agronomy

Supplementary: Optimizing Crop Load for New Apple Cultivar: 'WA38'

Brendon Anthony, Sara Serra and Stefano Musacchi *

Department of Horticulture, Tree Fruit and Research Extension Center (TFREC), Washington State University, 100 N. Western Avenue 98801 Wenatchee, Washington State, USA;
brendon.m.anthony@gmail.com (B.A.); sara.serra@wsu.edu (S.S.)
* Correspondence: stefano.musacchi@wsu.edu; Tel: +1-509-293-8787

Table S1. The effects of crop load on leaf SPAD units, and fruit hue and chroma from the Minolta color meter from 'WA38 apple' trees grown in Rock Island, Washington in 2017.

Crop load (no. fruit/cm^2 TCSA)	Leaf SPAD Units	Fruit Hue[a]	Fruit Chroma[b]
2.1	43	17.91	28.50 B
4.1	41	18.74	29.79 A
6.0	44	19.11	28.35 B
7.8	44	19.39	27.86 B
Significance	ns	ns	*

Means in columns with different letters indicate significant difference at p-value < 0.05 via Student-Newman-Keuls (SNK); [a]Hue was calculated from measurements taken on the most yellow portion of the apple; [b]Chroma was calculated from measurements taken on the reddest portion of the apple

Table S2. The effect of crop load on the biennial index and classification as assessed by Hoblyn et al., [71] for 'WA38' trees grown in Rock Island, Washington across 2017 – 2018. Biennial index ratings assessed by fruit number/tree.

Crop load (no. fruit/cm^2 TCSA) in 2017	Biennial index	Biennial classification
2.1	0.63 A	Biennial
4.1	0.28 B	Consistent
6.0	0.17 B	Consistent
7.8	0.26 B	Consistent
Significance	***	

Means in columns with different letters indicate significant difference at p-value < 0.05 via Student-Newman-Keuls (SNK); The classifications are quantified as: I=0.90 – 1.00=Strongly Biennial, 0.50 – 0.89=Biennial, 0.10 – 0.49=Consistent, 0.00 – 0.09=Strongly Consistent [70]

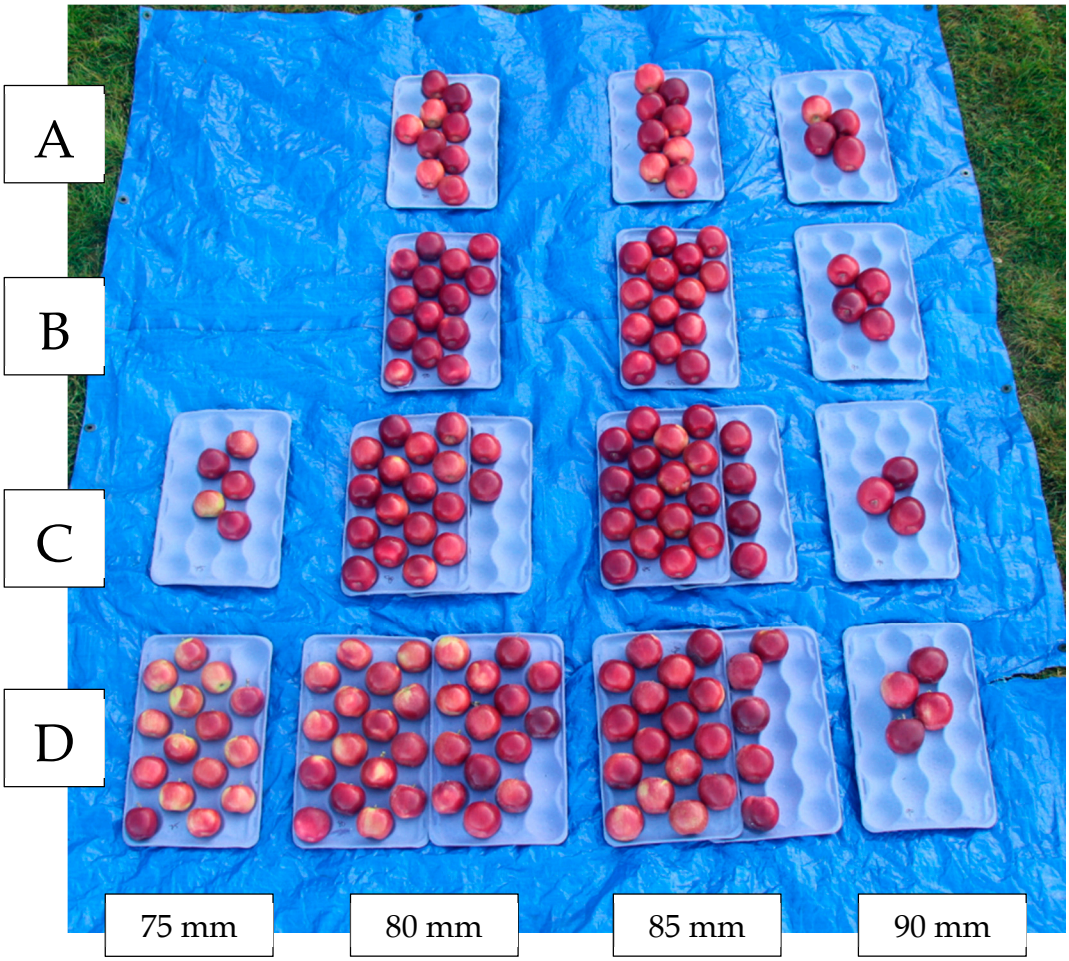

Figure S1. The effect of crop load on fruit size and red coloration of fruit positioned on their sun exposed side (the darkest part of the apple) from 'WA38 apple' trees adjusted to various crop loads grown in Rock Island, Washington in 2017. A, B, C, D indicates crop load categories 2.1, 4.0, 6.0, and 7.8 fruits/cm^2 of TCSA. Fruit size diameter is indicated below with the associated label in each column.

