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Effect of residual fertility of preceding sweet corn crop on growth and yield of potato

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Abstract
An experiment entitled "Effect of integrated nutrient management in sweet corn-potato cropping sequence" was conducted during *kharif* and *rabi* season of 2014 to 2015 at Instructional Research Farm, Central Campus, Post Graduate Institute, Mahatma Phule Krishi Vidyapeeth, Rahuri. The experiment was laid out in a Randomized Block Design with three replications. The treatment consisted T_1 – 100% GRDF, T_2 - 75% RDN + 25% N through FYM, T_3 - 75% RDN + 25% N through VC, T_4 – 100% RDN + 25% N through FYM T_5 -100% RDN + 25% N through VC, T_6 – 125% RDN + 25% N through FYM and T_7 – 125% RDN + 25% N through VC for *kharif* sweet corn as a main plot treatment, whereas for *rabi* potato two sub plot treatment levels of GRDF viz., F_1 - 75 per cent GRDF and F_2 - 100 per cent GRDF replicated two times in split plot design resulting in seven treatment combinations replicated thrice during *kharif* season and fourteen treatment combinations during *rabi* season in RBD-split plot design replicated thrice. Among the INM treatments, the various fertilizer levels to preceding sweet corn crop significantly influenced T_1 - 100% GRDF was found superior in growth attributes of potato *viz*., plant height, number of leaves plant^{-1}, leaf area and dry matter plant^{-1} at all crop growth stages of potato during both the years of experimentation. The various fertilizer levels to preceding sweet corn crop significantly influenced T_1 - 100% GRDF was found superior in yield attributes of potato *viz*., medium tubers, big tubers, total tubers, weight of tubers per plant.
The various fertilizer levels to preceding sweet corn crop significantly influenced T_1 - 100% GRDF was found superior in tuber yield (280.21 and 286.96 q ha^{-1}) and haulm yield (12.31 and 13.52 q ha^{-1}) during both the years of *rabi* season experimentation. The experiment was conducted on same site without changing the randomization of the treatments for successive years.

Keywords: growth character, INM, sweet corn, vermicompost, yield attributes, yield

Introduction
Potato (*Solanum tuberosum*) is one of the most important non-cereal food crops in the world after wheat, rice and maize. It occupies a pre-eminent place amongst the crops and acknowledge as the "king of vegetables" due to its great utility. It provides a source of low cost energy to human diet. It is rich in starch, vitamin especially vitamin C, B and minerals. It also contains good amount of essential amino acids like leucine, tryptophan and isoleucine. It fulfils all the criteria for healthy foods and offers a great potential for increasing global food contribution. Potato relatively demands higher level of soil nutrients due to poorly developed and shallow root system in relation to yield. Potato based cropping systems an important role in improving the productivity of region due to fact that potato produces almost 2-3 times more dry matter and edible energy per unit area and time than cereal crops like wheat and rice (Singh and Trehan, 1998) [19]. This high rate of dry matter production results in large amounts of nutrients removed per unit time, which generally most of the soils are not able to supply. Hence, nutrient application through fertilizers becomes essential. Higher and sustainable yields can only be through the application of optimal NPK doses along with organics in balanced proportion.
Fertilizer is by and large the most important resource affecting the production and productivity of any cropping sequence. In the potato based cropping system intensive use of fertilizer, is practiced to enhance productivity and profitability. The imbalanced and indiscriminate use of chemical fertilizer in intensive cropping system has resulted in deterioration of soil health and decline in factor productivity. Continuous cropping of these crops without adequate restorative practices may pose threats to sustainability of system of high yielding varieties draw heavy amount of plant nutrients from soil and nutrient uptake often exceeds replenishment through fertilizers causing soil fertility deterioration in many parts of India.

