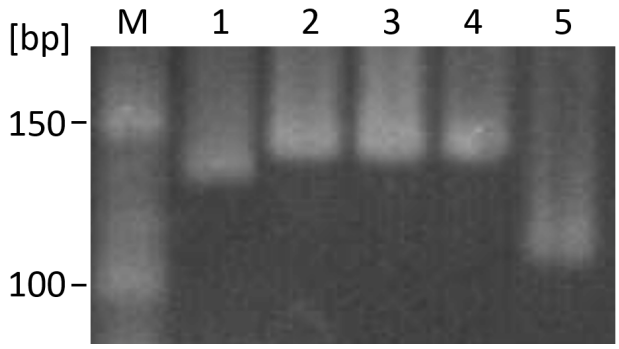
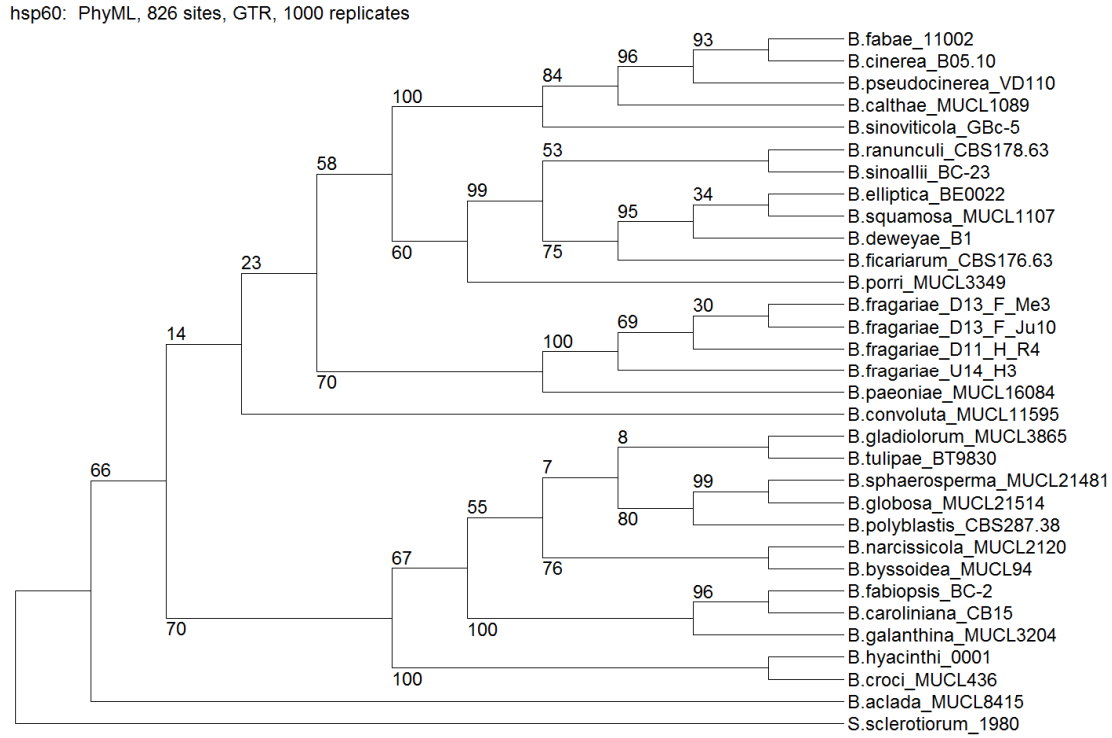


