35
30
25
20
15
10
5
0
No. of plants
1
2
3
4
5
6
7
8
Plot no.
Plant population/Sq. Ft


8
7
6
5
4
3
2
1
0
Plot 1
Plot 2
Plot 3
Plot 4
Plot 5
Plot 6
Plot 7
Plot 8
Height of plant (inch)
No. of leave/plant


3.5
3
2.5
2
1.5
1
0.5
0
Number
1
2
3
4
5
6
7
8
Plot no.
No. of tillers/plant
No. of nodes/plant

	Plant height (inch)	Plant population /Sq. Ft	No. of tillers/plant	No. of nodes/plant	No. of leave/ plant	Spike length(inch)	No. of spikelet/Spike	No. of grain/spike	1000 grain wt. (g)	Regular fertilizer	No of spray GSF 1	No of spray GSF 2	Regular fertilizer cost(Rs)/acre
Plot 1	36.3	27	2	2	6	4.2	16.8	45	23.7	Full	3	3	9150
Plot 2	33.8	27	2	1	6	4.52	17	53	37.7	Full	2	2	9150
Plot 3	37	33	3	2	5	4.6	17.8	45	41.1	half	3	3	4575
Plot 4	38.4	27	2	2	6	3.9	15.4	36	44.6	half	2	2	4575
Plot 5	36.2	37	2	2	7	4.18	16.8	45	40.8	Full	1	1	9150
Plot 6	35.8	27	2	3	6	4.2	16.8	46	37	Full	Control	Control	9150
Plot 7	38	28	3	1	6	4.4	17.6	47	37.9	half	1	1	4575
Plot 8	33.4	24	2	1	6	3.7	16.8	44	29.4	Zero	3	3	0

Estimated Yield mond/acre
13.46
28.65
33.3
23.57
36.5
25
36.5
23.5

Fruit plant liquid fertilizer application data collection

We applied liquid fertilizer GSF2 to fruit plants, which show good results as compared to the fruit plants to which fertilizer was not applied. As all the fruit plants are passing through juvenile period, there for we have no flowering and fruiting data. Fertilizer was applied to six orchards 50 plants/orchard,10 plants of each specie I.e apple, plum, apricot, almond and walnut. Plants which we have applied liquid fertilizer, shows very good vegetative growth with dark green, broad and large number of leaves. Fruit plants to which fertilizer was applied also bears more number of branches than the other fruit plants.

Fruit plants with fertilizer application

	Apple	**Plum**	**Apricot**	**Almond**	**Walnut**
No of leave	93	87	83	54	49
No of branches	13	11	11	9	7
Plant height(m)	2.3	2.00	1.8	2.4	0.8
No of buds	39	35	35	31	19
Deficiency symptoms	nil	nil	nil	nil	nil

Fruit plants with no fertilizer application

	Apple	Plum	Apricot	Almond	Walnut
No of leave	62	71	67	33	27
No of branches	5	5	6	4	3
Plant height(m)	1.2	1.4	1.1	1.3	0.6
No of buds	24	19	21	17	11
Deficiency symptoms	Stunted growth, pale yellow leaves,	Curled black spotted leaves, stunted growth	Curled leaves with dry tip	Slow growth, pale leaves,	Stunted growth, pale yellow leave, cluster of meristem tip

Assessment of Liquid Fertilizers Data from Chitral

1. Wheat demo plots treated with Farm yard manure and liquid fertilizer application

Plot id#	Former Name	Address Village/UC	Variety	No of Tillers	Area	Average Plant height(cm)	Leaf length(cm)	Root Length(cm)	Spike length(cm)
K.G 1	Khan Gul	Zhangbazar/ Chitral	Pir sabak 2005	5	2 Kanal	95	16	8	11
K.G 2	Mir salam	Moldeh/ Chitral	Pirsabak 2005	5	1 Kanal	99	21	10	23
K.G3	Shah Khan	Laspur/ Chitral	Local variety	3	1 kanal	72	8	8	----

2. Wheat demo plots of wheat with only Farm yard manure application

Plot id#	Farmer Name	Address Village/UC	Variety	Average No of Tillers	Area	Average Plant height(cm)	Average Leaf length(cm)	Average Root Length(cm)	Average Spike length(cm)
K.G 1	Maqbool	Zhangbazar/ Chitral	Pir sabak 2005	5	2 Kanal	79	10	6.5	7.6
K.G 2	Mir salam	Moldeh/ Chitral	Pirsabak 2005	5	1 Kanal	79	13	13	10
K.G3	Shah Khan	Sor Laspur/ Laspur	Local variety	1	1 kanal	55	5	5.3	----

3. Fodder demo Plots treated with Liquid fertilizer and Farm Yard Manure

Plot id#	Farmer Name	Address Village/UC	Variety	Area	Germination rate (%)	Production after First cut
K.G 1	Niaz uddin	Singoor/ Chitral	Alfa alfa	1 Kanal	75	------
K.G2	Muzafar ali	Sor Laspur/ Laspur	Alfa alfa	1 kanal	67	-------

4. Fodder demo Plots treated with only Farm Yard Manure

Plot id#	Farmer Name	Address Village/UC	Variety	Area	Germination rate (%)	Production after First cut
K.G 1	Niaz uddin	Singoor/ Chitral	Alfa alfa	1 Kanal	50	------
K.G2	Younus	Sor Laspur/ Laspur	Alfa afa	1 kanal	40	-------

5. Fruit plant treated with Liquid fertilizer and Farm Yard Manure

Plot id#	Farmer Name	Address Village/UC	Fruit plants	Area	Survival rate (%)	Fruit production
K.G 1	Talim Khan	Rumboor / Ayun	42	2 Kanal	71.4	------

6. Fruit plant treated with only Farm Yard Manure

Plot id#	Farmer Name	Address Village/UC	Fruit plants	Area	Survival rate (%)	Fruit production
K.G 1	Talim Khan	Rumboor / Ayun	40	2 Kanal	55	------

7. Vegetable demo Plots treated with Liquid fertilizer and Farm Yard Manure

Plot id#	Farmer Name	Address Village/UC	Area under vegetable	Survival rate (%)	Fruit production
K.G 1	Ziaullah	Krupricht / Chitral	1 kanal	85	------
K.G 2	Niaz uddin	Singoor/Chitral	0.5 kanal	75	------
K.G 3	Khurshid Ahmed	Zhangbazar/ Chitral	2 Kanal	82	-----
K.G 4	Mir salam	Moldeh/ Chitral	1.5 kanal	65	-----

8. Vegetable demo Plots treated with only Farm Yard Manure

Plot id#	Farmer Name	Address Village/UC	Area under vegetable	Survival rate (%)	Fruit production
K.G 1	Riaz Ahmed	Krupricht / Chitral	2 kanal	80	------
K.G 2	Khurshid ahmed	Zhangbazar/ Chitral	1 kanal	75	------
K.G	Niaz uddin	Singoor/Chitral	0.5 kanal	60	-----

Note:

1. Fodder crop production data will be available after first cut.
2. The liquid fertilizer has applied to 42 newly planted fruit plants and out of which 30 plants are successful.
3. Vegetable production data will be available after first harvest.