The introduction of high yielding varieties and intensive cultivation with imbalance use of chemical fertilizers showed reduction in soil fertility status and crop yields. Integrated use of organic and inorganic fertilizers help in maintaining soil health and stability in crop production through correction of marginal deficiencies of secondary and micronutrients during mineralization of organic manures on one hand and soil physical and ecological condition on the other. Besides supplying nutrients to the crop, integrated use of organic and inorganic fertilizers often leaves substantial residual effect on succeeding crop in the cropping system resulting efficient crop production. Normally, sweet corn is heavily fertilized by farmers to get higher biomass per unit area in a given short time and thus fairly a good amount of applied nutrients will remain unutilized in soil. This substantial amount of residual nutrients remaining in the soil may be used for successful cultivation of succeeding crops. Therefore, the present investigation was conducted to study the residual fertility of preceding sweet corn crop on the growth and yield of succeeding potato.

Material and Methods

Field experiment was conducted during the year of 2014-15 and 2015-16 at the Instructional Research Farm, Central Campus, Post Graduate Institute, M.P.K.V., Rahuri (M.S.) The potato variety kufri-jyothi was used as test crop. The soil of experimental site was clayey in texture with low in available nitrogen (241.35 kg ha^{-1}), medium in available phosphorous (22.85 kg ha^{-1}) and very high in potassium (365.75 kg ha^{-1}). The experiment was laid out in Randomized Block Design, during *kharif* season the main plot treatments comprised of the gross recommended dose of fertilizers and three levels of FYM and vermicompost to sweet corn, replicated thrice and during *rabi* season each sub plot treatment was divided into two sub plot treatments with two levels of the gross recommended dose of fertilizers to potato.

Results and Discussion

Plant height (cm)

The growth parameters of potato such as plant height was influenced significantly due to different fertilizer treatments to preceding crop sweet corn (*kharif*) were under the study. The perusal of data presented in Table 2 revealed that the highest plant height at different stages of crop growth was observed under the treatment T_1-100% GRDF application than rest of the treatments during both the years, where it was found to be at par with the treatment T_6-125% RDN + 25% N through FYM. The superiority of FYM was attributed to its slow decomposition, which caused immobilization of nitrogen and low availability of nitrogen for the sweet corn crop found to be reversed during the succeeding potato crop. This might be due to the fact that when urea is integrated with organic manure mineralization is faster and the process is faster in FYM which could be attributed to sufficient supply of nutrients for better plant growth. Efficacy of FYM was improved by supplementation with synthetic fertilizers. Nutrients present in organic matter are not fully available to the crops in the season of its application. The increase in plant height may be due to the fact that higher nitrogen concentration stimulated the assimilation of carbohydrates and protein, which in turn enhanced cell division and formation of more tissues that resulted in enhanced vegetative growth of the plant. Banjare (2012) [4] reported that the highest plant height with the application of 370 kg Nha^{-1} in potato and Patel, (2013) [15] reported that significantly higher plant height with the increase in dose of NPK. This might be due to the fact that when urea is integrated with organic manure mineralization is faster which could be attributed to sufficient supply of nutrients for better plant growth. This result was in conformity with that of Anabousi *et al.*, (1997). Likewise, similar trend of results are in harmony with those reported by (Najm *et al.*, (2010, 2013) [12, 13], Sarkar *et al.*, (2011) [17], Baishya *et al.*, (2013) [2] and Narayan *et al.*, (2013) [14].

Plant spread

The mean plant spread per plant was significantly maximum in T_1-100% GRDF over rest of treatments. However, it was at par with treatment T_6-125% RDN + 25% N through FYM. This was because of higher residual availability of macro and micro nutrients under organic sources of nutrients, viz. FYM and vermicompost which in turn increased photosynthetic rate and reflected more accumulation of assimilates that caused increasing of vegetative growth characters similar positive residual effect of organic sources applied to previous crop on succeeding crop. Kumar *et al.* (2008) [8] reported similar positive residual effect of organic sources applied to previous crop on succeeding crop. Likewise, similar trend of results are in harmony with those reported by (Najm *et al.*, 2010, 2013, Baishya *et al.*, 2013 and Shaheen *et al.*, 2013) [12, 13, 2, 18].

