

2.8 Statistical analysis

All the recorded data were arranged systematically treatment wise under three replications using Microsoft Excel version 16.89.1. To determine the significant result between the treatments, Analysis of variance (ANOVA) was carried out using R studio version 4.4.1 and DMRT was used for mean separation at 5% level of significance ($p < 0.05$).

3 Results and Analysis

3.1 Germination percentage, mean germination time (MGT) and days to 50% germination (T_{50})

The results on germination percentage, mean germination time (MGT) and days to 50% germination (T_{50}) affected by different seed priming method are presented in Table 2. Germination percentage, mean germination time, and days to 50% germination were significantly affected by different seed priming techniques.

Table 2 Effect of seed priming on germination percentage, mean germination time (MGT) and days to 50 % germination (T_{50}) of cucumber (*Cucumis sativus* cv. Bhaktapur Local) in Syangja, Nepal, 2024

Treatments	Germination parameters		
	Germination percentage	MGT (Days)	T_{50} (Days)
Control	73.34 ^c	6.90 ^a	6.83 ^a
Hot water (45 °C for 5 minutes)	88.00 ^a	6.30 ^b	6.00 ^b
GA ₃ 100 ppm	84.00 ^{ab}	6.22 ^{bc}	6.00 ^b
GA ₃ 200 ppm	81.34 ^{abc}	6.34 ^{bc}	6.00 ^b
KNO ₃ 1%	80.67 ^{abc}	6.06 ^c	6.00 ^b
KNO ₃ 3%	80.00 ^{abc}	6.19 ^{bc}	6.00 ^b
Cow urine 5%	77.34 ^{bc}	6.27 ^{bc}	6.00 ^b
Cow urine 10%	80.00 ^{abc}	6.26 ^{bc}	6.00 ^b
Vermiwash 10%	76.67 ^{bc}	6.17 ^{bc}	6.00 ^b
Vermiwash 20%	80.67 ^{abc}	6.41 ^b	6.00 ^b
CV (%)	5.52	1.98	0.75
LSD _{0.05}	7.54	0.21	0.07
Grand mean	80.20	6.31	6.08
SEm (\pm)	2.55	0.07	0.02
F-test	*	***	***

Note: Mean within the column followed by the same letter/s are not significantly different at 5% level of significance by DMRT. * Significant at 5% ($p < 0.05$), ** Significant at 1% ($p < 0.01$), *** Significant at 0.1% ($p < 0.001$), NS= non-significant at 5% ($p > 0.05$), SEm= Standard Error of mean, LSD= Least significant difference, CV= Coefficient of variance, MGT= Mean germination time and T_{50} = Days to 50% germination

Significantly the highest germination percentage (88.00%) was found in hot water (45 °C for 5 minutes). GA₃ 100 ppm (84.00%), GA₃ 200 ppm (81.34%), KNO₃ 1% (80.67%), Vermiwash 20% (80.67%), KNO₃ 3% (80.67%) and Cow urine 10% (80.00%), also showed increased germination percentage but were non-significant among themselves (LSD=7.54), while the lowest germination percentage (73.34%) was observed in control.

Significantly the highest mean germination time was recorded in control (6.90 days), while the lowest MGT was found in KNO₃ 1% (6.06 days), which was not significantly different from Vermiwash 10% (6.17 days), KNO₃ 3% (6.19 days), GA₃100 ppm (6.22 days), Cow urine 10% (6.26 days), Cow urine 5% (6.27 days) and GA₃ 200 ppm (6.34 days). Significantly the highest T_{50} (6.83 days) was found in control and the lowest T_{50} was found in hot water (6.00 days) which was not significantly different from Vermiwash 10% and 20%, Cow urine 5% and 10%, KNO₃ 1% and 3%, GA₃ 100 ppm and 200 ppm.

3.2 Seed vigour index (SVI-I and SVI-II) and speed of germination (BRI)

The results on Seed vigour index I (SVI-I), Seed vigour index II (SVI-II) and speed of germination (BRI) are presented in Table 3. Significantly the highest SVI-I (2,643.83) was found in hot water (45 °C for 5 minutes)