Indian Journal of Weed Science (2023) **55**(3): 349–354
http://dx.doi.org/10.5958/0974-8164.2023.00065.5

RESEARCH NOTE

Weed management in finger millet (*Eleusine coracana* L.) intercropped in coconut garden

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Received: 30 September 2022 | Revised: 3 June 2023 | Accepted: 7 June 2023

ABSTRACT

A field experiment was laid out in randomized block design at Coconut Research Station, Balaramapuram consisted 12 weed management treatments replicated thrice to determine the cost-effective weed management practice for finger millet intercropped in coconut. There was significant reduction in the absolute density of grasses and broad-leaed weeds in finger millet due to weed management. Manual weeding at 15 and 30 DAS resulted in the lowest weed biomass at 40 DAS, however at 60 DAS, pre-emergence (PE) pyrazosulfuron-ethyl 20 g/ha *fb* wheel hoe weeding (WHW) at 25 DAS recorded the lowest weed biomass (32.40 g/m^2). Weed control efficiency also followed the same trend as that of weed biomass. Pre-emergence application of pyrazosulfuron-ethyl 20 g/ha *fb* WHW at 25 DAS resulted in the highest weed control efficiency (91.8 %). Uncontrolled weed growth resulted in a yield loss of 53.88%. The lowest weed index was noted in PE pyrazosulfuron-ethyl 20 g/ha *fb* WHW at 25 DAS. Among the treatments, PE pyrazosulfuron-ethyl 20 g/ha *fb* WHW at 25 DAS recorded the highest productive tillers (93.3 no./m^2), fingers per ear head (13.3 no.) and ear head weight (12.8 g). This treatment also resulted in the highest grain yield (2072.2 kg/ha) which was statistically at par with PE pyrazosulfuron 20 g/ha *fb* penoxsulam + cyhalofop-butyl 125 g/ha at 25 DAS (1931.5 kg/ha). The net return (40974 ₹ /ha) and B: C ratio (1.98) were also highest in PE pyrazosulfuron 20 g/ha *fb* WHW at 25 DAS.

Keywords: Chemical control, Coconut, Finger millet, Intercrop, Weed management, Wheel hoe weeding

Finger millet locally known as ragi or madua in South India is a low-cost cereal and a staple food for the people of dryland regions of the world. It is estimated that finger millet accounts for about 10% of global millet production (Dida *et al.* 2008). In India, it ranked third in area and production among millets. Fingers millet has higher nutraceutical value because of higher calcium content (0.38%), dietary fibre (18%) and phenolic compound (0.3-3%) (Devi *et al.* 2014). The grains are rich in amino acids, which are lacking in the diets of the poor who eat mostly starchy foods. It was intensively grown in rainfed areas due to its high plasticity in terms of soil type, fertility status, and low water requirement.

Weed infestation was the serious problem in finger millet due to slow initial growth. Only when it reaches the mid-growth phase, finger millet plants achieve sufficient canopy cover to shade and restrict the growth of weeds (Mishra *et al.* 2015). Kujur *et al.* (2019) pointed out that severe crop weed competition resulted in 72% reduction in grain yield in direct sown finger millet. Mahapatra (2021) observed that among the various biotic stresses, weed infestation alone caused 70 per cent yield loss in finger millet.

Herbicidal method of weed control was considered to be the easiest and most viable way of weed management. Kumar *et al.* (2015) noticed lower weed density and weed biomass by using pre-emergence application of bensulfuron-methyl + pretilachlor 10 kg/ha compared to weedy check in drill sown finger millet. Prithvi *et al.* (2015) reported bispyribac-sodium 25g/ha alone at 15 DAT and bispyribac-sodium 25 g/ha at 15 DAT *fb* inter cultivation at 30 DAT resulted in a WCE of 45 and 63%, respectively in transplanted finger millet. Pre-emergence application of oxyfluorfen 50 g/ha resulted in higher grain yield (2720 kg/ha) and straw yield (4924 kg/ha) in finger millet (Shanmugapriya *et al.* 2019).

Mechanical weed control is one of the most traditional and widely used techniques for controlling weeds in millets. Naik *et al.* (2001) found that hoeing at 35 DAS was beneficial in managing the weed

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competition and resulted in the destruction of 40-50% of weeds compared to weedy check in direct sown finger millet. With this background, the present study was carried out with an aim to determine the cost-effective integrated weed management practice for finger millet intercropped in coconut.

