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***Monilinia fructicola* and *Monilinia laxa* isolates from stone fruit orchards sprayed with fungicides display a broader range of responses to fungicides than those from unsprayed ‘organic’ orchards**

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Monilinia fructicola and *Monilinia laxa* are causal agents of brown rot, the most serious fungal disease of stone fruit (*Prunus* species). The disease is controlled primarily by applying fungicides. It was hypothesised that *Monilinia* isolates exposed to a regime of fungicidal sprays would exhibit greater tolerance to those compounds than isolates that had not experienced them. Sixty-six *M. fructicola* and 52 *M. laxa* isolates were collected from fungicide-sprayed and unsprayed ‘organic’ commercial and domestic orchards. The fungicides propiconazole, iprodione, and mixture of fluopyram and trifloxystrobin were used regularly on all the sprayed orchards tested, and these were used to challenge all *Monilinia* isolates in vitro. As expected, isolates collected from sprayed orchards were on average more tolerant to the fungicides, as measured by effective concentration of fungicide reducing mycelial growth by 50% (EC₅₀). This trend was evident for both fungal species tested, but it was statistically significant only for *M. fructicola*. *M. laxa* isolates were on average more tolerant to propiconazole than were *M. fructicola* isolates, while average responses to iprodione and fluopyram + trifloxystrobin were similar for both species. Although tolerant and sensitive isolates were identified under both sprayed and unsprayed regimes, there was a greater range of responses to all three fungicides by isolates from sprayed orchards. Isolates with tolerance to two fungicides were not exclusively from sprayed orchards, but occurred more frequently there.

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