

## Supplementary Data

**Supplementary Table 1: Top 20 Strawberry Producers**

<b>Area</b>	<b>Item</b>	<b>Year</b>	<b>Value</b>	<b>Unit</b>
<b>China, mainland</b>	Strawberries	2019	3212814	tonnes
<b>United States of America</b>	Strawberries	2019	1021490	tonnes
<b>Mexico</b>	Strawberries	2019	861337	tonnes
<b>Turkey</b>	Strawberries	2019	486705	tonnes
<b>Egypt</b>	Strawberries	2019	460245	tonnes
<b>Spain</b>	Strawberries	2019	351960	tonnes
<b>Russian Federation</b>	Strawberries	2019	208800	tonnes
<b>Republic of Korea</b>	Strawberries	2019	192971	tonnes
<b>Poland</b>	Strawberries	2019	185400	tonnes
<b>Morocco</b>	Strawberries	2019	167827	tonnes
<b>Brazil</b>	Strawberries	2019	165440	tonnes
<b>Japan</b>	Strawberries	2019	158443	tonnes
<b>Germany</b>	Strawberries	2019	143980	tonnes
<b>United Kingdom of Great Britain and Northern Ireland</b>	Strawberries	2019	141594	tonnes
<b>Italy</b>	Strawberries	2019	125130	tonnes
<b>Belarus</b>	Strawberries	2019	81887	tonnes
<b>Netherlands</b>	Strawberries	2019	75590	tonnes
<b>Greece</b>	Strawberries	2019	74430	tonnes
<b>Australia</b>	Strawberries	2019	68534	tonnes
<b>Ukraine</b>	Strawberries	2019	62620	tonnes

**Supplementary Table 2: Top 20 strawberry Importers**

<b>Area</b>	<b>Item</b>	<b>Year</b>	<b>Value</b>	<b>Unit</b>
<b>United States of America</b>	Strawberries	2019	186499	tonnes
<b>Germany</b>	Strawberries	2019	128105	tonnes
<b>Canada</b>	Strawberries	2019	96912	tonnes
<b>France</b>	Strawberries	2019	64357	tonnes
<b>United Kingdom of Great Britain and Northern Ireland</b>	Strawberries	2019	57379	tonnes
<b>Russian Federation</b>	Strawberries	2019	43885	tonnes
<b>Italy</b>	Strawberries	2019	42314	tonnes
<b>Belgium</b>	Strawberries	2019	33325	tonnes
<b>Netherlands</b>	Strawberries	2019	30113	tonnes
<b>Portugal</b>	Strawberries	2019	20315	tonnes
<b>Austria</b>	Strawberries	2019	20138	tonnes
<b>Spain</b>	Strawberries	2019	18519	tonnes
<b>Poland</b>	Strawberries	2019	17698	tonnes
<b>Saudi Arabia</b>	Strawberries	2019	17115	tonnes
<b>Mexico</b>	Strawberries	2019	16960	tonnes
<b>Czechia</b>	Strawberries	2019	16368	tonnes
<b>Switzerland</b>	Strawberries	2019	14088	tonnes
<b>United Arab Emirates</b>	Strawberries	2019	10388	tonnes
<b>Belarus</b>	Strawberries	2019	10023	tonnes
<b>Romania</b>	Strawberries	2019	9124	tonnes

**Supplementary Table 3: Top 20 Strawberry Exporters**

<b>Area</b>	<b>Item</b>	<b>Year</b>	<b>Value</b>	<b>Unit</b>
<b>Spain</b>	Strawberries	2019	300036	tonnes
<b>Mexico</b>	Strawberries	2019	137393	tonnes
<b>United States of America</b>	Strawberries	2019	130784	tonnes
<b>Netherlands</b>	Strawberries	2019	57071	tonnes
<b>Greece</b>	Strawberries	2019	45175	tonnes
<b>Belgium</b>	Strawberries	2019	45069	tonnes
<b>Egypt</b>	Strawberries	2019	38543	tonnes
<b>Turkey</b>	Strawberries	2019	25352	tonnes
<b>Morocco</b>	Strawberries	2019	21439	tonnes
<b>Yemen</b>	Strawberries	2019	18800	tonnes
<b>Italy</b>	Strawberries	2019	12990	tonnes
<b>Germany</b>	Strawberries	2019	12229	tonnes
<b>Serbia</b>	Strawberries	2019	8896	tonnes
<b>France</b>	Strawberries	2019	8732	tonnes
<b>Lithuania</b>	Strawberries	2019	7448	tonnes
<b>Portugal</b>	Strawberries	2019	6468	tonnes
<b>Poland</b>	Strawberries	2019	6411	tonnes
<b>Guatemala</b>	Strawberries	2019	6383	tonnes
<b>Belarus</b>	Strawberries	2019	5849	tonnes
<b>Republic of Korea</b>	Strawberries	2019	5259	tonnes