Leaf area

The treatment T_1-100% GRDF recorded significantly maximum leaf area (dm^2) per plant over rest of treatments and at par with the treatment T_6-125% RDN + 25% N through FYM. Higher production of leaf area might be due to the fact that there was corresponding increase in vegetative growth with higher application of nitrogen, thereby increasing the number of leaves. Moreover high value of LAI might be due to adequate receipt of sunlight and higher leaf production. As more leaf area was produced of the plant in the same treatment by better nutrition. Najm *et al.*, (2010) [12], Sarkar *et al.*, (2011) [17] and Baishya *et al.*, (2013) [2] also reported similar findings.

Total dry matter of plant

The treatment T_1-100% GRDF recorded significantly maximum total dry matter over rest of treatments however it was at par with treatment T_6-125% RDN + 25% N through FYM. Higher production of leaf area might be due to the fact that there was corresponding increase in vegetative growth with higher application of nitrogen, thereby increasing the number of leaves. Moreover high value of LAI might be due to adequate receipt of sunlight and higher leaf production. As more leaf area was produced there would be more dry matter production of the plant in the same treatment by better nutrition. This was because of higher residual availability of macro-and micronutrients under organic sources of nutrients FYM. It might be because of improving soil structure, enhanced water holding capacity, soil microbial activity and available soil nutrients like NPK to plants with the application of FYM. Similar results have also been reported by Sarkar *et al.*, (2011) [17], Verma *et al.*, (2011) [20] and Baishya *et al.*, (2013) [2].

Grade wise yield of tubers (q ha^{-1})

There was significant effect of nutrient management practices on grade- wise tuber yield of potato. Different levels of INM studied in the present investigation influenced the yield q/plot as well as grade wise (tubers of small (< 25 g), medium (25-75 g) and large (> 75 g) tuber yield of potato. In case of 0-25 g tubers, the minimum tuber yield per plot was recorded under in treatment T_1-100% GRDF. As regards yield of tubers medium

(25-75 g) and large (> 75 g) tuber yield per plot was recorded under in treatment T_1-100% GRDF. This may be due to remarkably higher number of stolons counted in the higher level of 100% GRDF. This might be due to application of fertilizers in combination with organic manure which increased the nutrient-use efficiency through modification of soil physical condition, and resulted in higher total uptake of nutrients because of better root penetration leading to better absorption of nutrients and moisture (Yadav *et al.*, 2013) [21]. Kushwah *et al.,* (2005) [11] were of similar view and reported that manures have sufficient residual effect on soil nutrient supply system. They also supply micro-nutrients in addition to major plant nutrients. The favourable effect of integrated nutrient management through both inorganic fertilizers and organic manures due to less leaching loss, sufficient nutrient might be available during bulking stage and increasing the different grades tuber production was also noticed by Kumar *et al.*, (2009 and 2012) [9].

