4. Chemical Control/New Products

EFFECT OF TIMING AND ADJUVANTS ON LEAFMINER CONTROL WITH SUCCESS™

E. Beers, L. Lampson and B. Bret
WSU-Tree Fruit Research & Extension Center, 1100 N. Western Ave., Wenatchee, WA 98801

Tests against western tentiform leafminer were performed from 1995-1998 in an effort to determine optimum rates, timing, and adjuvant with spinosad (Success). This material was registerd for the first time in apples in early 1998. Tests included the current standard, Agri-Mek, and often the previous standard, Vydate.

Initial tests performed with an earlier formulation (NAF-144) indicated that rate had little effect on performance, but timing was critical (Fig. 3). Applications made when most of the larvae were in the tissue feeding stage, and had begun to pupate, were the least successful. The 2 applications timed for primarily sap-feeding stages provided good control. Tests in 1997 explored both rate and the use of an adjuvant (Figs. 1, 4, 2nd generation). In both cases, the addition of an adjuvant to an intermediate rate provided greatly superior control to spinosad alone. During the 3rd generation, this approach was explored further using different rates of 2 adjuvants, oil and Sylgard (Fig. 2). Again the addition of an adjuvant provided superior control, and there appeared to be a (nonsignificant) rate effect when Sylgard or oil was added (Fig. 4).

Although 2nd generation is the most typical target for leafminer sprays, a trial against the 1st generation was performed in 1998, to check efficacy during approximately the timing for leafrollers (ca. petal fall) (Fig. 5). Performance of all materials tested (including the standard, Agri-Mek) was poor, perhaps due to slightly later than optimum timing. This prompted us to revisit the timing issue for the 2nd generation test (Fig. 6), and try a timing earlier than our standard one (ca. 90% sapfeeders, 10% tissuefeeders). The positive effect of an adjuvant was again apparent, and the earlier timing appeared to have a slight (nonsignificant) advantage over the standard timing. A double application at the early and standard timing did not improve control.

Our conclusions to date are that the addition of an adjuvant will enhance the activity of Success, and that either oil or Sylgard will suffice. In addition, the timing may be more critical than with previous materials, and that even a few days later than optimum may mean the difference between "Success and failure". Growers are well advised to err on the early side of applications, rather than the late side.

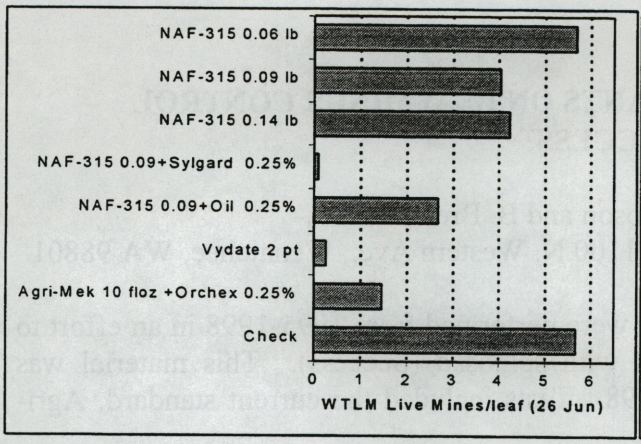

Fig. 1.. WTLM 2nd[d] generation, Milton-Freewater, OR, L. Lampson (appl. 19 June 1997.

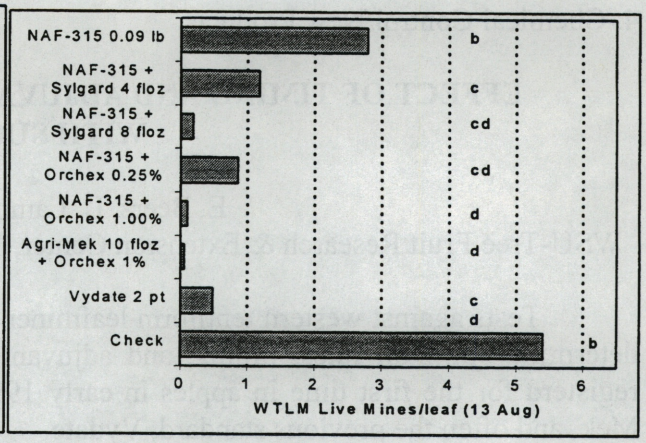

Fig. 2. WTLM 3[rd] generation, Milton-Freewater, OR, L. Lampson (applied 6 August 1997)

