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Research Article

INTEGRATED WEED MANAGEMENT WITH LOW VOLUME HERBICIDE ON GROWTH AND YIELD OF SWEET CORN

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Abstract: A field experiment on "Integrated weed management with low volume herbicides on growth and yield of sweet corn (*Zea mays* var. saccharata)" was undertaken during *kharif*, 2013-14 at Post Graduate Institute Instructional Farm, Mahatma Phule Krishi Vidyapeeth, Rahuri, Dist. Ahmednagar (Maharashtra). The various growth contributing characters *viz*., plant height, number of leaves, leaf area of plant and dry matter production plant^{-1} were significantly higher with treatment weed free check which were at par with PE application Sulfosulfuron + imazethapyr (@ 15+25 g a.i. ha^{-1}) with one HW at 40 DAS. The yield contributing characters *viz*., number of cobs plant^{-1}, length of cob, diameter of cob with husk and without husk, were recorded significantly higher with treatment weed free check being at par with PE application of sulfosulfuron + imazethapyr (@ 15+25 g a.i. ha^{-1}) with one HW at 40 DAS. The green cob and green fodder yields were significantly higher in treatment weed free check which was at par with PE application of Sulfosulfuron + Imazethapyr (@ 15+25 g a.i. ha^{-1}) with one HW at 40 (T_6) followed by treatment PE application of Sulfosulfuron + Imazethapyr (@ 15+25 g a.i. ha^{-1}) (T_3). Weed free check recorded cent per cent and significantly higher weed control efficiency and minimum weed index than rest of the treatments. Among the herbicidal weed management treatments, treatment PE application of Sulfosulfuron + Imazethapyr (@ 15 + 25 g a.i. ha^{-1}) with one HW at 40 DAS (T_6) registered significantly higher weed control efficiency over other treatments at all the stages of observations.

Keywords: Weed, Weed index, Integrated weed management, Economics

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Introduction

Maize is most adoptable crop in different season and environment which is use as crop and also as a forage crop which has so immense potentiality and wider adaptability that is why it is called as 'Queen of cereals'. It is warm weather crop grown under quite divergent conditions in different part of our country. India has the favourable climatic conditions and soil textures to produce higher productivity of maize. In India, it is cultivated on an area of 8.68 m.ha with a production of 22 to 23 million tonnes per hectare and the productivity of 2.43 tonnes ha^{-1} [1].It is also the most widely used raw material for manufacturing starch and its derivatives, alcohol, corn oil, citric acid, sorbitol, vitamin and biodegradable plastics. Therefore, there is need to explore the possibilities of increasing the productivity through better understanding of constraints in production. In India, sweet corn is cultivated on very small area by some farmers and private sectors to meet demands of many industries, and the demand for sweet corn in cities and towns, star hotels is increasing day by day. In addition, it has potential to generate employment opportunities in the rural areas. The lack of knowledge about the use and economic importance of sweet corn, non-availability of appropriate production technology and the weed infestation are the major constraints for its popularization among Indian sweet corn growers. Keeping in view the production potential of maize in the state and high economic returns from sweet corn, there is immense scope of growing maize as sweet corn to improve economic status of poor maize growers. Hence, there is need to increase the production and productivity of sweet corn. Many factors are responsible for the low yields of maize in India. Among them heavy weed infestation is one of the major constraints that limit the productivity of sweet corn crop and most critical for the low yield appears to be the weed growth competing with crop for nutrients, water, sunlight and space. The abundant rainfall in kharif encourage rapid weed growth. Weeds emerge with germination of maize seeds and grow along with plants throughout the early growth period. This cause severe crop-weed competition. Wider spacing and slow growing nature of the crop during the first 3-4 weeks, provides enough opportunity for weeds to invade and offer severe competition resulting in 30-100 per cent yield reduction [2]. Presence of weeds reduces the photosynthetic efficiency, dry matter production and distribution to economical parts and there by reduces sink capacity of crop resulting in poor grain yield. Thus, yield losses due to season long weed infestation range from 30 per cent to complete crop failure [3]. The maize crop kept weed free for 30 to 45 days after planting is almost similar in yield as that kept weed free for entire crop season. It is very difficult and economically not feasible to keep the crop weed free throughout the growing season. 2 to 3 manual weeding's would be needed for this purpose. Generally weeding hook, hand hoe and spade are used for weed control in maize. At many places, people use cultivator or country plough in between the rows of maize. Sometimes due to continuous rains during the early period of maize growth, it becomes impossible to enter in the field. In such situation the only effective way to control weeds is the use of pre-emergence herbicides.