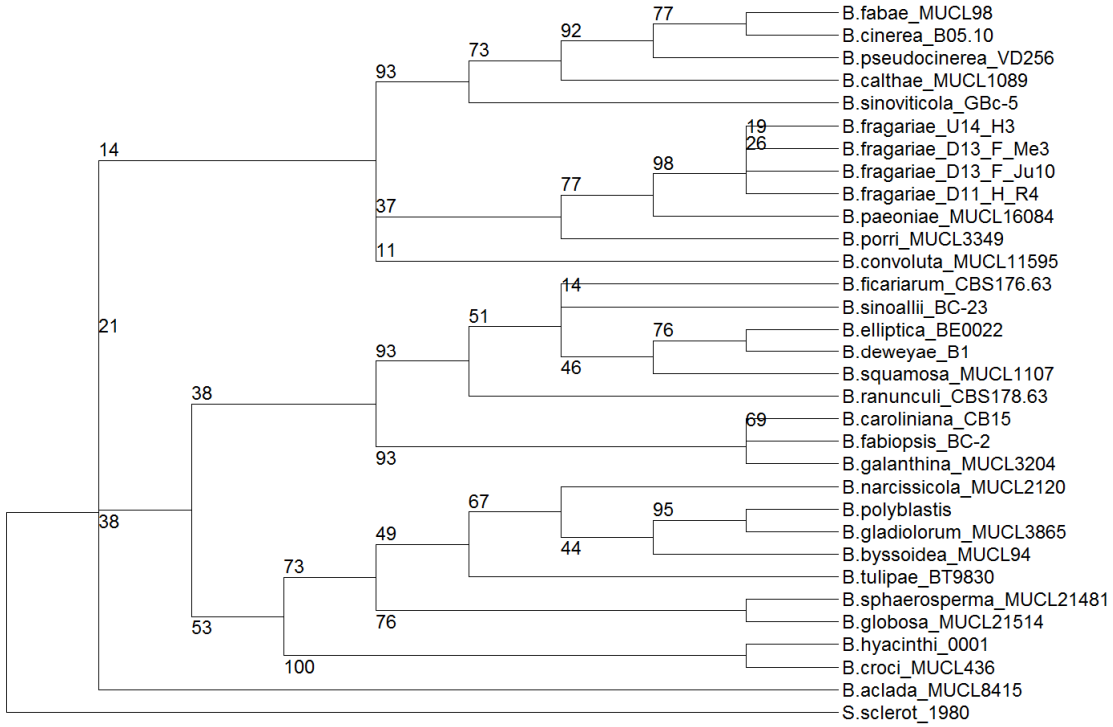
Fig. S1: PCR products of *B. cinerea* strain B05.10 (1), *B. fragariae* strains D13_F_Me3 (2), D11_H_R4 (3), D14_F_Ju20 (4), and *B. pseudocinerea* strain VD110 (5) with primer pair Mrr1-spez-F/-R .

