Effects of Prometryn Applied in Cilantro on Four Following Vegetable Crops.

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The issue: It took over a decade to secure the label for prometryn herbicide in cilantro with a lot efficacy and residue work and support efforts that were coming in waves. Now, that we finally have an effective weed control tool for cilantro the questions about plant-back restrictions needed to be addressed.

The project: With support of manufacturer and IR-4 program (addressing minor use crops needing crop protection) UC weed scientists conducted studies to evaluate intervals after prometryn application for safety to four rotational vegetable crops.

Methodology: At Santa Paula and Salinas, CA we applied prometryn at 3.2 and 6.4 pint/A the day after 'Leisure' cilantro was seeded and all plots, including untreated controls and all plots were irrigated. The experiments were designed as randomized completed blocks with four replications. At 50-55 days after planting the cilantro was terminated and beds reshaped in preparation for following vegetable crops. At 60, 90 or 120 days after treatment (DAT) with prometryn within each plot we transplanted Brussels sprouts, bell peppers and Napa cabbage or seeded spinach at Santa Paula, while at Salinas both spinach and Napa cabbage were seeded. At both locations we evaluated weed control and injury to rotational vegetables at 2 and 4 weeks after planting them.

Results: At Santa Paula prometryn reduced broadleaf weed number in cilantro 90-95% compared to untreated check, but as expected had no effect on a deep-rooted perennial: field bindweed. No significant injury was observed in any of the following vegetable crops, at all planting dates or herbicide rates. On a scale from 1 (no injury) to 10 (dead plants) we have not exceeded 2 in blind ratings of three staff evaluators in any plots. The stands of seeded spinach had similar number of plants in all plots. This suggested that prometryn applied in cilantro may be safe to these rotational crops in warm clay-loam soil around Santa Paula.

At Salinas, prometryn reduced broadleaf weed numbers in cilantro >99% compared to the untreated check. Results from seeded spinach at 60-DAT are inconclusive, due to problems with background effects but 90 and 120-DAT plantings had no significant injury. Prometryn was safe on seeded Napa cabbage at 60-DAT / 43 days after planting (DAP). No reduction of stand occurred, and only slight injury at the 1.6 (low) and 3.2 lb ai/Ac (high) rates (3.1 and 3.8 ratings, respectively) were observed. Prometryn at 1.6 lb ai/Ac was safe on transplanted Brussels sprouts at 60-DAT / 43-DAP. At the high rate of prometryn, Brussels sprouts showed no reduction in stand, but had moderate injury (4.6 rating). Both rates of prometryn were safe on transplanted bell peppers at 60-DAT, with no stand reduction and only slight injury (1.0 and 2.8 ratings) observed at 43-DAP.

The conclusion from both sides is that: Brussel sprouts, Napa cabbage and bell peppers are safe to transplant as early as 60 days after prometryn application, while 90 days will assure safety of spinach or Napa cabbage if they are grown from seed following prometryn application in previous cilantro crop.