Method and material

The experiment was conducted during kharif season in the year 2013-14 at Post Graduate Institute Instructional Farm, Mahatma Phule Krishi Vidyapeeth, Rahuri 413722, Dist Ahmednagar, Maharashtra (India). Geographically central campus is situated in between 74°19' N to 19°57' N latitude and between 74°19' E to 74°32' E longitudes. The elevation above mean sea level varied from 495 to 596 meter. The soil was well drained. It was observed that the soil of experimental site was clayey in texture. The chemical composition according to criteria laid by Muhr *et al*., (1965) [4] indicated that, soil was low in available nitrogen (215.30 kg ha^{-1}), medium in available phosphorus (17.20 kg ha^{-1}) and very high in potassium (483.44 kg ha^{-1}).

Table-1 Plant height of sweet corn as influenced periodically by different treatments

Treatment		Plant height (cm)				
		14 DAS	28DAS	42DAS	56DAS	At harvest
T_1 :	Sulfosulfuron 75% WG @ 30 g a.i. ha^{-1} as PE	8.12	46.74	81.67	142.82	171.20
T_2 :	Imazethapyr 10% SL @ 50 g a.i. ha^{-1} as PE	7.16	40.54	70.84	123.9	148.46
T_3 :	Sulfosulfuron 75 % WG + Imazethapyr 10 % (@ 15 + 25 g a.i. ha^{-1}) as PE	10.94	51.86	93.62	152.33	182.55
T_4 :	Sulfosulfuron 75 % WG @ 30 g a.i. ha^{-1} as PE + 1 HW at 40 DAS	8.66	47.25	82.11	151.47	180.90
T_5 :	Imazethapyr 10 % SL @ 50 g a.i. ha^{-1} as PE + 1 HW at 40 DAS	7.30	45.83	80.09	140.5	176.84
T_6 :	Sulfosulfuron 75 % WG+ Imazethapyr 10 % SL (@ 15 + 25 g a.i. ha^{-1}) as PE + 1 HW at 40 DAS	11.16	52.26	94.08	164.52	197.00
T_7 :	Weed free check	11.60	54.44	95.00	166.34	199.34
T_8 :	Unweeded check	7.00	42.17	67.90	115.3	138.10
	S. E.±	0.26	1.48	2.55	4.44	5.35
	CD at 5%	0.80	4.49	7.76	13.46	16.24
	General Mean	**8.99**	**47.64**	**83.16**	**144.65**	**174.3**

Table-2 Number of functional leaves of sweet corn as influenced periodically by different treatments

Treatment		No. of functional leaves $plant^{-1}$				
		14DAS	28DAS	42DAS	56DAS	At harvest
T_1 :	Sulfosulfuron 75% WG @ 30 g a.i. ha^{-1} as PE	3.4	5.80	8.13	10.66	10.93
T_2 :	Imazethapyr 10% SL @ 50 g a.i. ha^{-1} as PE	3.0	5.00	7.00	10.00	10.33
T_3 :	Sulfosulfuron 75 % WG + Imazethapyr 10 % (@ 15 + 25 g a.i. ha^{-1}) as PE	3.6	7.00	10.20	11.20	11.92
T_4 :	Sulfosulfuron 75 % WG @ 30 g a.i. ha^{-1} as PE + 1 HW at 40 DAS	3.4	6.00	8.26	11.12	11.29
T_5 :	Imazethapyr 10 % SL @ 50 g a.i. ha^{-1} as PE + 1 HW at 40 DAS	3.2	5.40	7.20	10.60	10.86
T_6 :	Sulfosulfuron 75 % WG+ Imazethapyr 10 % SL (@ 15 + 25 g a.i. ha^{-1}) as PE + 1 HW at 40 DAS	3.6	7.20	10.46	13.40	13.66
T_7 :	Weed free check	3.8	7.26	10.73	13.46	13.80
T_8 :	Unweeded check	2.3	4.94	6.93	9.48	9.86
	S. E.±	0.10	0.18	0.25	0.34	0.35
	CD at 5%	0.30	0.55	0.78	1.03	1.07
	General Mean	**3.28**	**6.35**	**8.61**	**11.24**	**11.59**

Figures in parentheses are original, transformed to values √(x+1)

