Appendix 3.

CONTENTS:

Supporting information S1: Study Coding Glossary

STUDY CODE: Assigned numerical ID for publication included

NUMBER OF STUDIES: Number of studies included in the meta-analysis

PUBLICATION: First author and year of publication, e.g. Gue *et al*., 2004

Microbial SPECICES: Generic and species name of treatment organism, e.g. *Pseudomonas putida*

PLANT SPECIES: Generic and species name of plant studied, e.g. *Lycopersicon esculentum*

PLANT FAMILY: Taxonomy of different plant species based on plant family

LIFE CYCLE: Growth variables, such as annual or perennial plants

STUDY SITE: The effect of BCAs different among study locations, such as field or green house conditions

DURATION: Experimental days/weeks/months.

PREDICTOR VARIABLE: Measures were grouped into disease incidence, disease severity, shoot, root and total dry weight, shoot, root and total fresh weight, plant height, shoot and root length, crop yield

UNIT: Measures were reported in different units

SAMPLE SIZE: Number of replicates used for the experimental analysis

Xc: Control mean

SDc: Control standard deviation

Xe: Experimental mean

SDe: Experimental standard deviation

R: Response ratio (Treatment/Control i.e. with inoculation/without inoculation)

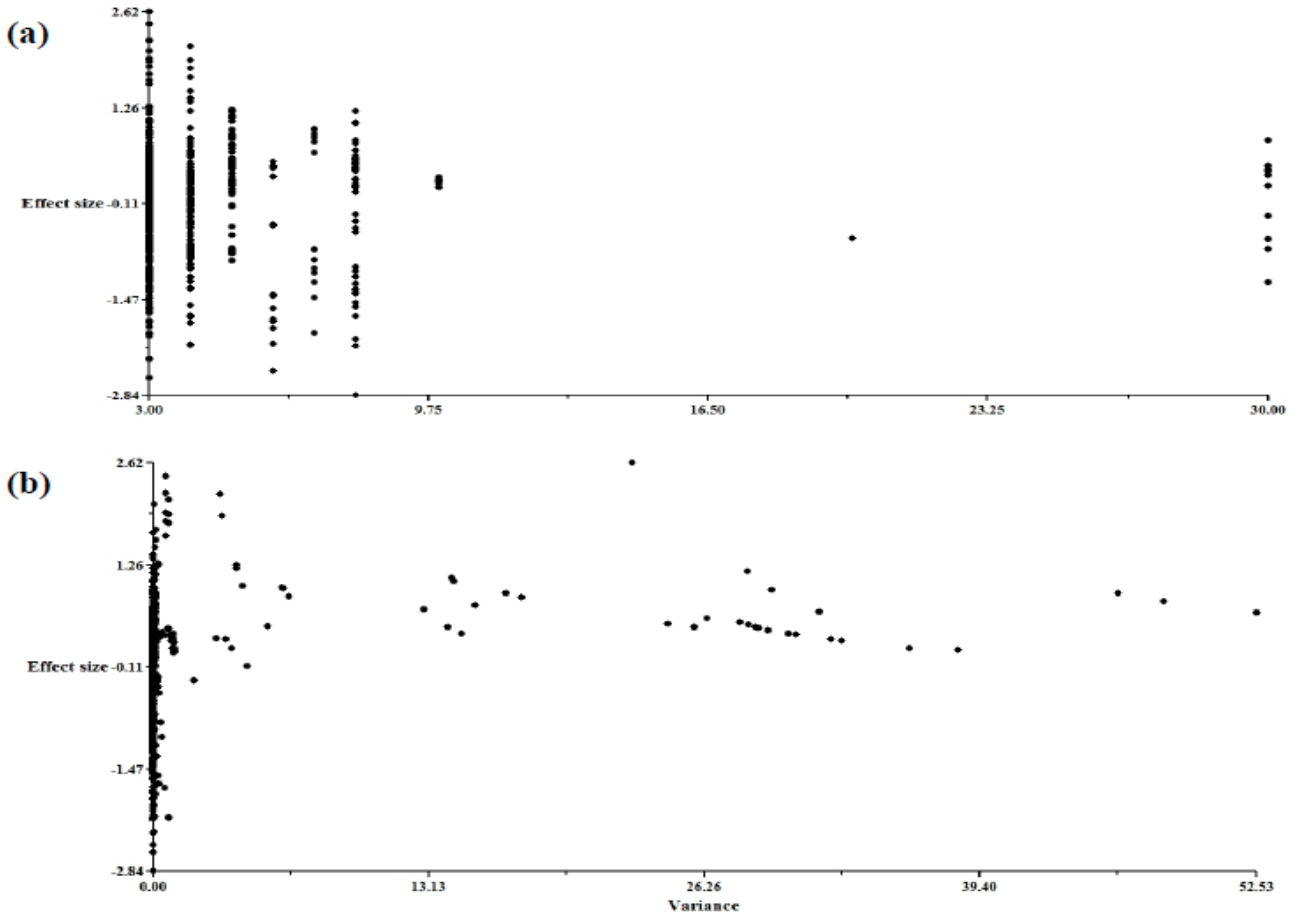
lnR: Log response ratio (Effect size calculations with Meta-win v2.1)

Var(lnR): Variance of log response ratio

Supporting information S2: Publication bias

We tested our datasets for publication bias by plotting the effect size effect size against the sample size (replicates) and variance (within-study variance; Egger et al., 1997).