A



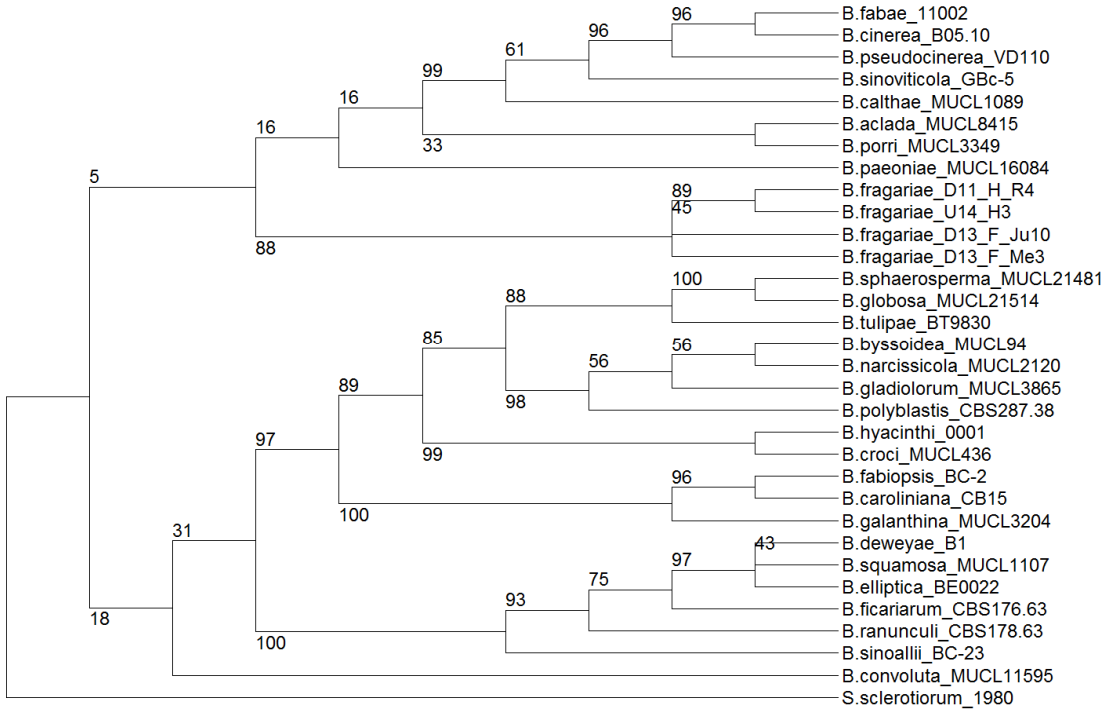
B

g3pdh: PhyML, 804 sites, GTR, 1000 replicates



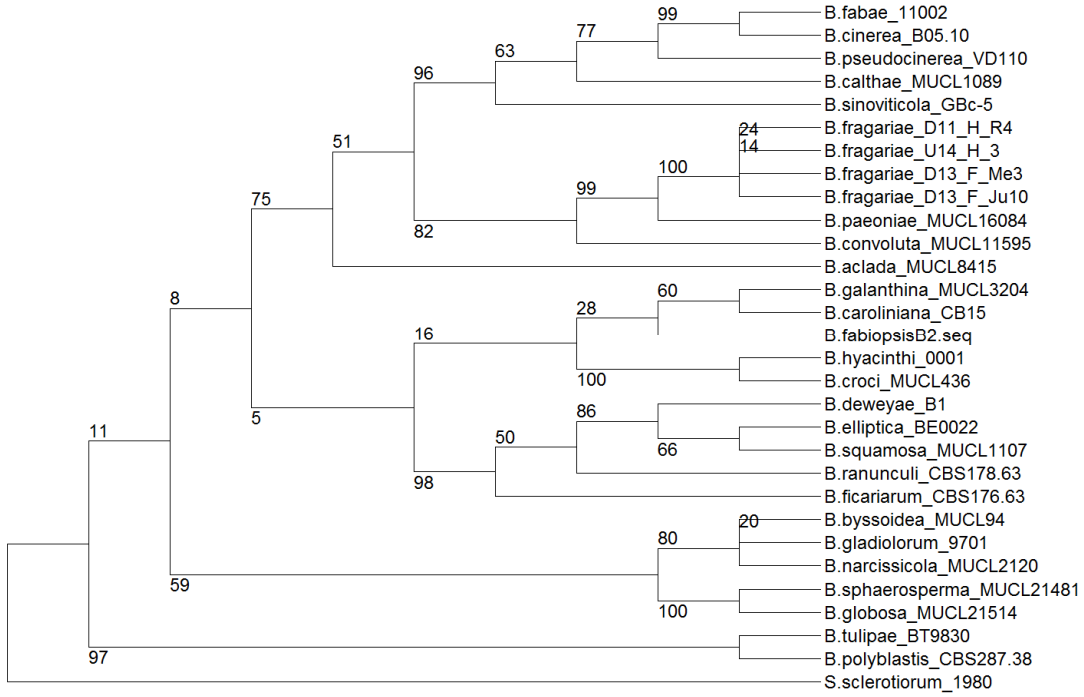
C

rpb2: PhyML, 794 sites, GTR, 1000 replicates



D

nep1: PhyML, 581 sites, GTR, 1000 replicates



E

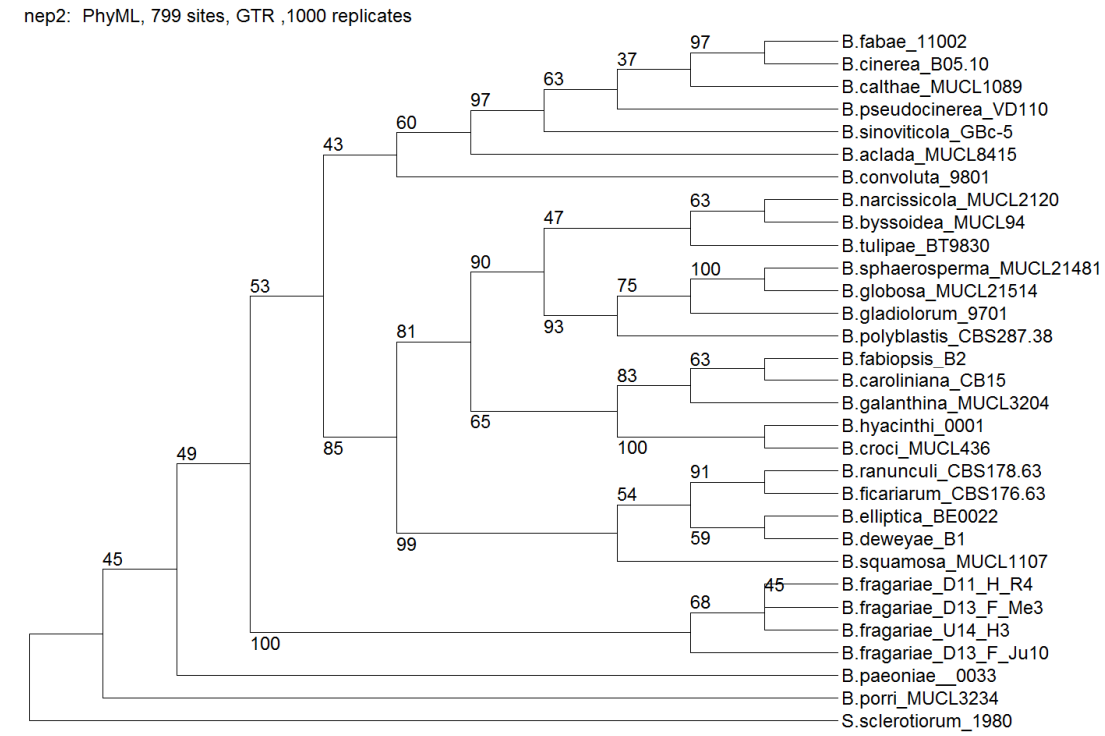


Fig. S2: Phylogenetic trees of *Botrytis* spp., including four strains of *B. fragariae* from Germany (strains D11_H_R4, D13_F_Me3, D13_D_F_Ju10) and South Carolina (strain U14_H3), based on combined sequences of *hsp60* (A), *g3pdh* (B), *rpb2* (C), *nep1* (D) and *nep2* (E). *Sclerotinia sclerotiorum* was used as outgroup.

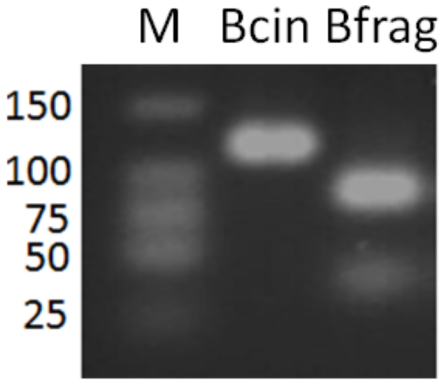


