# Increase Next Season's Almond Nut Counts by Feeding Floral Buds

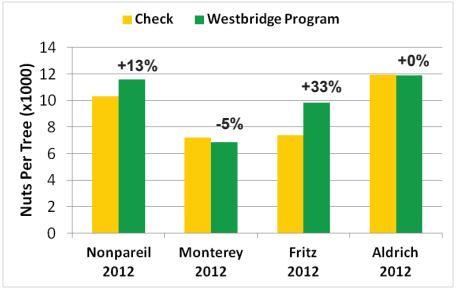
It is common knowledge that post-harvest fertilization with nitrogen, zinc and boron can help reduce alternate bearing in almonds. This application timing is considered helpful in increasing the nutrition in the overwintering floral buds. Floral bud initiation in the Nonpareil almond variety occurs around 24 days after hull split (Lamp, et. al., 2001). Since hull split generally occurs in mid to late July, applications of fertilizer made in mid to late August would be ideal to feed these developing buds.

Unfortunately, not all almond varieties have the same timing for floral bud initiation. Floral bud initiation in Carmel almonds is 23 days before hull split, or mid to late June (Lamp, et. al., 2001). Therefore, a post-harvest fertility application may not have as dramatic an impact on Carmel as with the Nonpareil almond variety, when applied at the same time. Additionally, the timing for floral bud initiation is not known for many commercial almond varieties. To maximize yield potential for all almond varieties in an almond orchard, it is important to integrate a season-long fertility program that can feed the different buds at their appropriate times.

Floral bud initiation is dependent on spur leaf area, among other things. The greater the leaf area the more flower buds per spur (Polito et. al., 2002). Properly managing vegetative growth during the current season will help maximize nut set the next season. Proper nutrition during the vegetative flush after flowering will help increase the total leaf area. A zinc deficiency at this time can result in "little leaf", which would further reduce leaf area and the associated carbohydrates for nut retention and fill. Another important time for almond nutrition is mid-May to early June. This is the time when the nuts are filling and at the same time there is a vegetative flush creating new sites for spur development. The Westbridge Almond Program is designed to feed the tree at these and other crucial stages.

An almond orchard containing five varieties of almonds (Nonpareil, Butte, Aldrich, Fritz and Monterey), was treated in August 2011, as well as four applications in 2012 at spring bud swell, mid bloom, mid-May and mid-August. All applications consisted of Organic TRIGGRR®, Organic BioLink® Cal Plus, Organic BioLink® Micronutrients and Organic BioLink® 3-3-3. The August 2011 application impacted the nut counts on the Nonpareil and Aldrich varieties only, as evidenced by the 2012 nut counts. (Fig. 1).

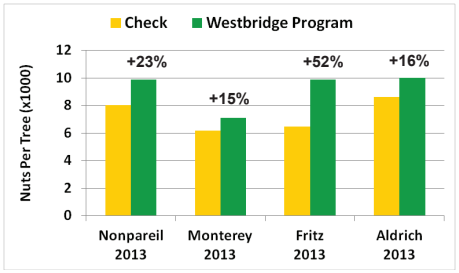
Figure 1




**2012 Nut Counts**

This differential response is attributed to missing the critical timings for the Butte, Fritz and Monterey floral bud initiations. This is in contrast to the data from the four applications in 2012. The nut counts in 2013 indicate that all almond varieties were fed at the critical times for their respective floral bud development (Fig. 2).

Figure 2




**2013 Nut Counts**

These data tend to suggest that periodic applications of an appropriate fertilization program during the course of the growing season can feed leaves and promote vegetative development, which provides the energy and carbohydrates necessary for floral bud development in the various almond varieties. Trees in particular, and plants in general, develop their reproductive organs from the photosynthetic output of the foliage. So feed your leaves regularly with the appropriate level of critical nutrients to maximize your nut counts, regardless of variety.

To learn more about the Westbridge Almond Program, contact Dr. Larry Parker at (800) 876-2767.

REFERENCES:
V.S. Polito, et. al., *Journal of Horticultural Science & Biotechnology* (2002) 77 (4) 474-478

Bridget M. Lamp, et. al., *J. Amer. Soc. Hort. Sci.* (2001) 126 (6): 689-696