3.3 Crop growth rate (CGR)

Crop growth rate followed a common temporal pattern across treatments: it was lower during 30-45 DAS, increased during 45-60 DAS, reached its maximum during 60-75 DAS, and declined during 75-90 DAS (Table 4). Bispyribac sodium + 2,4-D had the greatest CGR during the first three intervals, although it was statistically grouped with several treatments during 30-45 and 60-75 DAS. Bispyribac sodium and bispyribac sodium + 2,4-D had the greatest CGR during 75-90 DAS and were in the same statistical group. The weedy check had the lowest CGR during 45-60, 60-75, and 75-90 DAS.

Table 4 Effect of herbicides on CGR at different time interval on direct seeded rice cultivation at Chitwan during 2024

Treatments	Crop growth rate (g/m^2/day)			
	30-45 DAS	45-60 DAS	60-75 DAS	75-90 DAS
Weedy Check	2.22^{c}	10.6^{c}	48.0^{c}	25.1^{c}
Weedfree	3.12^{ab}	22.3^{ab}	74.3^{a}	40.7^{b}
Pendimethalin	2.62^{bc}	20.1^{b}	62.4^{b}	36.8^{b}
Pretilachlor	3.02^{ab}	20.1^{b}	70.3^{ab}	37.5^{b}
Bispyribac sodium	2.32^{c}	21.6^{ab}	75.6^{a}	50.9^{a}
Pendi+2,4-D	2.22^{c}	17.15^{b}	60.6^{b}	29.6^{c}
Pretilachlor+2,4-D	1.72^{d}	17.0^{b}	66.9^{ab}	36.6^{b}
Oxadiargyl	3.02^{ab}	19.2^{b}	70.4^{ab}	38.7^{b}
Bispyribac Sodium+ 2,4-D	3.40^{a}	22.8^{a}	72.7^{a}	52.0^{a}
SEm±	0.18	1.25	2.90	2.90
CV%	20.82	19.76	13.02	22.53
Mean	2.63	18.98	66.80	38.66

Note: Treatment means followed by the same letter (s) within the column are non-significantly different among each other at 5% level of significance. DAS= Days after sowing, SEm = Standard error of mean and CV= Coefficient of variation

3.4 Yield attributes

Treatment effects were significant for effective tillers, panicle length, filled grains, unfilled grains, and sterility percentage. Bispyribac sodium + 2,4-D and bispyribac sodium had the greatest effective-tiller values, with 287 and 284 tillers per square meter, respectively, and were statistically grouped together (Table 5). The weedy check had the lowest value, with 151 tillers per square meter. Panicle length was greatest with bispyribac sodium (25.8 cm) and bispyribac sodium + 2,4-D (25.7 cm), both in the same statistical group and both greater than the weedy check (22.9 cm).

Bispyribac sodium + 2,4-D had the greatest number of filled grains (161 grains per panicle), followed by bispyribac sodium (158 grains per panicle); these treatments were statistically grouped together. The weedy check had the lowest filled-grain value (132 grains per panicle). The weedy check had the highest unfilled-grain count (39 grains per panicle) and sterility (22.81%), while all weed-management treatments were in the same statistical group for these two variables.

3.5 Test weight (1000-grain weight)

1000-grain weight differed significantly among treatments. The weed-free treatment had the numerically greatest value (24.8 g) and was statistically grouped with bispyribac sodium + 2,4-D (24.2 g), bispyribac sodium (24.0 g), and oxadiargyl (24.0 g). The weedy check had the lowest value (21.1 g).

3.6 Grain yield, straw yield and harvest index

Grain yield was lowest under the weedy check (2.1 t/ha). Bispyribac sodium (6.1 t/ha) and bispyribac sodium + 2,4-D (6.0 t/ha) had the greatest numerical yields and were statistically grouped together. The weed-free treatment