Table-3 Leaf area $plant^{-1}$ of the sweet corn as influenced periodically by different treatments

Treatment		Leaf area $plant^{-1}$ (dm^2)				
		14DAS	28DAS	42DAS	56DAS	At harvest
T_1 :	Sulfosulfuron 75% WG @ 30 g a.i. ha^{-1} as PE	0.32	19.26	57.00	68.53	71.27
T_2 :	Imazethapyr 10% SL @ 50 g a.i. ha^{-1} as PE	0.30	18.21	54.89	58.26	60.37
T_3 :	Sulfosulfuron 75 % WG + Imazethapyr 10 % (@ 15 + 25 g a.i. ha^{-1}) as PE	0.36	21.52	59.78	72.28	76.58
T_4 :	Sulfosulfuron 75 % WG @ 30 g a.i. ha^{-1} as PE + 1 HW at 40 DAS	0.32	19.75	57.25	69.36	72.35
T_5 :	Imazethapyr 10 % SL @ 50 g a.i. ha^{-1} as PE + 1 HW at 40 DAS	0.31	18.67	56.47	63.7	66.35
T_6 :	Sulfosulfuron 75 % WG+ Imazethapyr 10 % SL (@ 15 + 25 g a.i. ha^{-1}) as PE + 1 HW at 40 DAS	0.37	21.78	60.33	78.65	83.54
T_7 :	Weed free check	0.38	22.95	62.80	79.15	84.25
T_8 :	Unweeded check	0.28	17.52	47.30	54.15	56.15
	S. E.±	0.01	0.62	1.78	2.08	2.17
	CD at 5%	0.03	1.88	5.41	6.32	6.61
	General Mean	**0.33**	**19.96**	**56.98**	**68.13**	**71.52**

Table-4 Dry matter accumulation $plant^{-1}$ of the sweet corn as influenced periodically by different treatments

Treatment		Dry matter $plant^{-1}$ (g)				
		14DAS	28DAS	42DAS	56DAS	At harvest
T_1 :	Sulfosulfuron 75% WG @ 30 g a.i. ha^{-1} as PE	0.15	19.16	82.21	141.88	221.37
T_2 :	Imazethapyr 10% SL @ 50 g a.i. ha^{-1} as PE	0.12	17.66	77.3	137.56	198.75
T_3 :	Sulfosulfuron 75 % WG + Imazethapyr 10 % (@ 15 + 25 g a.i. ha^{-1}) as PE	0.18	22.75	88.26	144.38	340.64
T_4 :	Sulfosulfuron 75 % WG @ 30 g a.i. ha^{-1} as PE + 1 HW at 40 DAS	0.15	19.47	82.7	142.70	275.64
T_5 :	Imazethapyr 10 % SL @ 50 g a.i. ha^{-1} as PE + 1 HW at 40 DAS	0.13	17.80	79.16	140.29	199.58
T_6 :	Sulfosulfuron 75 % WG+ Imazethapyr 10 % SL (@ 15 + 25 g a.i. ha^{-1}) as PE + 1 HW at 40 DAS	0.18	22.94	89.48	158.62	347.68
T_7 :	Weed free check	0.19	23.28	91.68	160.28	366.91
T_8 :	Unweeded check	0.10	12.25	62.25	130.53	193.99
	S. E.±	0.04	0.58	2.52	4.53	7.63
	CD at 5%	0.13	1.76	7.65	13.75	23.16
	General Mean	0.15	19.41	81.63	144.65	263.07

Figures in parentheses are original, transformed to values √(x+1)

The soil analysed Modified alkaline permanganate method, Olsen's method- 0.5M $NaHCO_3$, Neutral ammonium extractant method respectively with electrical conductivity of 0.53 dSm^{-1}. The soil was moderately alkaline in reaction (pH 7.90). The experiment was laid out in kharif season. There were eight treatments laid out in randomized block design with three replications. The experiment consists of eight treatments involving two PE herbicides *viz*., Sulfosulfuron 75 % WG @ 30 g a.i. ha^{-1}, Imazethapyr 10 % SL @ 50 g a.i. ha^{-1}, Sulfosulfuron 75 % WG + Imazethapyr 10 % SL (@ 15 + 25 g a.i. ha^{-1}), Sulfosulfuron 75 % WG @ 30 g a.i. ha^{-1} with one HW, Imazethapyr 10 % SL @ 50 g a.i. ha^{-1} with one HW, Sulfosulfuron 75 % WG + Imazethapyr 10 % SL (@ 15 + 25 g a.i. ha^{-1}) with one