**Supplementary Figure 1:** Amino acid sequence alignment of Primer 1 for *P. cactorum* Resistant (R) and Sensitive (S) Isolates with previously identified SNPs in *P. infestans*

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Phytophtho PPLEVQSQLQLMWQNEGLMEMLYGDRNIASGRVSGRKP-----DGW-----RKFFL
R1_Primer1 -----YGDRNIASGRVSGRKP-----DGW-----RKFFL
R2_Primer1 -----GLLYGDRNIASGRVSGRKP-----DGW-----RKFFL
S4_Primer1 -----GLLYGDRNIASGRVSGRKP-----DGW-----RKFFL
R4_Primer1 -----GLLYGDRNIASGRVSGRKP-----DGW-----RKFFL
S3_Primer1 -----NGDRNIASGRVSGRKP-----DGW-----RKFFL
R3_Primer1 -----NGDRNIASGRVSGRKP-----DGW-----RKFFL
S2_Primer1 -----NGDRNIASGRVSGRKP-----DGW-----RKFFL
S1_Primer1 -----RRPQHCLAAVSSWPARRLAQVLSL
                                     **      ..*      : : *

Phytophtho NVIPVAPSRFRPPVFMGDKQFEHAQNSHLSKIMTYSEIVQSDYYKQAATTSDEDDAEK
R1_Primer1 NVIPVAPSRFRPPVFMGDKQFEHAQNSHLSKIMTLSEIVQGDYYKQAATTSDEDDAEK
R2_Primer1 NVIPVAPSRFRPPVFMGDKQFEHAQNSHLSKIMTLSEIVQGDYYKQAATTSDEDDAEK
S4_Primer1 NVIPVAPSRFRPPVFMGDKQFEHAQNSHLSKIMTLSEIVQGDYYKQAATTSDEDDAEK
R4_Primer1 NVIPVAPSRFRPPVFMGDKQFEHAQNSHLSKIMTLSEIVQGDYYKQAATTSDEDDAEK
S3_Primer1 NVIPVAPSRFRPPVFMGDKQFEHAQNSHLSKIMTLSEIVQGDYYKQAATTSDEDDAEK
R3_Primer1 NVIPVAPSRFRPPVFMGDKQFEHAQNSHLSKIMTLSEIVQGDYYKQAATTSDEDDAEK
S2_Primer1 NVIPVAPSRFRPPVFMGDKQFEHAQNSHLSKIMTLSEIVQGDYYKQAATTSDEDDAEK
S1_Primer1 NVIPVCAFTF-PPAFSGDKQFEHAQNSHLSKIMTLSEIVQGDYYKQAATTSDEDDAEK
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Phytophtho EEQVNLSRKLALWTELQNAVNLLVDS SKAKPGTDVAQGIKQVIEKKEGLFRKHMGMKRVN
R1_Primer1 EEQVNLSRKLALWTELQNAVNLLVDS SKAKPGTDVAQGIKQVIEKKEGLFRKH-----
R2_Primer1 EEQVNLSRKLALWTELQNAVNLLVDS SKAKPGTDVAQGIKQVIEKKEGLFRKHMGMK---
S4_Primer1 EEQVNLSRKLALWTELQNAVNLLVDS SKAKPGTDVAQGIKQVIEKKEGLFRKHMGMK---
R4_Primer1 EEQVNLSRKLALWTELQNAVNLLVDS SKAKPGTDVAQGIKQVIEKKEGLFRKH-----
S3_Primer1 EEQVNLSRKLALWTELQNAVNLLVDS SKAKPGTDVAQGIKQVIEKKEGLFRKHIG-----
R3_Primer1 EEQVNLSRKLALWTELQNAVNLLVDS SKAKPGTDVAQGIKQVIEKKEGLFRKHMWVK--
S2_Primer1 EEQVNLSRKLALWTELQNAVNLLVDS SKAKPGTDVAQGIKQVIEKKEGLFRKHWIG----
S1_Primer1 EEQVNLSRKLALWTELQNAVNLLVDS SKAKPGTDVAQGIKQVIEKKEGLFRKHW-----
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**Supplementary Figure 2:** Amino acid sequence alignment of Primer 2 for *P. cactorum* Resistant (R) and Sensitive (S) Isolates with previously identified SNPs in *P. infestans*