Fig S1. Scatterplots of effect size against (a) sample size (replicates) and (b) variance for *BCAs inoculated plants.* There were patterns suggesting the existence of a publication bias, as would be evident by funnel symmetry based on variance (Nagakawa and Santos, 2012).



Supporting information S3: Details of Sensitivity analysis

Sensitivity Analysis

A sensitivity analysis was conducted to test for any disproportional impact on studies. However, we only applied this procedure on independent categorical variables significantly affecting BCAs inoculation (*disease incidence*, *disease severity*, fresh weight, *dry weight*, *root length* and *crop yield* dataset). The sensitivity analysis was done in MetaWin v2.1 by sequentially excluding one study at a time from the dataset. After excluding a study, a new random effects meta-analysis was performed and the effect size estimate and 95% BS CIs were compared with those of the complete dataset. Effect size estimates and 95% BS CIs for each level of the significant categorical independent variables were also investigated.

If the BS CIs did not include the effect size estimate of the complete dataset, then this specific study had a disproportional impact. Consequently, the meta-analysis of the complete dataset had to be repeated without this specific study.

Fig. S2. Sensitivity analysis of *disease incidence* on effect of BCAs inoculation. Effect size and 95% BS CIs were presented for all (overall effect with no study excluded) and sequentially exclusion of one study. The values on the x-axes represented study ID of excluded study. No study with disproportional impact was detectable.

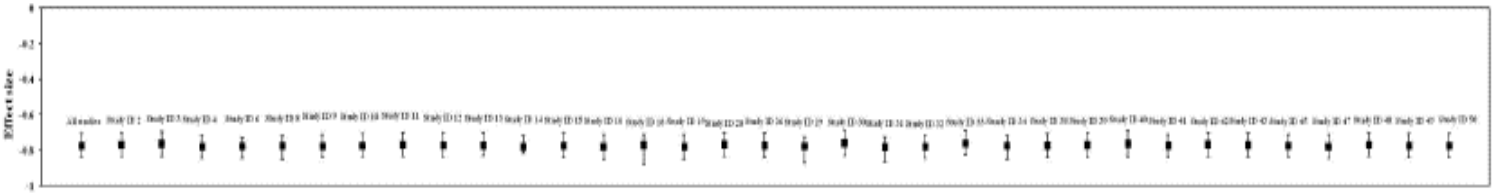


Fig. S3. Sensitivity analysis of *disease severity* on effect of BCAs inoculation. Effect size and 95% BS CIs were presented for all (overall effect with no study excluded) and sequentially exclusion of one study. The values on the x-axes represented study ID of excluded study. No study with disproportional impact was detectable.

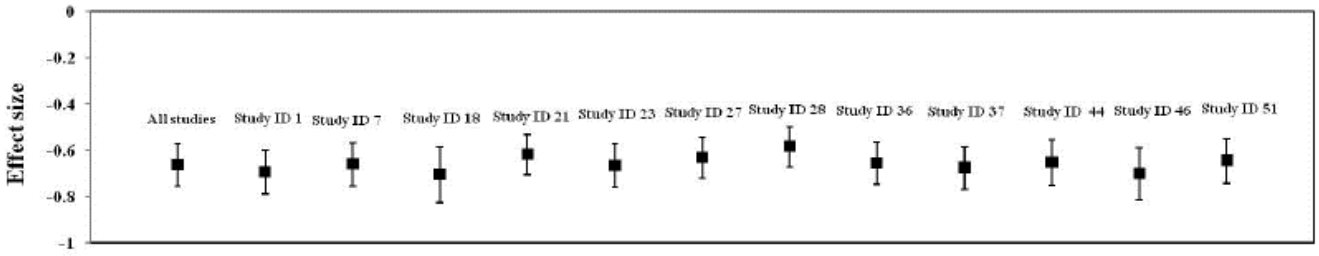


Fig. S4. Sensitivity analysis of *fresh weight* on effect of BCAs inoculation under salt stress. Effect size and 95% BS CIs were presented for all (overall effect with no study excluded) and sequentially exclusion of one study. The values on the x-axes represented study ID of excluded study. No study with disproportional impact was detectable.