Fig. S3: Identification of *B. fragariae* by PCR-RFLP. Amplification with primers G3PDH_785_R/ G3PDH_665_F results in a 121 bp product that is cleaved by BsaJI, resulting in 86 bp and 35 bp fragments only with DNA of *B. fragariae* but not with *B. cinerea* or any other *Botrytis* species (data not shown).

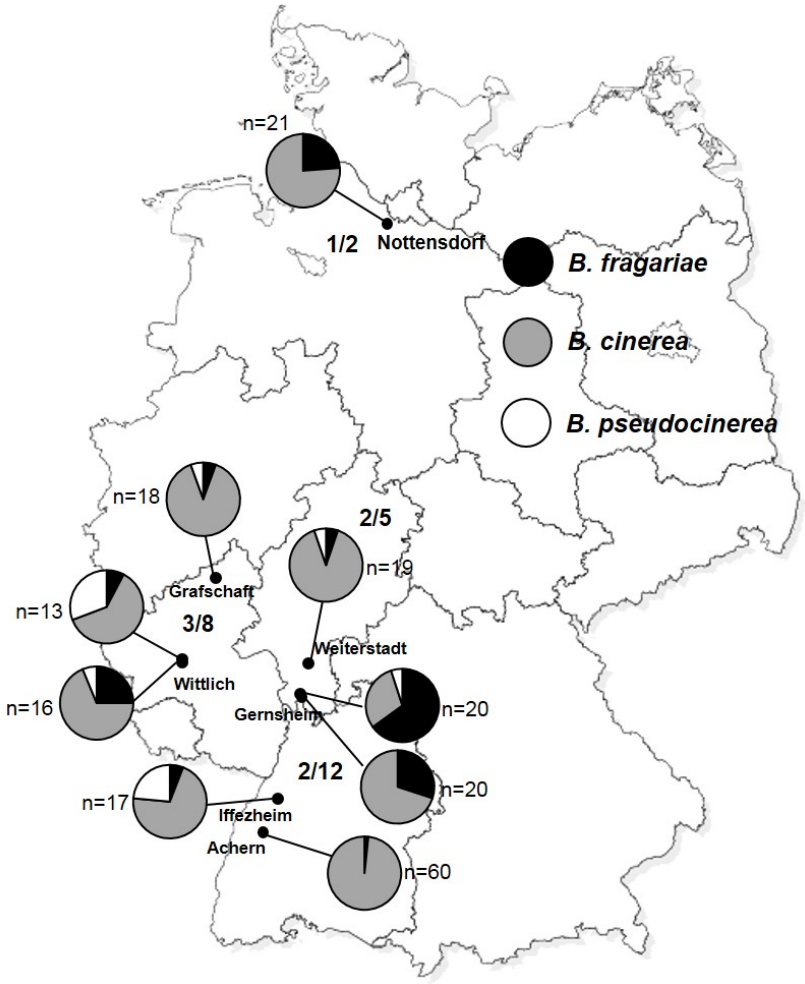


Fig. S4: Frequency of occurrence of *B. fragariae*, *B. cinerea* and *B. pseudocinerea* in Germany. Fields are shown in which *B. fragariae* was found and all isolates (n) were identified to the species level. The proportion of fields in which *B. fragariae* was observed is also indicated.