Field experiment was laid out at Coconut Research Station, Balaramapuram in randomized block design with 12 treatments replicated thrice during Summer 2021. The treatments adopted for the study were PE application of bensulfuron-methyl + pretilachlor 495 g/ha *fb* wheel hoe weeding (WHW) at 25 DAS, PE application of bensulfuron-methyl + pretilachlor 495 g/ha *fb* bispyribac-sodium 20 g/ha at 25 DAS, PE application of bensulfuron-methyl + pretilachlor 495 g/ha *fb* penoxsulam + cyhalofop-butyl 125 g/ha at 25 DAS, PE application of pyrazosulfuron-ethyl 20 g/ha *fb* WHW at 25 DAS, PE application of pyrazosulfuron-ethyl 20 g/ha *fb* bispyribac-sodium 20 g/ha at 25 DAS, PE application of pyrazosulfuron-ethyl 20 g/ha *fb* penoxsulam + cyhalofop-butyl 125 g/ha at 25 DAS, PE application of oxyfluorfen 50 g/ha *fb* WHW at 25 DAS, PE application of oxyfluorfen 50 g/ha *fb* bispyribac-sodium 20 g/ha at 25 DAS, PE application of oxyfluorfen 50 g/ha *fb* penoxsulam + cyhalofop-butyl 125 g/ha at 25 DAS, WHW at 15 and 30 DAS, hand weeding (HW) at 15 and 30 DAS) and weedy check. The variety used for the study was '*PPR 2700* (*Vakula*)', a high yielding blast resistant variety released from Agricultural Research Station, Perumalapalli, Andhra Pradesh. The crop was raised in the inter-row spaces of coconut in the Coconut Research Station Farm, Balaramapuram, where coconut was planted at a spacing of 7.6 x 7.6 m which received 70% light intensity. Previously the inter-row spaces of coconut were utilized for banana cultivation. The soil was acidic in reaction and texture of the experimental area was sandy loam. The soil was low in available N, medium in available P and high in available K. Rainfall received during the crop season was 129.8 mm. Garden tiller was used to plough the field. The entire experimental site was laid out into 36 treatment plots. Gross plot size of the experimental plots was 4 x 3.6 m and the net plot size was 3x 3 m. Treatment plots were separated with bunds of 30 cm height and width. The seeds were sown at the rate of 5 kg/ha using seed cum fertilizer drill at a spacing of 25 x 15 cm. Fertilizer recommendation followed was 45:22.5:22.5 NPK kg/ha. (KAU, 2016). Farm yard manure (5 t/ha) and lime (250 kg/ha) were uniformly applied to plot at the time of final land preparation. Spray solution used for the study was 500 L/ha. Pre-emergence herbicides were applied on the day of sowing as per the treatments and post-emergence (PoE) herbicides as per the treatments were applied with the help of a crop protective herbicide applicator.

Absolute density of grasses and broad- leaf weeds (BLW) were calculated by randomly placing the quadrant 0.25 x 0.25 m at two places in each treatment plot and weeds present within the quadrant area were counted and expressed as no./m^2. Weed biomass was determined by uprooting the weeds from the same area where the quadrant was placed for recording the absolute density of weeds, later collected weeds were shade dried to reduce the moisture content and then oven dried at 65 °C until a constant weight was attained, average was worked out and expressed as g/m^2. Weed control efficiency was worked out by the formula put forth by Mani and Gautham (1973) and the weed index was worked out by the formula explained by Gill and Vijayakumar (1969). For calculating the weed index the treatment which recorded the highest grain yield was taken as the control treatment.

The number of fingers in the ear head and the ear head weight were recorded from the ten observation plants and the mean value was worked out. Productive tillers per m^2 were recorded by placing quadrate (0.25 x 0.25 m) at two places in each treatment plot and expressed as no./m^2. Grain yield from the net plot area was dried under sun to a constant moisture content of 12% and expressed in kg/ha. Economics was computed by considering the market price of finger millet grain and input costs. Statistical analysis was conducted using Grapes Agri.1, a collection of shiny apps for agricultural research data analysis in R software (Gopinath *et al.* 2021).

Effect on weed flora

Grasses and broad-leaved weeds (BLW) were the major weeds in the experimental site. Among the two, grasses were the predominant one. *Panicum maximum* Jacq., *Setaria barbata* (Lam.) Kunth, and *Digitaria sanguinalis* (L.) Scop. were the three prominent grasses present in the experimental filed. The major BLW present in the experimental plots were *Mimosa pudica* L., *Phyllanthus niruri* L., *Boerhavia diffusa* L. and *Synedrella nodiflora* (L.) Gaertn. Sedges were absent in the experimental field.