Table-5 Yield contributing characters as influenced by different treatments

Treatment		Yield contributing characters						
		No. of cobs plant^{-1}	Length of cob with husk(cm)	Length of Cob without husk(cm)	Diameter of Cob with husk(cm)	Diameter of Cob without husk(cm)	Green cob yield	Green fodder yield
T_1 :	Sulfosulfuron 75% WG @ 30 g a.i. ha^{-1} as PE	1.9	22.26	16.24	18.36	14.12	143.20	286.42
T_2 :	Imazethapyr 10% SL @ 50 g a.i. ha^{-1} as PE	1.8	17.53	14.11	16.22	10.72	132.23	254.46
T_3 :	Sulfosulfuron 75 % WG + Imazethapyr 10 % (@ 15 + 25 g a.i. ha^{-1}) as PE	1.9	25.75	21.09	20.43	16.20	166.50	343.26
T_4 :	Sulfosulfuron 75 % WG @ 30 g a.i. ha^{-1} as PE + 1 HW at 40 DAS	1.9	24.22	20.19	19.97	15.19	158.13	316.56
T_5 :	Imazethapyr 10 % SL @ 50 g a.i. ha^{-1} as PE + 1 HW at 40 DAS	1.8	20.26	15.02	17.2	12.33	141.91	285.82
T_6 :	Sulfosulfuron 75 % WG+ Imazethapyr 10 % SL (@ 15 + 25 g a.i. ha^{-1}) as PE + 1 HW at 40 DAS	2.0	28.92	23.36	22.08	18.87	195.86	411.72
T_7 :	Weed free check	2.0	29.88	24.92	23.07	19.60	200.33	424.67
T_8 :	Unweeded check	1.8	14.35	13.09	14.55	8.84	126.32	267.52
	S. E.±	0.06	0.67	0.54	0.57	0.42	6.06	12.38
	CD at 5%	NS	2.03	1.63	1.74	1.27	18.41	37.56
	General Mean	1.89	22.9	18.5	18.98	14.48	200.01	410.28

HW, weed free check and unweeded check. The variety used in this research was Sugar 75. The allocation of treatments in the replication was done by random method. The gross and net plot sizes were 5.20 m x 3.60m 4.80 m x 2.40m, respectively. The recommended dose 120, 40, 40 NPK kg/ha in the form of Single super phosphate and muriat of potash to all plots uniformly in line.

Results and Discussion

Effect on weeds

The weed flora of the experimental field consisted of grasses, sedges and broad-leaved weeds which were observed from the unweeded check plot. The pre-dominant grassy weeds were *Commelina benghalensis L., Commelina diffusa Burm. P., Cynodon dactylon, Dinebra retroflexa (Vahl.) Panzerand Brachiaria ramose L.* while dicots like *Parthenium hysteophorus* L., *Acalypha ciliate* L., *Vigna trilobata* L. and *Physalis minima* L. and sedges *Cyperus rotundus* L.

Plant height

The mean plant height at 14, 28, 42, 56 DAS and at harvest were 8.99, 47.64, 83.16, 144.65 and174.30,respectively.The average plant height of sweet corn was significantly higher (11.60, 54.44, 95.00, 166.34 and 199.34 cm, respectively) with the treatment weed free check and it was at par with treatments PE application of sulfosulfuron + imazethapyr (@ 15+25 g a.i. ha^{-1}) with one HW at 40 DAS (T6) followed by treatments PE application of sulfosulfuron + imazethapyr (@ 15+25 g a.i. ha^{-1}) (T_3) at all the stages of observation. The unweeded check recorded significantly the lowest plant height at all the stages of observation and it was at par with treatment imazethapyr 10% SL @ 50 g a.i. ha^{-1} indicating phytotoxic effect (stunted growth) on sweet corn crop.

Number of leaves plant^{-1}

The mean number of functional leaves of sweet corn at14, 28, 42, 56 DAS and at harvest were 3.28, 6.35, 8.61, 11.24 and 11.59, respectively. The weed free check recorded significantly more number of leaves than rest of the treatments at all the stages of observation but it was at par with treatment PE application of sulfosulfuron + imazethapyr (@ 15+25 g a.i. ha^{-1}) with one HW at 40 DAS. Unweeded check treatment registered significantly the lowest number of functional leaves (2.3, 4.94, 6.93, 9.48 and9.86 respectively) at 14, 28, 42, 56 DAS and at harvest. The significant increase in plant height and number of leaves of sweet corn crop in weed free treatment seems to be on account of larger canopy development owing to higher plant height and number of leaves which might have increase interception, absorption and utilization of radiant energy available for growth and development of crop.