Total tuber and haulms yield

The potato tuber and haulms yield were significantly differed with residual fertility and direct application of varying sources and levels of nutrients. The highest tuber and haulm yields were recorded on the residual fertility of FYM application treatment T_1-100% GRDF recorded significantly superior total tuber yield and haulms yield than rest of the treatments and was at par with treatment T_6-125% RDN + 25% N through FYM. This result indicated that FYM applied during preceding sweet corn would have not been fully utilized by the crop during that season. However, during second season FYM applied may have also been supplemented by the remaining effect of FYM already applied during first season which would have resulted in higher tuber yield in the treatment comprising of organic manure (FYM @ 30tha^{-1}) during second season. Application of FYM to the preceding sweet corn crop recorded higher tuber yield and the magnitude of yield increase was over the application of NPK through VC. The increase in tuber yields under these treatments was the reflection of improved growth, yield parameters and nutrient uptake of the crop. The superiority of FYM was attributed to its slow decomposition (Singh *et al.*, 1996), which caused immobilization of nitrogen and low availability of nitrogen for the sweet corn crop found to be reversed during the succeeding potato crop. Kapur and Rana, (1980) also reported that only 30% of N, 66% of P and 70% K from FYM is likely to be used by the first crop, the remaining maybe available to the second crop and to a little extent to the subsequent crops raised on the same land. With nutrition point of view, it was observed that increase in tuber yield due to integration of synthetic fertilizers and farmyard manure might regulated supply of nutrients to potato crop through readily available nutrients from synthetic fertilizers at initial stage and later stages through mineralization of organic manure into available form of nutrients for crop (Sarkar *et al.*, 2011, Kumar *et al.*, 2012) [17, 9]. Similarly, integrated use of inorganic and organic sources of nutrients significantly improved the yield of potato. Such a production of higher yield of tuber in integrated nutrient application was also reported by Congera *et al.,* (2013); Najm *et al.,* (2013) [13]; Narayan *et al.,* (2013) [14]; Balemi, (2014) [3] and Biruk *et al.*, (2014) [5].

Table 1: Details of the treatment and symbol used

Sr. No.	Treatment details	Symbol
A	Main plot treatments (*Kharif* season sweet corn)	
1	100% GRDF	T_1
2	75% RDN + 25% N through FYM	T_2
3	75% RDN + 25% N through vermicompost	T_3
4	100% RDN + 25% N through FYM	T_4
5	100% RDN + 25% N through vermicompost	T_5
6	125% RDN + 25% N through FYM	T_6
7	125% RDN + 25% N through vermicompost	T_7
GRDF (120:60:40 N, P_2O_5, K_2O kg ha^{-1} + 10 tonne)		
B	Sub Plot Treatments (*Rabi* season potato)	
1	75% GRDF (90 :45 : 30 kg N, P_2O_5, K_2O ha^{-1}+ 22.5 t ha^{-1})	F_1
2	100% GRDF (120:60:40 kg N, P_2O_5, K_2O ha^{-1}+ 30 t ha^{-1})	F_2

(A common seed treatment with *Azotobacter*+ PSB also given to all treatments at the time of sowing)

Table 2: Plant height of potato as influenced periodically by different treatments.

Treatment	Plant height (cm)										
	2014-15						2015-16				
	28 DAP	42 DAP	56 DAP	70 DAP	At harvest		28 DAP	42 DAP	56 DAP	70 DAP	At harvest
Fertilizer levels to sweet corn											
T_1	:100% GRDF	25.27	33.35	39.23	42.31	43.24	26.59	35.14	41.79	43.86	46.14
T_2	: 75% RDN + 25% N through FYM	21.01	28.42	31.34	34.79	35.29	22.18	30.39	31.53	35.68	35.95
T_3	:75% RDN + 25% N through VC	19.99	28.19	28.97	32.94	33.47	22.05	29.25	31.14	33.97	32.99
T_4	:100% RDN + 25% N through FYM	22.91	29.83	33.99	36.49	37.03	24.06	30.85	33.73	36.55	38.11
T_5	:100% RDN + 25% N through VC	22.29	29.51	33.56	36.27	36.33	23.10	30.56	33.39	36.25	37.96
T_6	:125% RDN + 25% N through FYM	23.83	32.07	35.49	38.52	39.67	25.63	32.94	38.99	41.05	42.12
T_7	:125% RDN + 25% N through VC	23.16	30.15	35.36	37.99	38.11	24.58	32.02	34.85	40.12	39.22
	S. Em. ±	0.54	1.07	1.27	1.37	1.70	0.56	1.02	1.12	1.27	1.73
	C. D. at 5%	1.63	3.19	3.79	4.18	5.09	1.65	3.05	3.41	3.70	5.17
Fertilizer levels to potato											
F_1	: 75% GRDF	22.61	30.31	33.75	36.72	37.44	23.88	31.32	34.35	37.92	38.76
F_2	: 100% GRDF	22.66	30.65	34.21	37.36	37.99	24.17	31.87	34.63	38.62	39.09
	S. Em. ±	0.41	0.60	0.51	0.52	0.55	0.25	0.63	0.40	0.51	0.56
	C. D. at 5%	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Interaction	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

	General mean	22.64	30.48	33.98	37.04	37.72	24.03	31.59	34.49	38.27	38.93

Table 3: Plant spread per plant of potato as influenced by different treatments.