Effect on the absolute density of grasses and BLW

Among the weed management practices, PE oxyfluorfen (50 g/ha *fb* WHW at 25 DAS, 50 g/ha *fb* bispyribac-sodium 20 g/ha at 25 DAS and 50 g/ha *fb* penoxsulam+ cyhalofop-butyl 125 g/ha at 25 DAS) resulted in the lowest absolute density of grasses compared to other two PE herbicides tested (bensulfuron-methyl + pretilachlor and pyrazosulfuron-ethyl). Abraham *et al.* (2010) revealed that PE application of oxyfluorfen 150-200 g/ha on four days after transplanting significantly reduced the BLW, grassy weeds and sedges in rice. Data on absolute density of grasses at 40 DAS revealed that, though a reduction in density of grassy weeds were noted in all weed management treatments, the treatments with WHW resulted in lower density of grasses compared to PoE bispyribac-sodium or penoxsulam + cyhalofop-butyl (**Table 1**). This was because of the fact that WHW at 25 DAS effectively uprooted *Panicum maximum* along with the roots, the major grass weed present in the experimental area. Data on absolute density of weeds revealed that, the density of BLW was found to be lesser in PE application of bensulfuron-methyl + pretilachlor and pyrazosulfuron-ethyl treated plots at 40 DAS compared to oxyfluorfen. The result was in agreement with the observations of Yathisha *et al.* (2020) who observed that PE application of bensulfuron-methyl + pretilachlor 198 g/ha effectively controlled the BLW compared to other PE herbicides like atrazine, oxadiargyl, pendimethalin and isoproturon in direct-seeded finger millet. Pal *et al.* (2012) reported that pyrazosulfuron-ethyl was more effective against BLW than sedges and grasses.

Effect on weed biomass and weed control efficiency

Weed management caused significant reduction in weed biomass compared to weedy check (**Table 1**). The percentage reduction in weed biomass in weed management treatments in comparison to weedy check ranged from 82.0 to 98.9% at 40 DAS and 18.6 to 91.8% at 60 DAS, respectively. Patil and Reddy (2014) and Pandey *et al.* (2018) also came to similar conclusion that uncontrolled weed growth in weedy check resulted in higher weed biomass. At 40 DAS, treatment HW at 15 and 30 DAS resulted in the lowest weed biomass and it was followed by PE pyrazosulfuron-ethyl 20 g/ha *fb* penoxsulam + cyhalofop-butyl 125 g/ha. The treatment PE pyrazosulfuron-ethyl 20 g/ha *fb* penoxsulam + cyhalofop-butyl 125 g/ha was statistically at par with PE pyrazosulfuron-ethyl 20 g/ha *fb* WHW at 25 DAS and PE oxyfluorfen 50 g/ha *fb* WHW at 25 DAS. At 60 DAS, PE pyrazosulfuron-ethyl 20 g/ha *fb* WHW at 25 DAS resulted in the lowest weed biomass and it

Table 1. Absolute density of grasses, broad leaf weeds, weed biomass and weed control efficiency as influenced by weed management practices in finger millet

