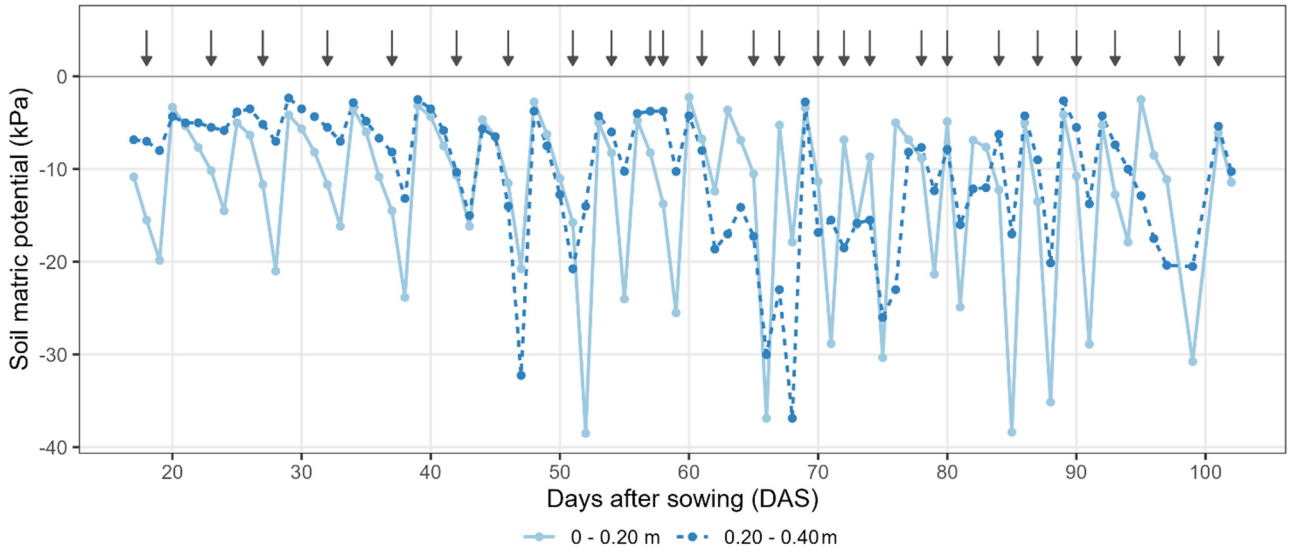

Figure S1. Soil matric potential (kPa) of the reference treatment (I100VR) at depths of 0–0.20 and 0.20–0.40 meters throughout the soybean growing season. The arrows indicate the days on which irrigation was applied.

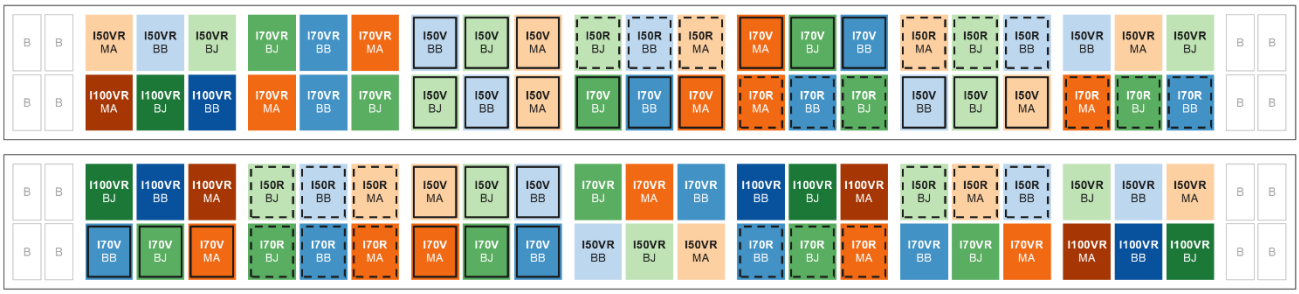

Figure S2. Experimental design used in this study. I100VR: irrigation applied to maintain soil moisture close to field capacity throughout the entire growing season, considered the reference irrigation level (100%); I70VR: 70% of the reference irrigation throughout the growing season; I50VR: 50% of the reference irrigation throughout the crop cycle; I70V: 70% of the reference irrigation during the vegetative stage; I50V: 50% of the reference irrigation during the vegetative stage; I70R: 70% of the reference irrigation during the reproductive stage (R4–R6); and I50R: 50% of the reference irrigation during the reproductive stage. BJ (*Bradyrhizobium japonicum*; base inoculant), BB (*Beauveria bassiana* + base inoculant), and MA (*Metarhizium anisopliae* + base inoculant). B—border.

Table S1. F-values and p-values (in parentheses) from the analysis of variance for photosynthetic rate, stomatal conductance, transpiration, and leaf water potential of soybean at the vegetative (41 days after sowing—DAS) and reproductive (95 DAS) stages.

Variables	Irrigation (I)	Inoculant (F)	I × F
Vegetative stage			
Photosynthetic rate	8.30 (<0.001)	0.56 (0.573)	3.43 (0.002)
Stomatal conductance	12.89 (<0.001)	1.23 (0.304)	1.95 (0.059)
Transpiration	12.35 (<0.001)	1.89 (0.165)	2.84 (<0.001)
Leaf water potential	4.10 (0.007)	0.67 (0.517)	4.98 (<0.001)
Reproductive stage			
Photosynthetic rate	22.30 (<0.001)	3.44 (0.042)	3.83 (<0.001)
Stomatal conductance	11.26 (<0.001)	0.23 (0.795)	4.14 (<0.001)
Transpiration	30.42 (<0.001)	1.72 (0.193)	4.65 (<0.001)
Leaf water potential	0.87 (0.527)	5.10 (0.011)	3.40 (0.002)

Table S2. F-values and p-values (in parentheses) from the analysis of variance for grain yield, number of pods per plant, 100-grain weight, irrigation water productivity, stem diameter, and plant height of soybean.

Variables	Irrigation (I)	Inoculant (F)	I × F
Grain yield	2.77 (0.044)	7.86 (0.002)	1.63 (0.151)
Number of pods per plant	32.47 (<0.001)	3.41 (0.043)	4.71 (<0.001)
100-grain weight	5.45 (0.002)	0.52 (0.599)	0.92 (0.545)
Irrigation water productivity	4.69 (0.004)	6.08 (0.007)	1.28 (0.290)
Stem diameter	6.02 (0.001)	0.52 (0.598)	1.39 (0.237)
Plant height	8.63 (<0.001)	0.26 (0.771)	1.02 (0.450)
Leaf area index	7.23 (0.001)	3.90 (0.032)	2.28 (0.035)