A close-up of a brown circle

Description automatically generated

**Fig. A.1:** Black-brown pigment developed Burundi isolate BDI-IS1. This isolate BDI-IS1 (later identified as *B. nakamurai* BDI-IS1) was grown on tryptic soy agar (TSA) and incubated at 30°C for 72h.

A collage of images of a molecule

Description automatically generated

**Fig. A.2:** MS2 patterns of surfactin (A) and iturin A (B), and plantazolicin (C). Analysis was performed with the tandem mass spectrometry (MS2) in a positive mode. Plantazolicin MS2 profile (C) is provided together with chemical structures highlighting of the main fragmentation patterns of the compound.

A collage of photos of plants

Description automatically generated

**Fig. A.3:** Scale developed for the evaluation of tomato early blight (A) and maize northern leaf blight (B). The scale is based on necrotic leaf area, with tomato early blight scored on a scale of 1 to 9, where 1 = 0-5% of leaf area affected by the disease, 3 = 5-10%, 5 = 10-20%, 7 = 20-50% and 9 = 50-100%. Northern leaf blight was also scored on a scale from 1 to 9, where 1 = 0% of leaf area affected, 2 = 10%, 3 = 20%, 4 = 30%, 5 = 40%, 6 = 50%, 7 = 60%, 8 = 70%, 9 = 80-100%. Asymptomatic samples are not included in the maize northern leaf blight scale but will obviously have 0% necrotic area.

A collage of graphs and diagrams

Description automatically generated

**Fig. A.4:** Biocontrol efficacy of QST713 against tomato early blight (TEB) and nothern corn leaf blight (NLB). A&C. Reduction in disease severity of TEB and NLB on plants treated in the roots (blue) or leaves (red) with QST713 followed by inoculation with *Alternaria solani* or *Exserohilum turcicum*, respectively, and control plants (in green) inoculated with the respective fungus, under greenhouse conditions. Each point in graphs A and C represents the mean (±SE) of disease severity from four replicates (n=4) and three replicates (n=3) for experiments one and two, respectively. B&D. Protection index (PI) of QST713 when applied to roots or leaves of tomato (B) and maize (D) plants inoculated with *A. solani* and *E. turcicum*, respectively. PIs represent means (± SE) of two independent experiments with four (red) and three (black) replicates per treatment for experiment one (n = 4) and two (n = 3), respectively. Means of PI are calculated from area under progress curve (AUDPC) data, which in turn depend on disease severity scores and the time interval between successive recording points (see formula in methods). The differences between PI of BDI-IS1 obtained from root and leaf treatment were analyzed using t-test method and there was no significant difference (ns) at *p-value* ≤5%.

A graph of different sizes and colors

Description automatically generated with medium confidence

**Fig. A.5:** Comparison of protection provided by BDI-IS1 and QST713 against TEB and NLB.Protection index (PI) of BDI-IS1 and QST713 when applied to roots or leaves of tomato (A) and maize (B) plants inoculated with *A. solani* and *E. turcicum*, respectively. PIs represent means (± SE) of two independent experiments (n = 7) with four and three replicates per treatment for experiment one and two, respectively . Means of PI are calculated from area under progress curve (AUDPC) data, which in turn depend on disease severity scores and the time interval between successive recording points (see formula in section 2.7). The differences between PI of BDI-IS1 and QST713 obtained from root and leaf treatment were analyzed using t-test method, ns implies that there was no significant difference, while \* shows significant statistical difference at p-value ≤5%.

A diagram of different colored lines

Description automatically generated

**Fig. A.6**: Putative biosynthetic gene clusters for new compounds in BDI-IS1 DNA genome. Prediction was performed with AntiSMASH 7.0 in a relaxed detection strictness mode. The architecture of the genes was adapted in line with the information provided by the software.

A collage of different graphs

Description automatically generated

**Fig. A.7:** Biocontrol efficacy of BDI-IS1 and QST713 against tomato early blight (TEB) and nothern corn leaf blight (NLB).Reduction in disease severity of TEB (A&C) and NLB (B&D) on plants treated in the roots (blue) or leaves (red) with BDI-IS1 (A & B) or QST 713 (C&D) followed by inoculation with *A. solani* or *E. turcicum*, respectively, and control plants (in green) inoculated with the respective fungus under greenhouse conditions. Each time point represents the mean (±SE) of disease severity from three replicates (n=3) and four replicates (n=4) for TEB and NLB in experiments two and one, respectively. The difference between DS was analyzed using general linear mixed models at *p-value* ≤5% (Table A.4 & A.5).