Leaf area plant^{-1}

The leaf area plant^{-1} increased progressively with the advancement in the age of crop. The mean leaf area per plant recorded at14, 28, 42, 56 DAS and at harvest were 0.33, 19.96, 56.98, 68.13 and 71.42, respectively. Weed free check recorded significantly higher leaf area plant^{-1} than the rest of the treatments at all the stages of observations except treatment PE application of Sulfosulfuron + Imazethapyr (@ 15 + 25 g a.i. ha^{-1}) with one HW at 40 DAS which was found at par with the treatment T_3 and T_6 at 14 and 28 DAS and T_6at 42, 56 DAS and at harvest. Significantly minimum leaf area plant^{-1} was noticed in treatment unweeded check at all the stages of observations. This might be due to congenial nutritional environmental might have increased metabolic processes in plants resulting in greater meristematic activity and apical growth thereby improving leaf formation and retention of higher area of leaves per plant which resulted in enhanced plant growth and leaf area. These observations are in agreement with the findings of Dixit and Gautam, (1996) and Sandhya Rani *et al*., (2011).

Dry matter plant^{-1} of sweet corn

The mean dry matter plant^{-1} of sweet corn observed at14, 28, 42, 56 DAS and at harvest were0.15, 19.41, 81.63, 144.65and 263.07g plant^{-1}, respectively. Treatment weed free check recorded significantly higher dry matter per plant of sweet corn as compared to rest of the treatments except treatment PE application of sulfosulfuron + imazethapyr (@ 15+25 g a.i. ha^{-1}) with one HW at 40DAS at all the stages of observations i.e. 14, 28, 42, 56 DAS and at harvest.The dry matter plant-1 rest with the treatment weed freecheck at 14, 28, 42, 56 DAS and at harvest were 0.19, 23.28, 91.61, 160.28and 366.91 g per plant, respectively. Minimum dry matter plant^{-1} of sweet corn observed with treatment unweeded check. Among the herbicide treatments, treatment T_1, T_2, T_4 and T_5 recorded less dry matter palnt-1 as compared to other treatments. Under reduced density and dry matter of weeds, plants get sufficient space for optimum expansion of leaves and area as early as possible. Thus, under least crop-weed competition, adequate availability of light, optimum temperature, adequate space along with improvement in physiological and morphological characters of the plant might be responsible for more accumulation of plant dry matter and increased plant height. The reduction in dry matter plant^{-1} with treatment T_1, T_2 T_4 and T_5 attributed to phytotoxic effect from higher doses of herbicides Sulfosulfuron and Imazethapyr.

Yield attributing characters

Number of cobs plant^{-1}

The mean number of cobs plant^{-1} at harvest werenot influenced due to different weed control practices. It might be inferred that more weed density created more competition with crop plants for light, space and nutrients, therefore, crop plants invested more photosynthetes and resultantly less cob setting was recorded. These results can get support from Kolage, *et al*. (2004), Paygonde, *et al*. (2008) and Sandhya Rani, *et al*. (2011).

Length of cob with husk

The mean length of cob with husk was 22.09cm. The highest mean length of cob with husk (29.88 cm) was recorded by the treatment weed free check which was significantly superior over rest of the treatments except treatment, PE application of sulfosulfuron + imazethapyr (@ 15+25 g a.i. ha-^{1}) with one HW at 40DAS (28.92 cm) which was followed by treatment PE application of sulfosulfuron +

imazethapyr (@ 15+25 g a.i. ha^{-1}) (T_3). Significantly less cob length with husk was noticed in unweeded check (14.35 cm).

Length of cob without husk

The mean cob length without husk was (13.09 cm), differed significantly due to different weed control treatments. The highest mean length of cob without husk (24.92 cm) was recorded by the treatment weed free up to 60 days which was significantly superior over rest of the treatments except treatment PE application of sulfosulfuron + imazethapyr (@ 15+25 g a.i. ha-1) with one HW at 40 DAS which was followed by treatment PE application of sulfosulfuron + imazethapyr (@ 15+25 g a.i. ha^{-1}) without HW (T_3).This might be due to lowering the crop-weed competition during critical crop growth period at cob development stage might have increased the availability of moisture and plant nutrients to the crop resulted in better development of cobs.