Treatment		Plant spread (cm) plant^{-1}									
		2014-15					2015-16				
		28 DAP	42 DAP	56 DAP	70 DAP	At harvest	28 DAP	42 DAP	56 DAP	70 DAP	At harvest
Fertilizer levels to sweet corn											
T_1 :	100% GRDF	42.84	64.57	69.84	71.92	65.82	43.88	66.21	72.97	73.06	66.56
T_2 :	75% RDN + 25% N through FYM	38.36	41.75	53.25	54.49	59.42	38.48	56.26	64.57	65.47	58.58
T_3 :	75% RDN + 25% N through VC	35.12	40.29	52.95	54.27	56.34	37.69	54.01	62.65	63.78	58.52
T_4 :	100% RDN + 25% N through FYM	39.96	50.66	55.68	56.67	61.43	40.02	58.23	65.92	68.59	61.73
T_5 :	100% RDN + 25% N through VC	38.48	49.47	55.23	55.85	60.42	38.55	56.43	65.72	66.56	60.58
T_6 :	125% RDN + 25% N through FYM	40.70	56.81	67.45	70.58	64.53	42.44	64.79	69.57	71.73	64.71
T_7 :	125% RDN + 25% N through VC	40.34	51.45	64.04	69.36	61.71	40.53	61.37	67.01	69.06	63.21
	S. Em. ±	0.75	2.61	1.87	0.46	1.27	1.09	1.61	1.96	0.49	0.77
	C. D. at 5%	2.24	7.81	5.67	1.37	3.81	3.25	4.81	5.88	1.49	2.29
Fertilizer levels to potato											
F_1 :	75% GRDF	39.06	49.86	57.86	67.11	61.65	39.98	64.27	60.81	68.20	61.83
F_2 :	100% GRDF	40.36	50.08	58.45	67.29	61.82	40.16	64.29	61.04	68.45	61.95
	S. Em. ±	0.35	0.89	1.10	0.21	0.35	0.48	0.61	1.08	0.21	0.29
	C. D. at 5%	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Interaction	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	General mean	39.71	49.97	58.16	67.20	61.73	40.07	64.28	60.92	68.32	61.89

Table 4: Leaf area per plant of potato as influenced by different treatments

Treatment		Leaf area (dm^2) plant^{-1}									
		2014-15					2015-16				
		28 DAP	42 DAP	56 DAP	70 DAP	At harvest	28 DAP	42 DAP	56 DAP	70 DAP	At harvest
Fertilizer levels to sweet corn											
T_1 :	100% GRDF	12.75	17.55	25.63	29.85	26.66	14.84	18.89	28.51	32.68	28.52
T_2 :	75% RDN + 25% N through FYM	8.11	11.94	13.71	18.91	13.86	8.08	13.59	14.82	21.12	14.21
T_3 :	75% RDN + 25% N through VC	7.12	11.12	13.55	15.65	13.01	7.23	13.12	14.68	17.75	14.18
T_4 :	100% RDN + 25% N through FYM	9.41	14.18	16.38	20.42	18.16	9.29	13.69	18.28	21.92	17.29
T_5 :	100% RDN + 25% N through VC	8.26	13.56	15.64	19.76	15.70	9.19	13.64	17.64	21.81	17.18
T_6 :	125% RDN + 25% N through FYM	11.64	16.31	24.93	27.58	24.81	12.52	17.83	26.19	31.77	27.80
T_7 :	125% RDN + 25% N through VC	11.41	14.48	16.59	26.42	18.83	12.17	15.39	18.65	28.10	19.25
	S. Em. ±	1.93	0.91	0.68	1.04	1.11	0.87	1.16	0.89	1.07	1.19
	C. D. at 5%	N.S.	2.70	2.04	3.12	3.34	2.61	3.48	2.69	3.21	3.58
Fertilizer levels to potato											
F_1 :	75% GRDF	9.43	14.51	17.78	20.35	17.96	10.27	15.02	19.63	25.10	19.63
F_2 :	100% GRDF	9.63	14.91	18.34	20.37	18.43	10.67	15.31	20.02	24.94	19.93
	S. Em. ±	0.23	0.30	0.36	0.28	0.24	0.21	0.22	0.36	0.29	0.31
	C. D. at 5%	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S
	Interaction	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S	N.S
	General mean	9.53	14.71	18.06	20.36	18.20	10.48	15.16	19.83	25.02	19.78