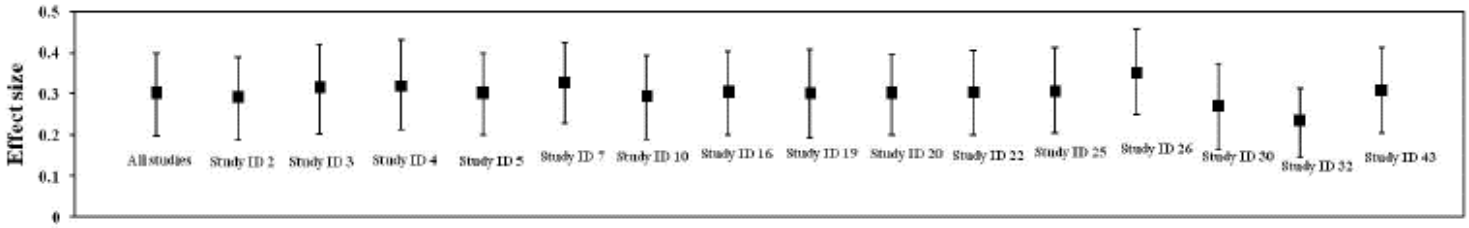


Fig. S5. Sensitivity analysis of *dry weight* on effect of BCAs inoculation under salt stress. Effect size and 95% BS CIs were presented for all (overall effect with no study excluded) and sequentially exclusion of one study. The values on the x-axes represented study ID of excluded study. No study with disproportional impact was detectable.

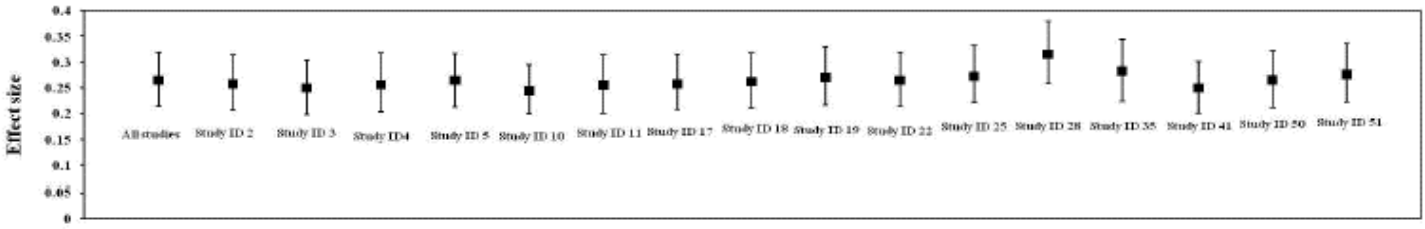
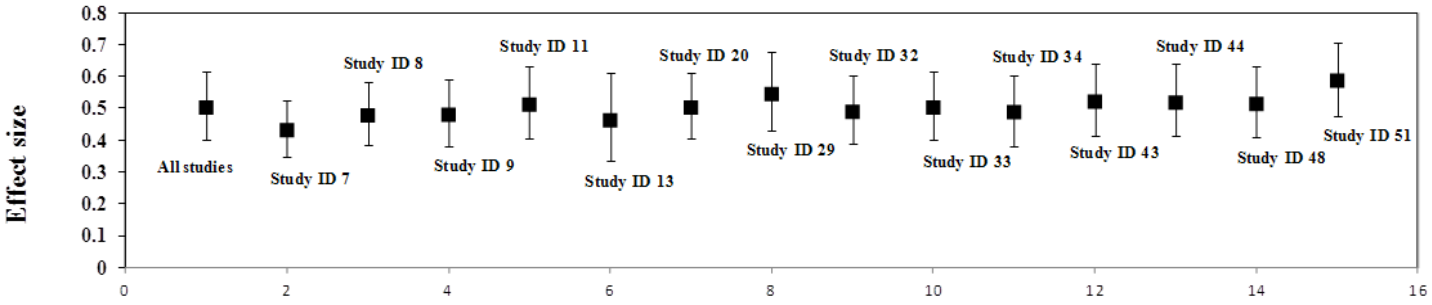


Fig. S6. Sensitivity analysis of *yield* on effect of BCAs inoculation. Effect size and 95% BS CIs were presented for all (overall effect with no study excluded) and sequentially exclusion of one study. The values on the x-axes represented study ID of excluded study. No study with disproportional impact was detectable.



Supporting Information S3: Random-effects categorical model analysis

Fig S7. Effect of BCAs on plant growth promotion. Error bars are means ± 95 % BS CIs. Where the BS CIs do not overlap the horizontal dashed lines, the effect size for a parameter is significant at P < 0.05. All effect sizes differed significantly from zero (chi-square tests, *** $P < 0.001$, ** $P < 0.01$, NS = $P > 0.05$). n = number of studies included in the meta-analysis