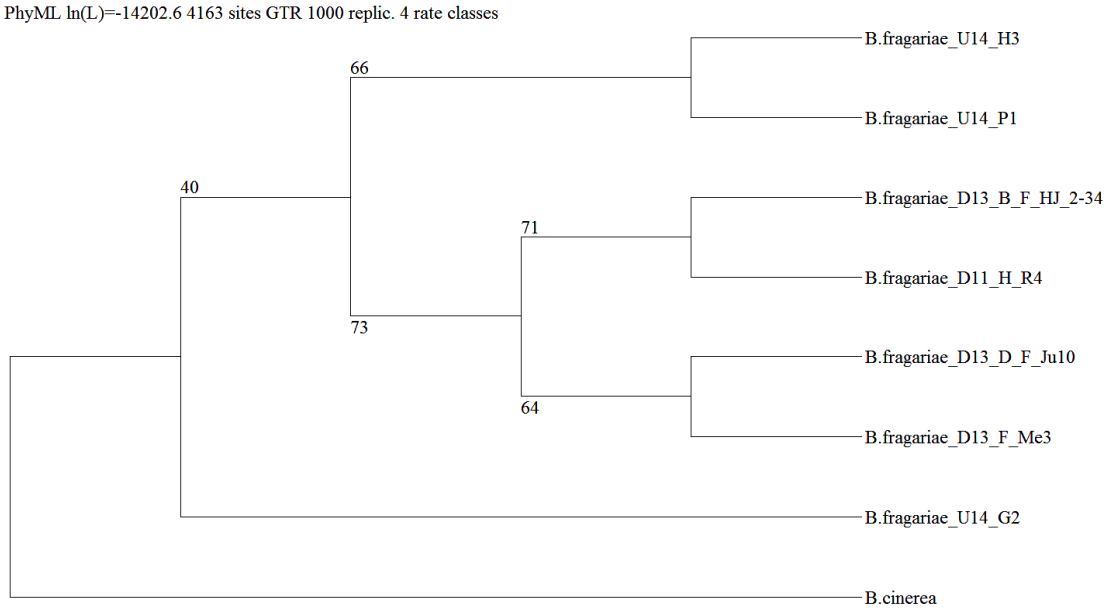


Fig. S5: Phylogenetic tree of four German and three US-American *B. fragariae* strains, based on *hsp60*, *g3pdh*, *rpb2*, *nep1* and *nep2*, using *B. cinerea* as outgroup.

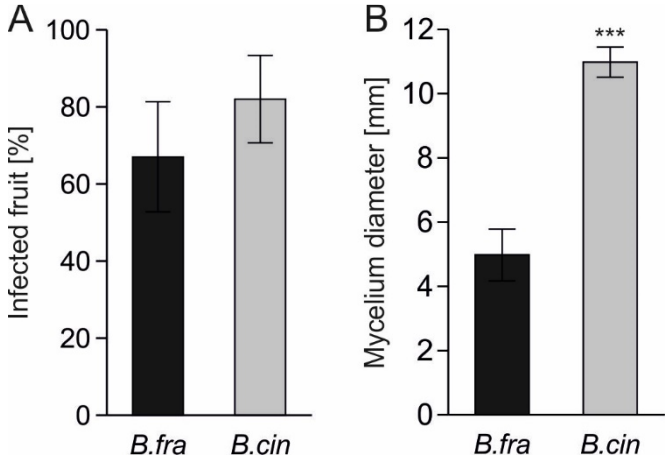


Fig. S6: Infection of strawberry tissues by *B. fragariae* and *B. cinerea* (4 d p.i.). A: Infection rate on fruit. B: Lesion formation on leaves. Significant differences between the species are indicated (***: $p<0.001$, two-sided t-test).