Treatment	Absolute density grasses (no./m^2)		Absolute density BLW (no./ m^2)		Weed biomass (g/m^2)		Weed control efficiency (%)	
	40 DAS	60 DAS	40 DAS	60 DAS	40 DAS	60 DAS	40 DAS	60 DAS
Pretilachlor + bensulfuron-methyl 495 g/ha PE *fb* WHW at 25 DAS	3.32 (10.67)	3.20 (9.33)	1.49 (1.33)	1.90 (2.67)	3.39 (10.51)	8.55 (72.68)	88.3	81.5
Pretilachlor + bensulfuron-methyl 495 g/ha PE *fb* bispyribac-sodium 20 g/ha at 25 DAS	4.43 (18.67)	2.95 (8.00)	1.00 (0.00)	1.00 (0.00)	4.09 (15.98)	14.35 (205.33)	82.3	47.9
Pretilachlor + bensulfuron-methyl 495 g/ha *fb* penoxsulam + cyhalofop-butyl 125 g/ha at 25 DAS	3.95 (14.67)	4.86 (22.67)	1.00 (0.00)	1.52 (1.33)	4.15 (16.24)	13.16 (172.67)	82.0	56.2
Pyrazosulfuron-ethyl 20 g/ha PE *fb* WHW at 25 DAS	3.40 (10.67)	3.78 (13.33)	3.78 (13.33)	1.00 (0.00)	1.58 (1.51)	5.78 (32.40)	98.3	91.8
Pyrazosulfuron-ethyl 20 g/ha PE *fb* bispyribac-sodium 20 g/ha at 25 DAS	4.43 (18.67)	3.20 (9.33)	1.00 (0.00)	1.41 (1.33)	2.21 (3.90)	7.26 (51.87)	95.7	86.8
Pyrazosulfuron-ethyl 20 g/ha PE *fb* penoxsulam + cyhalofop-butyl 125 g/ha at 25 DAS	4.66 (21.33)	3.00 (8.00)	1.90 (2.67)	1.00 (0.00)	1.57 (1.48)	6.14 (36.69)	98.4	90.7
Oxyfluorfen 50 g/ha PE *fb* WHW at 25 DAS	2.24 (4.00)	3.78 (13.33)	3.95 (14.67)	1.91 (2.67)	1.65 (1.71)	10.07 (100.93)	98.1	74.4
Oxyfluorfen 50 g/ha PE *fb* bispyribac-sodium 20 g/ha at 25 DAS	2.75 (6.67)	3.61 (12.00)	3.11 (8.67)	1.000 (0.00)	2.24 (4.02)	12.62 (158.67)	95.5	59.7
Oxyfluorfen 50 g/ha PE *fb* penoxsulam+ cyhalofop-butyl 125 g/ha at 25 DAS	3.40 (10.67)	3.75 (13.33)	1.90 (2.67)	1.000 (0.00)	2.78 (6.72)	11.62 (134.13)	92.5	65.9
WHW at 15 and 30 DAS	3.20 (9.33)	3.78 (13.33)	2.24 (4.00)	1.000 (0.00)	2.00 (3.03)	7.45 (55.33)	96.6	85.9
HW at 15 and 30 DAS	3.57 (12.00)	3.61 (12.00)	3.00 (8.00)	3.000 (8.00)	1.41 (0.97)	17.89 (320.53)	98.9	18.6
Weedy check	6.70 (44.00)	5.97 (34.67)	4.72 (21.33)	3.211 (9.33)	9.55 (90.13)	19.81 (393.73)	0	0
LSD (p=0.05)	0.835	0.612	0.376	0.390	0.134	1.665	-	

PE-Pre-emergence; WHW-wheel hoe weeding; HW-hand weeding; values in parentheses are original values, values are subjected to square root transformation $(\sqrt{x+1})$

was comparable with PE pyrazosulfuron-ethyl 20 g/ha *fb* penoxsulam + cyhalofop-butyl 125 g/ha and PE application of pyrazosulfuron-ethyl *fb* bispyribac-sodium 20 g/ha. Reduction in the density of grasses and BLW in the weed management treatments favoured crop growth and enabled the crop to suppress the weeds effectively. Shanmughapriya *et al*. (2019) reported that PE application of bensulfuron-methyl + pretilachlor 660 g/ha *fb* PoE bispyribac-sodium 25 g/ha significantly reduced the weed biomass in transplanted finger millet. Ramadevi *et al.* 2021) also revealed the superiority of PE application of pyrazosulfuron-ethyl 15 g/ha in reducing the weed biomass in transplanted finger millet. Application of PE herbicides followed by inter-cultivation at 45 DAS resulted in the lowest weed biomass in direct- seeded finger millet (Satish *et al.* 2018). At 40 DAS, the highest WCE was observed in HW at 15 and 30 DAS (98.92%), which was closely followed by PE pyrazosulfuron-ethyl 20 g/ha *fb* penoxsulam + cyhalofop-butyl 125 g/ha (98.35%) and PE pyrazosulfuron-ethyl 20 g/ha *fb* WHW at 25 DAS (98.32%). At 60 DAS, PE pyrazosulfuron-ethyl 20 g/ha *fb* WHW at 25 DAS resulted in the highest WCE (91.8%) which was closely followed by PE pyrazosulfuron-ethyl 20 g/ha *fb* penoxsulam + cyhalofop-butyl 125 g/ha (90.7%). Nibhoria *et al.* (2021) reported that WHW at 20-25 DAS and at 30-35 DAS resulted in higher WCE in pearl millet. Halder *et al.* (2005) also reported higher WCE and lower weed density in rice due to the application of pyrazosulfuron-ethyl 15 g/ha.

