

## Supplementary Materials

Table S1. Soil chemical analysis of ‘Fuji’ apple orchards.

Parameters	Orchard 1	Orchard 2
pH(1:2.5 soil:water)	6.84	6.44
Electrical conductivity (dS m <sup>-1</sup> )	0.15	0.09
Organic matter (%)	2.72	4.69
Olsen-P (mg kg <sup>-1</sup> )	84.0	22.0
K (cmolc kg <sup>-1</sup> )	0.53	0.45
Ca (cmolc kg <sup>-1</sup> )	11.30	6.20
Mg (cmolc kg <sup>-1</sup> )	2.73	1.32
Na (cmolc kg <sup>-1</sup> )	0.15	0.12
Cu (mg kg <sup>-1</sup> )	18.9	4.71
Fe (mg kg <sup>-1</sup> )	89.3	57.5
Mn (mg kg <sup>-1</sup> )	6.4	0.99
Zn (mg kg <sup>-1</sup> )	25.5	3.43
B (mg kg <sup>-1</sup> )	0.64	0.59

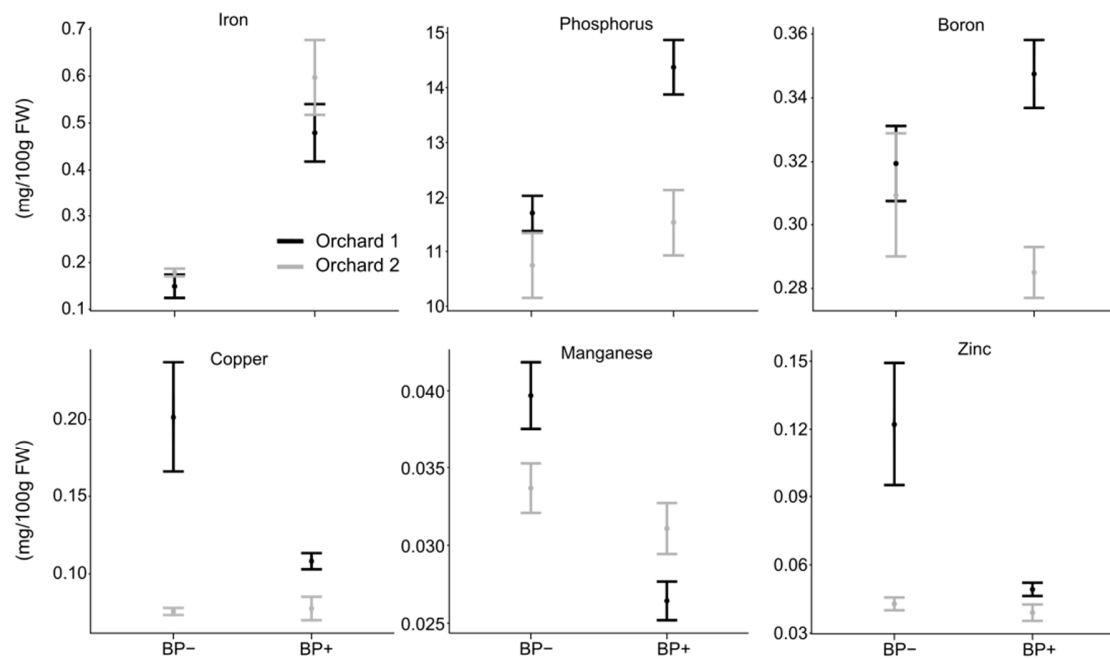


Figure S1. Interaction plots for mineral concentrations for healthy and bitter pit affected fruit in both orchards after 150 days of storage at 0° C for the 2018 season.

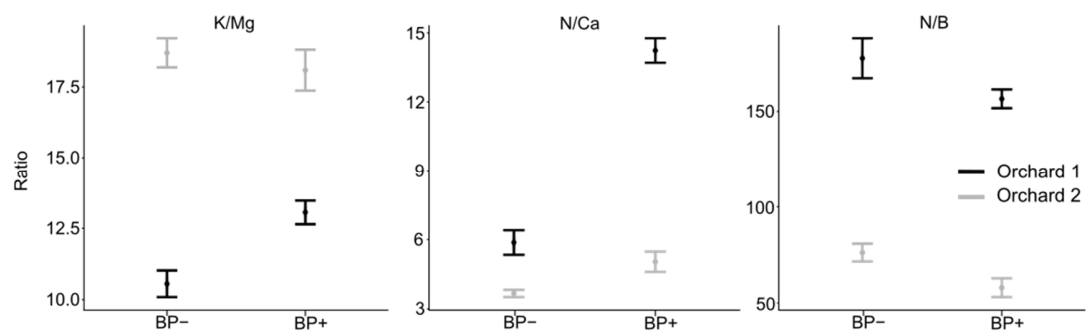


Figure S2. Interaction plots for mineral relationships for healthy and bitter pit affected fruit in both orchards after 150 days of storage at 0 °C for the 2018 season.