Diameter of cob with husk

The mean diameter of cob with husk was (18.98 cm).Maximum (23.07 cm) diameter of cob with husk was recorded with treatment weed free check and it was significantly higher than rest of the treatments except PE application of sulfosulfuron + imazethapyr (@ 15+25 g a.i. ha^{-1}) with one HW at 40 DAS (T_6).The least and significantly inferior test weight was noticed in treatment unweeded check (14.55 cm).

Diameter of cob without husk

The mean diameter of cob without husk was (14.48 cm).The differences in diameter of cob without husk due to different weed control treatments were found significant. Maximum (19.60 cm) diameter of cob without husk was noticed in treatment weed free check and it was significantly superior than rest of the treatments except treatment, PE application of sulfosulfuron + imazethapyr (@ 15+25 g a.i. ha^{-1}) with one HW at 40 DAS. The least and significantly inferior diameter of cob without husk was noticed in treatment unweeded check (8.84cm).

Green cob yield

The green cob yield was significantly differed due to different weed control treatments. The mean green cob yield was (200.01 q ha^{-1}). The data revealed that significantly the highest green cob yield (200.33 q ha^{-1}) was recorded by the treatment weed free check which was at par with treatment PE application of Sulfosulfuron + Imazethapyr (@ 15 + 25 g a.i. ha^{-1}) with HW at 40 DAS (T_6)(195.86 q ha^{-1}) followed by treatment (T_3). Among the herbicidal treatments, treatment (T_6) had registered significantly maximum and significantly higher green cob yield over the other treatment. The higher green cob yields under effective weed control treatments might be due to reduced crop-weed competition, as the plants have to face neither nutrient nor moisture stress due to lower weed infestation and because of this proper utilization of moisture, nutrient, light and space was done by sweet corn crop for growth and development which reflects in improvement of growth and yield attributes of sweet corn crop and finally in terms of yield.

Green fodder yield

The mean green fodder yield was410.28 q ha^{-1}. The green fodder yield of sweet corn was significantly influenced due to different weed control treatments. The Similar trend to that of green cob yield was observed with respect to green fodder yield. Treatment weed free check registered significantly higher green fodder yield (424.67 q ha^{-1}) than the rest of the treatments except treatment T_6 (411.72 q ha^{-1}). Significantly the lowest straw yield was found with treatment unweeded check (267.52 q ha^{-1}).

Effect on weeds

Pre-emergence application of sulfosulfuron + imazethapyr (@ 15+25 g a.i. ha^{-1}) with one HW at 40 days after sowing recorded significantly higher values of weed control efficiency, herbicide efficiency index and minimum values of weed index and weed persistence index indicating better bio-efficacy of this treatment. The treatments PE application of Sulfosulfuron @ 30 g a.i. ha^{-1} and Imazethapyr @ 50 g a.i. ha^{-1} were controlled weeds efficiently by registering maximum values of weed control efficiency and herbicide efficiency index and minimum values of weed persistency index. However, these treatments showed moderate to severe phytotoxicity effect on sweet corn crop resulting in poor yield. Pre-emergence application of sulfosulfuron + imazethapyr (@ 15+25 g a.i. ha^{-1}) with one hand weeding at 40 days after sowing recorded minimum nutrient uptake by the weeds and maximum nutrient uptake by the crop and this treatment was equally effective as that of weed free check, indicating minimum weed density and crop-weed competition for nutrients.Maximum net monetary returns (Rs. 1,75,613 ha^{-1}), B: C ratio (3.67) and incremental B: C ratio (41.10) were noticed in pre emergence application of sulfosulfuron + imazethapyr (@ 15+25 g a.i. ha^{-1}) with one hand weeding at 40 days after sowing.

Conclusion

All the weed control treatments controlled weeds effectively as compared to unweeded check. Among the weed management treatments pre-emergence application of sulfosulfuron + imazethapyr (@ 15+25g a.i. ha^{-1}) with one HW at 40 DAS was found superior in reducing total weed count and its dry weight ultimately reducing crop-weed competition and thereby increasing growth, yield attributes and yield of sweet corn.

Application of research: research is conducted for increasing marketability of sweet corn and use of different herbicide and see their effect in growth and yield of sweet corn.

Research category: Weed control efficiency

Abbreviation: HW: Hand weeding, WG; Wettable Granuals

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