Effect on finger millet

Weed management resulted in higher productive tillers/m^2, fingers per ear head and ear head weight compared to weedy check (**Table 2**). Significant reduction in density of grasses and BLW and weed biomass reduced the crop weed competition and nutrient removal by weeds. This has facilitated better utilization of resources by crop. Increase in the availability of nutrients and moisture might have enhanced the nutrient uptake, photosynthesis, and movement of assimilates from source to sink. This in turn resulted in higher productive tillers, fingers per ear head and ear head weight. The treatment PE pyrazosulfuron-ethyl 20 g/ha *fb* WHW at 25 DAS recorded higher number of productive tillers, fingers per ear head and ear head weight compared to other treatments. This was due to effective management of weeds by PE application of pyrazosulfuron 20 g/ha *fb* WHW at 25 DAS. Ramedevi *et al*. (2021) and Prithvi *et al.* (2015) observed similar results in transplanted finger millet. Weed management might have resulted in the increased availability of nutrients and moisture. In addition to weed control, WHW improved the soil aeration and created a soil condition congenial for crop growth. All these factors resulted in the better expression of yield attributes in PE pyrazosulfuron-ethyl 20 g/ha *fb* WHW at 25 DAS (**Table 2**). Weedy check recorded the lowest productive tillers m^2, fingers and ear head weight.

Table 2. Yield attributes, grain yield and weed index as influenced by weed management practices in finger millet

Treatment	Productive tillers (no./m^2)	No. of fingers per ear head	Ear head weight (g)	Grain yield (t/ha)	Weed index (%)
Pretilachlor + bensulfuron-methyl 495 g/ha PE *fb* WHW at 25 DAS	78.0	10.9	10.2	1.34	36.85
Pretilachlor + bensulfuron-methyl 495 g/ha PE *fb* bispyribac-sodium 20 g/ha at 25 DAS	73.3	11.9	8.9	1.29	37.84
Pretilachlor + bensulfuron-methyl 495 g/ha *fb* penoxsulam + cyhalofop-butyl 125 g/ha at 25 DAS	74.7	13.1	9.4	1.30	37.18
Pyrazosulfuron-ethyl 20 g/ha PE *fb* WHW at 25 DAS	93.3	13.3	12.8	2.07	0.00
Pyrazosulfuron-ethyl 20 g/ha PE *fb* bispyribac-sodium 20 g/ha at 25 DAS	84.0	12.7	11.6	1.59	23.04
Pyrazosulfuron-ethyl 20 g/ha PE *fb* penoxsulam + cyhalofop-butyl 125 g/ha at 25 DAS	85.3	12.4	10.6	1.93	6.04
Oxyfluorfen 50 g/ha PE *fb* WHW at 25 DAS	69.3	10.8	9.0	1.16	43.72
Oxyfluorfen 50 g/ha PE *fb* bispyribac-sodium 20 g/ha at 25 DAS	66.0	11.9	9.5	1.11	46.28
Oxyfluorfen 50 g/ha PE *fb* penoxsulam+ cyhalofop-butyl 125 g/ha at 25 DAS	70.0	13.0	9.4	1.26	39.22
WHW at 15 and 30 DAS	80.0	12.9	9.8	1.46	29.63
HW at 15 and 30 DAS	78.7	12.1	10.3	1.30	37.21
Weedy check	60.0	8.1	7.8	0.96	53.88
LSD (p=0.05)	14.82	2.33	1.01	0.21	-

PE-Pre-emergence; WHW-wheel hoe weeding; HW-hand weeding

Table 3. Gross return, net return and B: C ratio as influenced by weed management practices in finger millet

Treatment	Gross return (x10^3 ₹/ha)	Cost of cultivation (x10^3 ₹/ha)	Net return (x10^3 ₹/ha)	B:C ratio
Pretilachlor + bensulfuron-methyl 495 g/ha PE *fb* WHW at 25 DAS	52296	42764	9532	1.22
Pretilachlor + bensulfuron-methyl 495 g/ha PE *fb* bispyribac-sodium 20 g/ha at 25 DAS	51556	40702	10855	1.27
Pretilachlor + bensulfuron-methyl 495 g/ha *fb* penoxsulam + cyhalofop-butyl 125 g/ha at 25 DAS	5200	42202	9799	1.23
Pyrazosulfuron-ethyl 20 g/ha PE *fb* WHW at 25 DAS	82888	41914	40974	1.98
Pyrazosulfuron-ethyl 20 g/ha PE *fb* bispyribac-sodium 20 g/ha at 25 DAS	63776	39852	23925	1.60
Pyrazosulfuron-ethyl 20 g/ha PE *fb* penoxsulam + cyhalofop-butyl 125 g/ha at 25 DAS	77260	41352	35909	1.87
Oxyfluorfen 50 g/ha PE *fb* WHW at 25 DAS	46592	41574	5018	1.12
Oxyfluorfen 50 g/ha PE *fb* bispyribac-sodium 20 g/ha at 25 DAS	44444	39512	4933	1.13
Oxyfluorfen 50 g/ha PE *fb* penoxsulam+ cyhalofop-butyl 125 g/ha at 25 DAS	50296	41012	9285	1.23
WHW at 15 and 30 DAS	58372	44552	13821	1.31
HW at 15 and 30 DAS	52148	47077	5072	1.11
Weedy check	38224	35077	3148	1.09