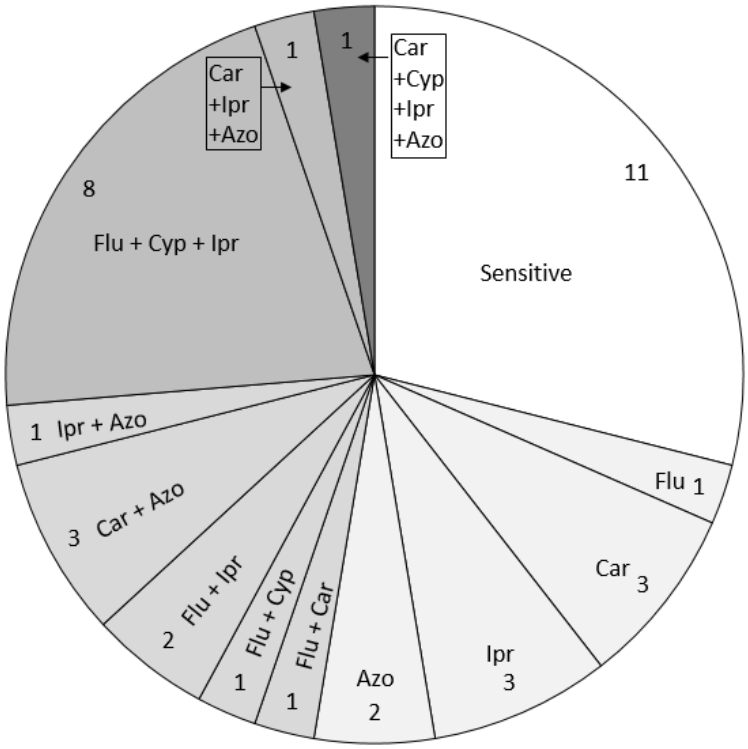


Fig. S7: Distribution of fungicide resistance in 38 *B. fragariae* isolates (cf. Table 2). Fen: Fenhexamid; Bos: Boscalid; Cyp: Cyprodinil; Azo: Azoxystrobin. Flu: Fludioxonil; Ipr: Iprodione; Car: Carbendazim.

Table S1: Primers used in this study.

Name	Sequence (5' – 3')	Gene	Reference
BpsID_137F	GCAGATGAGGCGGATGATAG	BC1G_07159/ Bcin09g02270	Plesken et al. 2015
BpsID_273R	TCCACCCAAGCATCATCTTC		
BcinN-in-F	GCGACCTCATCGTTCTTTCAC	*mrr1*	Plesken et al. 2015
BcinN-in-R	GGCTCTCGATGAGCTGTTTC		
Mrr1-spez-F	TATCGGTCTTGCAGTCCGC	*mrr1*	Leroch et al., 2013
Mrr1-spez-R	TTCCGTACCCCGATCTTCGGAA		
BC-hch262	AAGCCCTTCGATGTCTTGGA	*hch*	Fournier et al., 2005
BC-hch520L	ACGGATTCCGAACTAAGTAA		
Bc_Tub_for	AAGATCCGCGAGGAGTTCCC	*tubA*	This work
Bc_Tub_rev	GGCGGTTTGGACGTTGTTAG		
BF1_56_opt	TTAGCAGCCTGGCTGCATATAC	*bos1*	This work
BR1_1084_opt	TTGTGCCATGACGTTGAC		
BF2	CAACGTTATGGCACAAAATCTCA	*bos1*	Ma et al., 2007
BR2	AAGTTTCTGGCCATGGTGTTCA		
BF3_opt	TCGAGGTTCAGGGAGAAATC	*bos1*	This work
BR3_opt	CTATCCACGCGGTAAGTGAG		
BF4	GCAAACCGTATGATCATGGA	*bos1*	Ma et al., 2007
BR4_opt	TCTTCGGCCAAGAGAATGTC		This work
BR5	AAGTACTCGCAGTCGGTGGT	*bos1*	Ma et al., 2007
BF5_opt	TTCTCGGCAATGGAAGAACC		This work
Qo13ext	GGTATAACCCGACGGGGTTATAGAATAG	*cytB*	Leroux et al., 2010
Qo14ext	AACCATCTCCATCCACCATACCTACAAA		
HSP60_fw	CAACAATTGAGATTTGCCCACAAG	*hsp60*	Staats et al., 2005
HSP60_rev	GATGGATCCAGTGGTACCGAGCAT		
G3PDH_fw	ATTGACATCGTCGCTGTCAACGA	*g3pdh*	Staats et al., 2005
G3PDH_rev	ACCCCACTCGTTGTCGTACCA		
G3PDH_785_R	GTCACCGTTCATGTCAGTAG	*g3pdh*	This work
G3PDH_665_F	ATGGTCCTCTCAAGGGTAAG		
RPB2_fw	GATGATCGTGATCATTTCGG	*rpb2*	Staats et al., 2005
RPB2_rev	CCCATAGCTTGCTTACCCAT		
FG1020_fw	GGAGGATGATATGGCAAAGTC	*fg1020*	Plesken et al. 2015
FG1020_rev	GGATTAAGAGCTTCACTACCA		
Nep1for	CCAACGCAAAATTCCTTTCTATCC	*nep1*	Grant-Downton et al., 2014
Nep1rev	GTTGGCGAAGTTGTGGTCATTGAA		
NEP2forD	TTGCCTTCTCAAAATCATTACAGC	*nep2*	Staats et al., 2007
NEP2revD	TCTAGAAAGTAGCCTTCGCAAGAT		
IGS1a	TCCCGGTGAGCCTTTTA	(IGS)	Kretschmer and Hahn, 2008
IGS1b	CCATCGGCCAGTAATCCAC		
atrB_RT_for	CACCGGAGCAGGATTGAGTG	*atrB*	This work
atrB_RT_rev	GCGGAAGGTTGATGGATAG		
BcAct_RTfor	TCTGTCTTGGGTCTTGAGAG	*actin*	Leroch et al., 2013
BcAct_RTrev	GGTGCAAGAGCAGTGATTTC		
Tub_RT_fw	TTTCCGTGCTGTCACCGTTC	*tubA*	Leroch et al., 2013
Tub_RT_rev	ACGTTGCGCATTTGGTCCTC		
MATalpha5	ATGACGGCTCCCTTCAAAACC	Mat1-1	This work
MATalpha3	GGTGGTGAAGGGACATCTTC		
HMG5	ATGTCTCTCTCCTCTCTCCG	Mat1-2	This work
HMG3	GGAAAAGAATGTGTAGAGATCCTG		
Flipper-fw	AGCCCTACCCATCGTCAAATAC	(Flipper)	This work
Flipper-rev	GCTCGGGATCATCATCTGAAAC		