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Phytophtho NAKALDAHMMGCVHGSNSDI IKTCLPSGQSKAFFPKNNFSLMVLTGAKGSMVNHSQISCGL
R3_Primer2 ---XXXXXMMGCVHGSNSDI IKTCLPSGQSKAFFPKNNFSLMVLTGAKGSMVNHSQISCGL
R4_Primer2 -----MMGCVHGSNSDI IKTCLPSGQSKAFFPKNNFSLMVLTGAKGSMVNHSQISCGL
S4_Primer2 -----PMMGCVHGSNSDI IKTCLPSGQSKAFFPKNNFSLMVLTGAKGSMVNHSQISCGL
S3_Primer2 ---XXXXXMMGCVHGSNSDI IKTCLPSGQSKAFFPKNNFSLMVLTGAKGSMVNHSQISCGL
S1_Primer2 -----PMGCVHGSNSDI IKTCLPSGQSKAFFPKNNFSLMVLTGAKGSMVNHSQISCGL
R1_Primer2 -----AMMGCVPGSNSDI IKTCLPSGQSKAFFPKNNFSLMVLTGAKGSMVNHSQISCGL
S2_Primer2 ---XXXXXHDGLRAGSNSDI IKTCLPSGQSKAFFPKNNFSLMVLTGAKGSMVNHSQISCGL
R2_Primer2 -----XXXXXFLKTCCLPSGQSKAFFPKNNFSLMVLTGAKGSMVNHSQISCGL
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Phytophtho GQQALEGRRVPILCSGRSLPSFEFFDPAPRAGGYVTD RFLTGLRPQEYYHHC MAGREGLV
R3_Primer2 GQQALEGRRVPILCSGRSLPSFEFFDPAPRAGGYVTD RFLTGLRPQEYYHHC MAGREGLV
R4_Primer2 GQQALEGRRVPILCSGRSLPSFEFFDPAPRAGGYVTD RFLTGLRPQEYYHHC MAGREGLV
S4_Primer2 GQQALEGRRVPILCSGRSLPSFEFFDPAPRAGGYVTD RFLTGLRPQEYYHHC MAGREGLV
S3_Primer2 GQQALEGRRVPILCSGRSLPSFEFFDPAPRAGGYVTD RFLTGLRPQEYYHHC MAGREGLV
S1_Primer2 GQQALEGRRVPILCSGRSLPSFEFFDPAPRAGGYVTD RFLTGLRPQEYYHHC MAGREGLV
R1_Primer2 GQQALEGRRVPILCSGRSLPSFEFFDPAPRAGGYVTD RFLTGLRPQEYYHHC MAGREGLV
S2_Primer2 GQQALEGRRVPILCSGRSLPSFEFFDPAPRAGGYVTD RFLTGLRPQEYYHHC MAGREGLV
R2_Primer2 GQQALEGRRVPILCSGRSLPSFEFFDPAPRAGGYVTD RFLTGLRPQEYYHHC MAGREGLV
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Phytophtho DTAVKTSRSGYLQRCLIKHLEDLNVGYDHTVRNSDGGVIQFLYGEDGIDPVQSAMLSGKD
R3_Primer2 DTAVKTSRSGYLQRCLIKH-----
R4_Primer2 DTAVKTSRSGYLQRCLI-----
S4_Primer2 DTAVKTSRSGYLQRCLIKHK-----
S3_Primer2 DTAVKTSRSGYLQRCLIKQ-----
S1_Primer2 DTAVKTSRSGYLQRCLNQAQQ-----
R1_Primer2 DTAVKTSRSGYLQRCLNQAQ-----
S2_Primer2 DTAVKTSRSGYLQRCLIQAQK-----
R2_Primer2 DTAVKTSRSGYLQRCLNXXXXXI-----
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**Supplementary Figure 3:** Amino acid sequence alignment of Primer 3 for *P. cactorum* Resistant (R) and Sensitive (S) Isolates with previously identified SNPs in *P. infestans*