PE-Pre-emergence; WHW-wheel hoe weeding; HW-hand weeding

Effect on grain yield and weed index

Weed management resulted in a yield enhancement of 16.3 to 116.8% compared to weedy check (**Table 2**). The treatment PE pyrazosulfuron-ethyl 20 g/ha *fb* WHW at 25 DAS resulted in the highest grain yield (2.072 t/ha) which was comparable with PE pyrazosulfuron-ethyl 20 g/ha *fb* penoxsulam + cyhalofop-butyl 125 g/ha at 25 DAS (1.93 t/ha). The yield enhancement observed in these treatments was due to the production of higher number of panicles/m^2, fingers per ear head and ear head weight (**Table 2**). The result was in agreement with the findings of Pal *et al*. (2012) and Raj and Syriac (2015) in rice.

The percent reduction in yield due to weed infestation was denoted by weed index. Weed competition throughout the crop season resulted in a yield loss of 53.9% in weedy check. Amongst the treatments, the lowest weed index was recorded in PE pyrazosulfuron-ethyl 20 g/ha *fb* WHW at 25 DAS which was followed by PE pyrazosulfuron-ethyl 20 g/ha *fb* penoxsulam + cyhalofop-butyl 125 g/ha at 25 DAS. Pre-emergence application of pyrazosulfuron-ethyl *fb* WHW at 25 DAS or PoE penoxsulam + cyhalofop-butyl at 25 DAS resulted in a competition free environment which might have increased the availability and uptake of nutrients ultimately resulted in higher panicles/m^2 with higher yield (**Table 2**). Kujur *et al*. (2018) reported that weed management resulted in significant improvement in grain yield with lower weed index compared to weedy check in finger millet.

Effect on economics

The highest gross return was observed in the treatment PE pyrazosulfuron-ethyl 20 g/ha *fb* WHW at 25 DAS (82,888 ₹/ha) and it was followed by PE pyrazosulfuron-ethyl 20 g/ha *fb* penoxsulam + cyhalofop-butyl 125 g/ha at 25 DAS (77, 260 ₹/ha) (**Table 3**). Similar to gross return, the highest net return was also observed in PE pyrazosulfuron-ethyl 20 g/ha *fb* WHW at 25 DAS (40974 ₹/ha) and it was succeeded by PE pyrazosulfuron-ethyl 20 g/ha *fb* penoxsulam + cyhalofop-butyl 125 g/ha at 25 DAS (35909 ₹/ha). Similar trend followed for gross and net return. Higher grain yield resulted in higher gross return, net return, and B: C ratio in PE pyrazosulfuron-ethyl 20 g/ha *fb* WHW at 25 DAS and PE pyrazosulfuron-ethyl 20 g/ha *fb* penoxsulam + cyhalofop-butyl 125 g/ha at 25 DAS. Ramadevi *et al.* (2021) also reported that PE application of pyrazosulfuron-ethyl 15 g/ha resulted in higher grain yield and monetary returns in finger Weedy check resulted in the lowest gross return (38,224 ₹/ha), net return (3148 Rs/ha) and B:C ratio (1.09) due to lower grain yield resulted from severe crop weed competition.

It was concluded that yield and yield attributes of finger millet intercropped in coconut were significantly influenced by weed management. Significant reductions in weed density and weed biomass were observed due to weed management. Considering the weed control efficiency, weed index, grain yield, net return and B: C ratio, pre-emergence application of pyrazosulfuron-ethyl 20 g/ha *fb* wheel hoe weeding at 25 DAS could be adjudged as the cost-effective weed management practice for finger millet intercropped in coconut.

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