Table S2: Accession numbers of sequences used for assembling the phylogenetic trees.*

	hsp60	*g3pdh*	*rpb2*	*nep1*	*nep2*
B. fabae CBS109.57	AJ716074	AJ705013	AJ745685	AM087025	---*[1]
B. pseudocinerea 10091	JN692400	JN692414	JN692428	---*[1]	---*[1]
B. calthae MUCL1089	AJ716061	AJ705000	AJ745672	AM087031	AM087088
B. sinoviticola GBc-5	JN692399	JN692413	JN692427	---*[2]	---*[2]
B. ranunculi CBS178.63	AJ716095	AJ705034	AJ745706	AM087054	AM087086
B. sinoallii BC-23	EU514488	EU519217	EU514479	---*[2]	---*[2]
B. elliptica BE0022	AJ716071	AJ705010	AJ745682	AM087050	AM087081
B. squamosa MUCL1107	AJ716098	AJ705039	AJ745710	AM087052	AM087084
B. deweyae B1	HG799519	HG799521	HG799518	HG799527	HG799520
B. ficariarum CBS176.63	AJ716076	AJ705015	AJ745687	AM087055	AM087085
B. porri MUCL~~3349~~ 3234	AJ716093	AJ705032	AJ745704	AM087060	AM087063
B. paeoniae MUCL16084	AJ716089	AJ705028	AJ745700	AM087033	AM087064
B. convoluta MUCL11595	AJ716069	AJ705008	AJ745680	AM087035	AM087062
B. gladiolorum MUCL3865	AJ716081	AJ705020	AJ745692	AM087041	AM087072
B. tulipae BT9830	AJ716102	AJ705041	AJ745713	AM087037	AM087077
B. sphaerosperma MUCL21481	AJ716096	AJ705035	AJ745708	AM087042	AM087068
B. globosa MUCL21514	AJ716082	AJ705021	AJ745694	AM087044	AM087070
B. polyblastis CBS287.38	AJ716091	AJ705030	AJ745702	AM087039	AM087074
B. narcissicola MUCL2120	AJ716087	AJ705026	AJ745697	AM087046	AM087078
B. byssoidea MUCL94	AJ716059	AJ704998	AJ745670	AM087045	AM087079
B. fabiopsis BC-2	EU514482	EU519211	EU514473	---*[2]	---*[2]
*B. caroliniana*_CB17	JN672675	JN672671	JN672677	JF811593	---*[1]
B. galanthina MUCL3204	AJ716078	AJ705017	AJ745690	AM087058	AM087067
B. hyacinthi 0001	AJ716084	AJ705023	AJ745695	AM087048	AM087066
B. croci MUCL436	AJ716070	AJ705009	AJ745681	AM087047	AM087065
B. aclada MUCL8415	AJ716050	AJ704992	AJ745664	AM087059	AM087087

* Sequences of B. cinerea strain B05.10 and *Sclerotinia sclerotiorum* strain 1980 were obtained from genome assemblies provided by the EnsemblFungi website (http://fungi.ensembl.org/index.html). *[1]: Own unpublished sequence data. *[2]: Unpublished sequence data (provided by Dr. Jing Zhang, Huazhong Agricultural University, Wuhan, China).