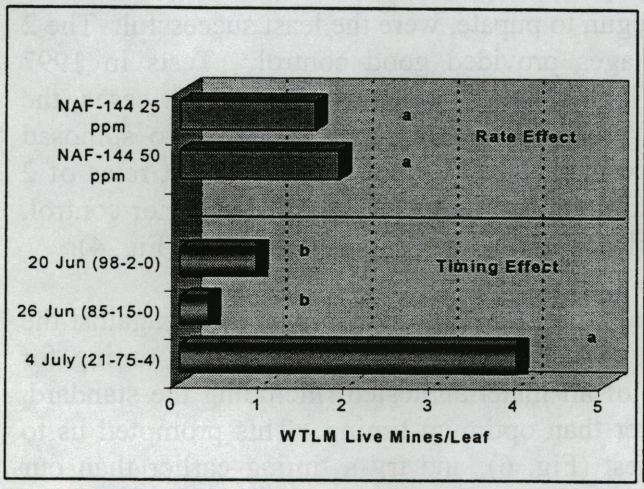

Fig. 3.. WTLM 2nd[d] generation, Milton-Freewater, OR, E. Beers, (1995); timing in () refer to % sap, tissue, pupae at time of application.

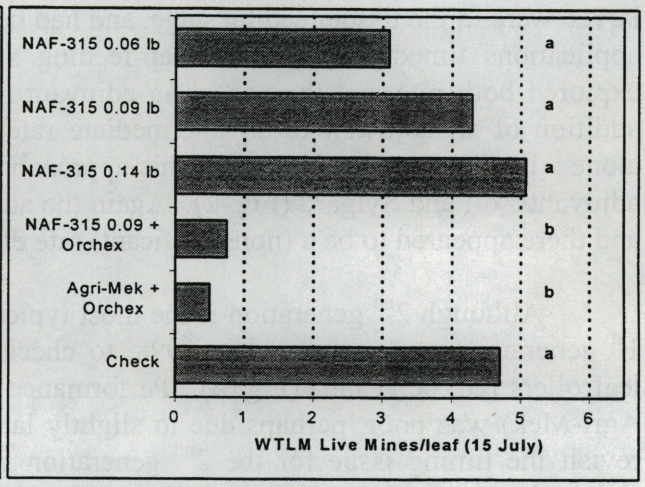

Fig. 4. WTLM 2[nd] generation, Brewster, WA E. Beers, applied 9 July 1997.

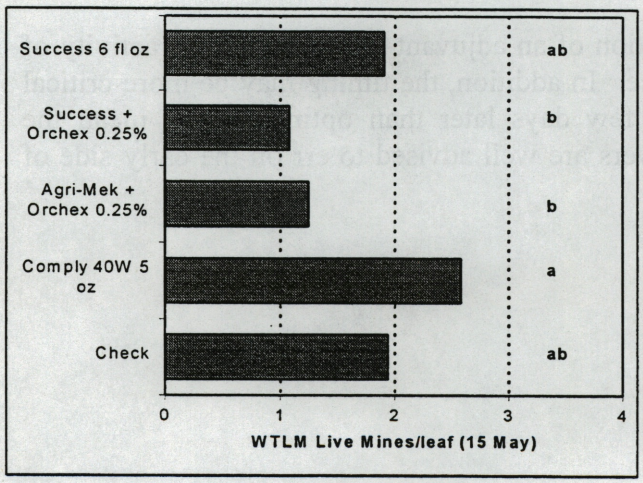

Fig. 5.. WTLM 1st generation, Brewster, WA E. Beers (applied 7 May 1998).

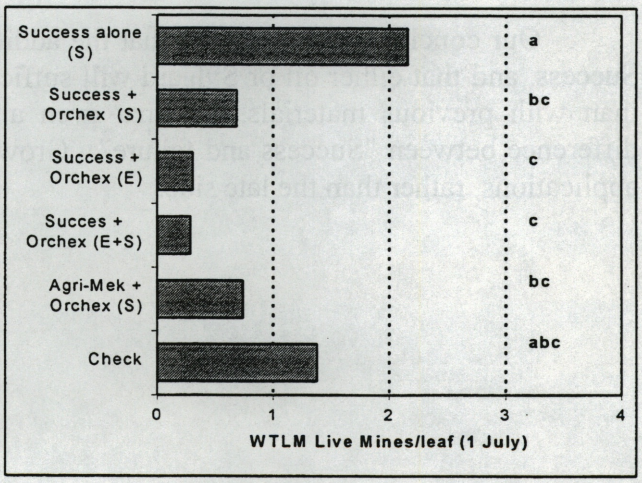

Fig. 6. WTLM 2nd generation, Brewster, WA, E. Beers (application date is E=18 June; S=25 June, 1998).