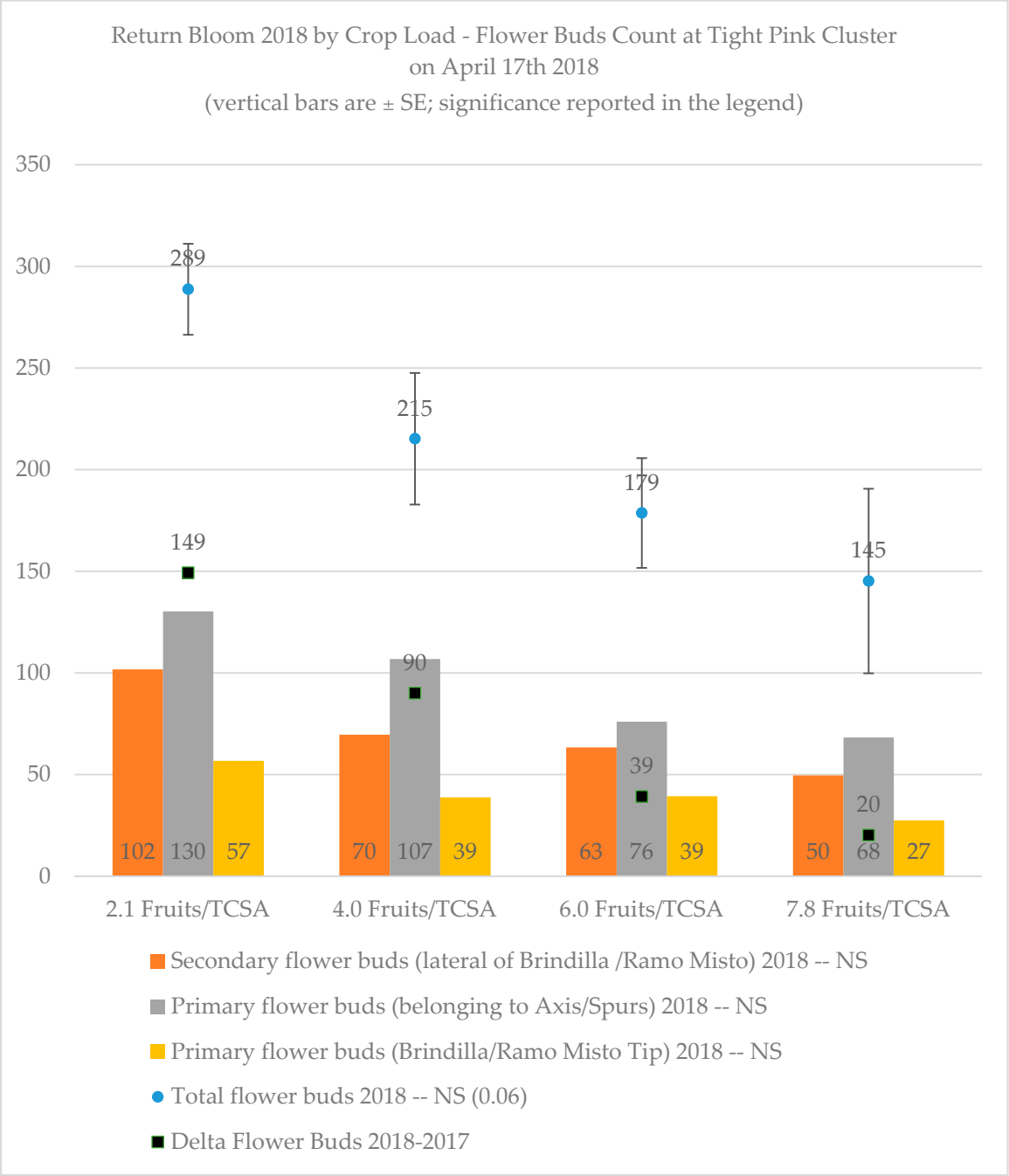

Figure S2. Average flower bud count on experimental trees in the Spring of 2018 (6th leaf) and their position (terminal on "brindilla"/"ramo misto," lateral on "ramo misto," and spur/central axis) on 'WA38' trees grown in Rock Island, WA; Means in columns with different letters indicate significant difference at p-value < 0.05 via Student-Newman-Keuls (SNK); Crop loads were induced in 2017, and left to bear naturally in 2018 to assess bienniality; In 2018, n=4, 5, 6, and 5 trees for flower bud counts for crop load categories 2.1, 4.1, 6.0, and 7.8 fruits/cm².