

BIO SHOT ON JONAGOLD APPLE 2018 HARVEST YIELD & FRUIT QUALITY & 2019 RETURN BLOOM. NY.

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A small-plot (7 tree/treatment) trial was established in 2018, in LaMora Farms, Ontario, NY, in variety Jonagold, rootstock M7; with density of 200 trees per acre, age: 10+ years (full bearing), pH 6.4 soil, in a block with a history of moderate bitterpit incidence. A comprehensive fungicide and insecticide spray program, as well as Return Bloom NAA and Ethrel PGR sprays, were applied uniformly across all programs in 2018. The trial treatments were applied at 2 mph, 67 gpa (=3X) with a commercial PTO airblast sprayer. Dilute Tree Row Volume (TRV) of 250 gpa, spray water pH = 7.6. The 2018 growing season was unusually warm and dry.

Overall fruit finish was very good in both programs evaluated (Bio Shot and Control), without differences. No foliar or fruit phytotoxicity was observed from any of the trial programs.

The Bio Shot program included 5 sprayings in the following crop stages and dates: “pink” (May 10), “petal fall” (May 24), “2C” (June 19), “3C” (June 28) and “5C” (July 27), 2018, each at 2 fl. oz./ac.

The BioShot program showed marked increases in number of fruits per tree (fruit set) and total fruit weight per tree, and a slight increase in weight per fruit, resulting in 8.1% or 83.1 bu./ac. yield increase, and \$794 per acre additional net revenues, as well as better quality in increased fruit soluble solids or Brix (thus sweetness), a reduction in the percentage of fruits showing bitterpit symptoms, and a slight increase in the 2019 (following year) return bloom (in spite of the previous yield increases), all compared to the untreated control (table & figs.).

Jonagold apple 2018 harvest yield & quality, and 2019 return bloom, by BioShot and Control.

	total # fruits per tree	total fruit wt. lb. / tree	wt. oz. per fruit	fruit soluble solids % Brix	fruits with bitter- pit %	2019 return bloom %	yield bu./ac.	yield diff. bu. /ac.	% Incr.	Add. income \$/ac.	Add. cost \$/ac.	Add. revenues \$/ac.
Control	509	218	6.85	12.24	1.71	87.86	1030.8	-	-	-	-	-
Bio Shot ^a	543	236	6.95	12.77	0.86	90.71	1113.9	83.1	8.1	831	37.50	794

^a Bio Shot in 5 sprayings at 2 fl. oz./ac.; Jonagold apple price at \$10/ bu..

