

SPRAY MIXTURE INCOMPATIBILITY

This information is offered only as a general guide to incompatibilities of pesticide combinations, not to the efficacy of combinations on pest populations.

Read the labels before mixing products.

Compatibilities indicated may be changed by certain adjuvants, different formulations, combinations of more than two materials, and environmental factors such as temperature and humidity.

- When potential compatibility is indicated, minimum agitation should be provided in all cases.
 - Designations apply to at least one formulation of specified products. In cases where compatibility differs among formulations, the most conservative designation has been given. Defer to respective labels in all cases.
 - Unless otherwise noted on the label, use soon after mixing, preferably in systems with continuous agitation.
 - Physical compatibility: although there may be no chemical incompatibility between the active ingredients of two given pesticides, some formulations of these products may not be physically compatible. This is particularly true when mixing at high concentrations and when mixing wettable powders with emulsifiable concentrates. Prepare a small batch of a proposed mixture before making tank combinations, to check for unacceptable physical reactions.
 - Combining two emulsifiable concentrates or an emulsifiable concentrate with a wettable powder can lead to compatibility problems. Whenever possible, combine only the same type of formulation.
- **If tank mixes of different formulations are used, add in the following order:**
- 1) **water soluble packets,**
 - 2) **wettable powders,**
 - 3) **flowables,**
 - 4) **emulsifiable concentrates,**
 - 5) **oils.**
- Making a slurry of wettable powders before adding them to the tank aids thorough mixing. Chemicals should be added when the spray tank is one-half to two-thirds full and with sufficient agitation. Excess foaming may be reduced by adding surfactants or antifoaming agents. In some cases injury results not only when two materials are mixed in the same tank, but when one material is applied after another. This is particularly true when oil is applied before or after a pesticide or nutrient spray.

Table 19 – Spray Mixture Incompatibility* (general guidelines for active ingredients, individual formulations may vary)

Ambush																								
+ Apollo																								
? + Asana																								
A + + Benlate																								
+ + + + Bt																								
+ + + + + Captan																								
M + + + + + Carzol																								
? ? + N + ? + copper (fixed)																								
+ + + + N + + D Diazinon																								
+ + + + + + + + Digon, Dimate (dimethoate)																								
M ? ? + N + + D + D Ferbam																								
+ + + + + + + + + + Guthion																								
A + + + + + + + ? + + + Imidan ¹																								
+ + + + + W + + + + + Kelthane																								
? + ? + + + ? + + + + + + Lannate (methomyl)																								
N ? N N + N D N + ? N N N N N lime																								
+ + + + + + + + + W + + W W + N Lorsban ¹																								
A + ? + + + + + D + + + + ? D + mancozeb (Dithane, Manzate, Penncozeb)																								
+ + + + ? + + + ? + + + + ? + ? + ? Maneb, Manex, Polyram																								
+ + + + ? + + + + + + + ? + + ? + ? + Methoxychlor																								
A + + + + + + + + + + + + + + + + Nova ¹																								
+ + + + ? N + + + + + W + ? + + L + + + + + oil (horticultural)																								
+ + ? A + A M M ? + + + + + ? N L A ? + + + Pounce																								
A + + + + + + + + + + + + + + + + ? + + Procure, Rubigan																								
+ + + + + + + + ? + + + + + + + N + + ? ? + ? + + Provado																								
+ + + + + + + + + + + + + + + + ? ? + + + + + Pyramite																								
+ + + + + ? + ? + + + + + + ? + + + + + + + + + Savey																								
M + + + + + + + + + + + + + N + + + + + ? + + + + + Sevin (carbaryl)																								
+ + + + + + + + ? + + + + + + + + + + + ? + + + SpinTor																								
A + ? + N + + + + + + W + + + + + W + + + + + N + + + + + + sulfur																								
+ + + + + + + + ? + + W + ? ? N ? + ? ? + + + + + + ? + ? Syllit																								
+ + + + + W + + + + + + + + + + N + + + + + + + + + ? + + ? + W Thiodan, (endosulfan)																								
A + + + + + + + + N + + + + + + + + N + + + + + + + + + + + + + + Topsin M																								
A + + + + + + + + + + + M + + + ? L + + ? + M + + + + + + + + + + + Vendex																								
+ + + + + + + + + + + + + + + + + N + + + + + + + + + + ? + + + + + + + + + Vydate																								
+ + ? + + + + + + D + D + + + ? D W + + W + + + + + + + + + + + + + + + + Ziram, Thiram																								

- KEY TO SYMBOLS**
- + = Potentially compatible if used as directed.
 - ? = CAUTION, compatibility unknown or questionable.
 - A = Compatible, but continuous agitation required.
 - D = Decomposes on standing, residual action reduced.
 - L = Where applicable, use liquid or emulsifiable concentrate formulation.
 - M = Compatibility marginal, maximum agitation required for products not to separate.
 - N = **Not Compatible!**
 - W = Where applicable, use wettable powder formulations.

1= Ratings apply only if mixing directions on Imidan, Lorsban 50WS, and Nova labels are carefully followed to avoid incompatibility between water soluble packet and other materials. This caution also applies to other products packaged in water soluble bags (WSB formulations).

*Adapted from: 1998–1999 Tree Fruit Production Guide, C.M. Felland, editor. Pennsylvania State University; 1998 Pest Management Recommendations for Commercial Tree-Fruit Production, by W.C. Stiles, W.F. Wilcox, A.M. Agnello, J. Kovach, and P.D. Curtis. Cornell Cooperative Extension. Additional information from manufacturers and Fruit Spraying Calendar; 1993, Cooperative Extension Service, Michigan State University, edited by J.W. Johnson, J. Hull, and A.L. Jones.