TRIAL UPDATE

May 2016

Trial in young walnut tree planting, 2015 - 16

Summary

The trial was conducted on a planting of young trees on a large commercial walnut orchard. A combination treatment of CataPult and TwinN was applied to young walnut trees receiving a standard fertilizer program. These were compared to trees receiving the same standard program in a neighbouring block. Measurements of trunk diameter of 23 treated and 23 untreated trees were made in August 2015. Measurements were taken again in January 2016, 24 weeks later. Untreated trees increased 52.6% in trunk circumference at 75 cm height over that period while trees receiving CataPult plus TwinN increased trunk circumference by 65.3% on average. CataPult plus TwinN treated rows showed a 7.7% increase in trunk diameter compared to untreated trees (p= 0.013) when measured on 11 May 2016. This increase in growth rate in young trees represents compounded value. It reduces the time to full production, a significant advantage in tree crops where major financial outlays must be offset as early as possible by commencement of revenues. These benefits that enhance the nutrition and growth of young trees have also been shown to enhance production in a variety of mature fruiting trees in trials and commercial use.

Trial Methodology

CataPult was applied to young walnut trees (planted winter 2014) via fertigation in early March 2015 and TwinN was applied via fertigation on 25th September 2015. All trees received the standard fertilizer program. Measurements of trunk diameter at 75 cm height were made using Vernier scale callipers, of 23 treated and 23 untreated trees on 4th August 2015. The same trees were measured again on 20th January 2016 (Table 1). Trunk circumferences at 75 cm were calculated. A further application of CataPult and TwinN is planned for late February 2016. A sample of 27 trees, including those previously measured , was measured for trunk diameter using the same method on 11th May 2016. A 2-tailed T test was used to assess the statistical significance of differences between the two data sets .

Results

	Trunk diam. (cm) 4/8/15	Trunk diam. (cm) 20/1/16	Trunk circ. (cm) 4/8/15	Trunk circ. (cm) 20/1/16	Increase in trunk circ. (cm)	**% increase in trunk circ.**
Standard	2.1	3.20	6.6	10.07	3.47	**52.6**
Standard + CataPult + TwinN	2.03	3.36	6.39	10.56	4.17	**65.3 (+12.7%)**

Results cont'd

Trunk circumference increased by 52.6% in untreated trees over 167 days versus a 65.3% increase in trees treated with CataPult and TwinN. A two tail, two sample equal variance T-test, comparing gains in circumference in treated versus untreated trees showed p=0.057. The trees receiving CataPult and TwinN at the first measurement date (4/8/15) had slightly smaller diameters (2.03 cm versus 2.10 cm), indicating that the increased growth rate that was measured was due to a treatment effect rather than a more fertile row

Leaf tests on treated versus untreated trees, conducted on 13th Jan 2016 by the orchard agronomist, showed the treated block as having one of the best nutrient profiles of 12 blocks tested.

The effect of increased trunk diameter in young walnut trees treated with CataPult and TwinN has persisted with a larger sample of trees showing a 7.7% larger trunk diameter compared to untreated trees (p=0.013) on 11th May 2016.

Left: CataPult and TwinN treated trees Right: Untreated trees

Mapleton Agri Biotec recommends a single application of CataPult per year plus TwinN or NitroGuard in spring and again in late summer/early autumn. NitroGuard or NitroGuard DEFENDER should be used if root health issues are a consideration.

Application of CataPult and NitroGuard (or TwinN) to new plantings will drive faster root and early tree growth. For young trees MAB recommends retaining standard fertiliser rates, as accelerated growth to production stage is the major agronomic target. In subsequent nutrition programs to fruiting trees, applications of CataPult and NitroGuard/TwinN can allow reductions in N and P rates.

Visit www.mabiotec.com for more detailed information on CataPult, NitroGuard, NitroGuard DEFENDER and TwinN. Contact Rob Bower for technical questions (robbower@mabiotec.com, 0458989282), or the MAB office denisbower@mabiotec.com, 0754 457151).