Table 5: Total dry matter accumulation per plant of potato as influenced by different treatments.

Treatment		Total dry matter of accumulation of (g plant^{-1})									
		2014-15					2015-16				
		28 DAP	42 DAP	56 DAP	70 DAP	At harvest	28 DAP	42 DAP	56 DAP	70 DAP	At harvest
Fertilizer levels to sweet corn											
T_1 :	100% GRDF	1.59	16.42	38.35	70.97	84.84	1.70	16.98	40.42	72.94	85.37
T_2 :	75% RDN + 25% N through FYM	0.99	10.47	26.68	49.89	57.31	1.07	11.27	28.11	51.75	61.51
T_3 :	75% RDN + 25% N through VC	0.90	9.76	25.55	47.08	54.13	0.98	10.53	26.92	48.20	55.76
T_4 :	100% RDN + 25% N through FYM	1.36	13.01	29.99	56.68	70.10	1.42	14.91	31.26	59.16	71.10
T_5 :	100% RDN + 25% N through VC	1.08	11.80	28.19	52.94	59.48	1.19	12.24	28.88	53.11	64.46
T_6 :	125% RDN + 25% N through FYM	1.49	15.57	36.61	70.40	82.11	1.59	16.40	38.46	71.33	84.28
T_7 :	125% RDN + 25% N through VC	1.41	14.05	30.91	60.51	72.65	1.51	14.61	33.46	69.16	73.70
	S. Em. ±	0.04	0.34	0.94	1.78	1.93	0.05	0.27	1.82	1.98	2.22
	C. D. at 5%	0.12	1.02	2.82	5.35	5.79	0.15	0.81	5.45	5.94	6.65
Fertilizer levels to potato											
F_1 :	75% GRDF	1.23	11.86	30.02	56.35	66.28	1.27	12.82	31.14	58.68	69.84
F_2 :	100% GRDF	1.31	12.54	30.37	57.49	67.39	1.35	13.28	31.82	58.83	70.88
	S. Em. ±	0.02	0.28	0.38	0.66	0.86	0.01	0.19	0.24	0.48	0.52
	C. D. at 5%	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Interaction	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	General mean	1.27	12.20	30.19	56.92	66.83	1.31	13.05	31.48	58.75	70.36

Table 6: Yield of small grade (<25g), medium grade (25-75g) and big grade (>75g) tubers as influenced by different treatments.