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Phytophtho DVESSRAQEVEQRLNQVALSELINNTNGVRVKDQFHSSENGILWVRDYQIRLSFFKLKEI
S1_Primer3 -----KEI
R1_Primer3 -----TIRLTFFKLKEI
R3_Primer3 -----XXXXXITIRLTFFKLKEI
S3_Primer3 -----GDTIRLTFFKLKEI
S2_Primer3 -----XXXXXDQIRLTFFKLKEI
S4_Primer3 -----GDQIRLTFFKLKEI
R2_Primer3 -----XXXXXIRIRLTFFKLKEI
R4_Primer3 -----FHSSENGILWVRDYQIRLTFFKLKEI
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Phytophtho KRVFGLSADQVFNSVGRGFVVGKLLTLISREMKKSGVTVSAAA EKNNFKAPSGADKKKND
S1_Primer3 KRVFGLSADQVFNSFGRGFVVGKLLTLISREMKKSGVTVSAAA EKNNFKAPSGADRKKT--
R1_Primer3 KRVFGLSADQVFNSFGRGFVVGKLLTLISREMKKSGVTVSAAA EKNNFKAPSGADRKKTND
R3_Primer3 KRVFGLSADQVFNSFGRGFVVGKLLTLISREMKKSGVTVSAAA EKNNFKAPSGADRKKTND
S3_Primer3 KRVFGLSADQVFNSFGRGFVVGKLLTLISREMKKSGVTVSAAA EKNNFKAPSGADRKKTND
S2_Primer3 KRVFGLSADQVFNSFGRGFVVGKLLTLISREMKKSGVTVSAAA EKNNFKAPSGADRKKTND
S4_Primer3 KRVFGLSADQVFNSFGRGFVVGKLLTLISREMKKSGVTVSAAA EKNNFKAPSGADRKKTND
R2_Primer3 KRVFGLSADQVFNSFGRGFVVGKLLTLISREMKKSGVTVSAAA EKNNFKAPSGADRKKTND
R4_Primer3 KRVFGLSADQVFNSFGRGFVVGKLLTLISREMKKSGVTVSAAA EKNNFKAPSGADRKKTND
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Phytophtho DEDDDDEQGTLRFGSRGEVQGYGEMDEEDEKIRKAQMADSDIDSYDETSGNQKNGADT
S1_Primer3 -----
R1_Primer3 D-DDDDEQGTLRFGSRGEVQGYGEMDEEDEKIRKAQMADSDIDSDETSGNKKKQR---
R3_Primer3 D-DDDDEQGTLRFGSRGEVQGYGEMDEEDEKIRKAQMADSDIDSDETSGNKKKQRR--
S3_Primer3 D-DDDDEQGTLRFGSRGEVQGYGEMDEEDEKIRKAQMADSDIDSDETSGNKKSNE---
S2_Primer3 D-DDDDEQGTLRFGSRGEVQGYGEMDEEDEKIRKAQMADSDIDSDETSGNKKSNE---
S4_Primer3 D-DDDDEQGTLRFGSRGEVQGYGEMDEEDEKIRKAQMADSDIDSDETSGNKKSNE---
R2_Primer3 D-DDDDEQGTLRFGSRGEVQGYGEMDEEDEKIRKAQMADSDIDSDETSGNKKSNE---
R4_Primer3 D-DDDDEQGTLRFGSRGEVQGYGEMDEEDEKIRKAQMADSDIRS-----

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