Table S3: Occurrence of *Botrytis species* on wild strawberries (*Fragaria vesca*) in Western Germany.

Site*	No of isolates	*B. cinerea*		*B. pseudocinerea*	*B. fragariae*
		Group N	Group S		
A	5	0	2	3	0
B	17	4	11	2	0
C	11	4	1	6	0
D	10	2	5	3	0

*Four sites located in the Palatine forest, Germany, Kaiserslautern.

Table S4: Fungicide treatments in fields from which *B. fragariae* isolates were recovered. *For GE-Nottensdorf (the only site where isolates were obtained after the treatments), treatments of the 2011 season are shown.

Field code	**Year**	**Treatments in the previous year***
GE-Nottensdorf	2011	Fenhexamid*[1] (1x), Fludioxonil + Cyprodinil*[2] (2x), Boscalid + Pyraclostrobin*[3] (1x), Trifloxystrobin*[4] (1x)
GE-Iffezheim	2012	None
GE-Weiterstadt	2012	Fludioxonil + Cyprodinil (2x), Azoxystrobin, Fenhexamid
GE-Grafschaft	2011	Unknown
GE-Wittlich-A	2012	Fludioxonil + Cyprodinil (1x)
GE-Wittlich-B	2013	None
GE- Gernsheim-1	2012	Unknown
GE- Gernsheim-1	2013	Boscalid + Pyraclostrobin, Fludioxonil + Cyprodinil (2x) , Fenhexamid
GE-Wagshurst	2014	None
US-Pelion-SC	2015	None
US-Gilbert-SC	2015	Captan, Fenhexamid, Fludioxonil + Cyprodinil
US-Holly Hill-SC	2015	Unknown

*Trade names: [1] Teldor®, [2] Switch®, [3] Signum®, [4] Flint®.

Table S5: *Botrytis* strains used for quantitative fungicide sensitivity assays (cf. Fig. 6) and *atrB* expression studies (cf. Fig. 7).

Species	Strain	Fungicide sensitivity or resistance			Reference
		Fludioxonil	Cyprodinil	Iprodione	
B. cinerea	B05.10*	S	S	S	Leroch et al., 2013
B. cinerea	D06_5-16*	MDR1	MDR1	n.a.	Kretschmer et al., 2009
B. cinerea	D08-H-8-07a*	MDR1h	MDR1h	n.a.	Leroch et al., 2013
B. cinerea	D09_K_A04	n.a.	n.a.	HR	This work
B. cinerea	D09_K_4_01	n.a.	HR	n.a.	This work
B. cinerea	D09_K_F04	n.a.	n.a.	MR	This work
B. fragariae	D11_H_R4*	S	S	MR	This work
B. fragariae	D13_F_HJ_2-34	S	S	S	This work
B. fragariae	D13_F_Me3	S	S	S	This work
B. fragariae	D13_F-Ju21	MDR1	MDR1	MR	This work
B. fragariae	D13_F-Ju26	MDR1	MDR1	n.a.	This work
B. fragariae	D14_F-Ju20*	MDR1	HR	HR	This work
B. fragariae	D13_F_Nba13	n.a.	MDR1	MR	This work
B. fragariae	D13_F_Ju10	S	S	n.a.	This work
B. fragariae	D13_F_Ju1	S	S	n.a.	This work
B. fragariae	D13_F_Ju29	n.a.	HR	n.a.	This work
B. fragariae	D14_F_Ju12	n.a.	HR	n.a.	This work
B. fragariae	D13_F_Nba10	n.a.	n.a.	S	This work
B. fragariae	D15_W_R3	n.a.	n.a.	HR	This work
B. fragariae	D14_Bl.427-22	n.a.	n.a.	HR	This work

*: Used for *atrB* expression studies. Abbreviations: S: Sensitive; MR: Medium resistant; HR: Highly resistant. n.a.: Not analysed in Fig. 6.

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