Treatment		Yield of small tubers (q ha $^{-1}$)	Yield of medium tubers (q ha $^{-1}$)	Yield of big tubers (q ha $^{-1}$)	Yield of small tubers (q ha $^{-1}$)	Yield of medium tubers (q ha $^{-1}$)	Yield of big tubers (q ha $^{-1}$)
		2014-15			2015-16		
Fertilizer levels to sweet corn							
T_1 :	100% GRDF	60.20	97.66	122.35	64.99	96.59	125.38
T_2 :	75% RDN + 25% N through FYM	85.70	83.30	91.35	97.32	87.96	87.07
T_3 :	75% RDN + 25% N through VC	88.07	89.11	78.53	99.56	85.25	81.91
T_4 :	100% RDN + 25% N through FYM	82.66	83.97	98.90	85.81	80.50	110.20
T_5 :	100% RDN + 25% N through VC	76.70	97.70	87.25	89.81	89.65	95.250
T_6 :	125% RDN + 25% N through FYM	71.48	83.39	120.49	81.46	85.15	115.50
T_7 :	125% RDN + 25% N through VC	78.65	84.67	108.23	73.70	92.75	112.50
	S. Em. ±	1.64	1.93	2.98	1.96	1.84	2.32
	C. D. at 5%	4.92	5.79	8.94	5.88	5.52	6.96
Fertilizer levels to potato							
F_1 :	75% GRDF	76.54	87.42	100.83	84.48	87.67	103.96
F_2 :	100% GRDF	78.44	89.37	101.82	84.88	89.07	104.44
	S. Em. ±	2.76	1.23	1.18	0.66	0.54	0.90
	C. D. at 5%	NS	NS	NS	NS	NS	NS
	Interaction	NS	NS	NS	NS	NS	NS
	General mean	77.49	88.39	101.32	84.68	88.37	104.19

Table 7: Total tuber and haulm yield of potato during both years on pooled mean as influenced by different treatments

Treatment		Tuber yield (q ha^{-1})		Pooled mean (q ha^{-1})	Haulm yield (q ha $^{-1}$)		Pooled mean (q ha^{-1})
		2014-15	2015-16		2014-15	2015-16	
Fertilizer levels to sweet corn							
T_1 :	100% GRDF	280.21	286.96	283.58	12.31	13.52	12.92
T_2 :	75% RDN + 25% N through FYM	260.35	272.35	266.35	10.46	10.54	10.50
T_3 :	75% RDN + 25% N through VC	255.71	266.72	261.21	10.31	10.46	10.38
T_4 :	100% RDN + 25% N through FYM	265.53	276.51	271.02	10.90	11.12	10.96
T_5 :	100% RDN + 25% N through VC	261.65	274.71	268.18	10.66	10.97	10.71
T_6 :	125% RDN + 25% N through FYM	275.36	282.11	278.74	11.17	12.26	11.71
T_7 :	125% RDN + 25% N through VC	271.55	278.95	275.25	11.06	11.17	11.11
	S. Em. ±	2.47	2.53	2.51	0.41	0.47	0.44
	C. D. at 5%	7.41	7.59	7.51	1.22	1.41	1.31
Fertilizer levels to potato							
F_1 :	75% GRDF	264.66	274.75	269.71	10.69	10.95	10.82
F_2 :	100% GRDF	270.21	279.60	274.91	10.98	11.64	11.30
	S. Em. ±	2.44	1.04	1.28	0.13	0.11	0.24
	C. D. at 5%	NS	NS	NS	NS	NS	NS
	Interaction	NS	NS	NS	NS	NS	NS
	General mean	267.44	277.18	272.31	10.83	11.29	11.06

Conclusion

From the two years experimentation investigations on "Influence of integrated nutrient management on growth and yield of sweet corn (maize) in sweet corn (*Zea mays* L.) - potato (*Solanum tuberosum*) cropping sequence." revealed that application of T_1 – 100% GRDF to preceding crop sweet corn during *kharif* season was followed by F_2 – 100% GRDF to potato during *rabi* season better growth, higher yield and yield attributes. In view of this, it may be concluded that for obtaining maximum tuber yield in potato, it needs to be fertilized with T_1 – 100% GRDF to preceding crop sweet corn during *kharif* season was followed by F_2 – 100% GRDF to potato. However, such studies require more critical testing at Western Ghat and falls under rain shadow area over a longer period before final recommendations are made.

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