

## Sevin<sup>®</sup> 4F

brand Carbaryl Insecticide



### Effectively thin apples

Sevin<sup>®</sup> 4F is registered for apple thinning and may be used to chemically thin apples for increased quality, but label directions must be carefully followed. Many factors influence the degree of thinning achieved with Sevin 4F. Timing of spray, tree age, variety, nutrition, previous crop, pruning, degree of set, bloom weather and use of other chemical thinners are all factors to be considered. When any of these favor reduced fruit set, caution should be observed in applying Sevin 4F so that excessive thinning and possible yield reductions will not occur. In extensive testing, thinning of crops other than apples has not been observed.

The aim of apple thinning with Sevin 4F is to thin the weaker side blooms, while leaving the dominant, more desirable king blooms. King blooms produce the large beautiful apples that consumers want, while side blooms produce smaller apples that bring a lower price at the packinghouse. With Sevin 4F, side blooms are removed before they have a chance to develop, conserving valuable energy for use in the development of king blooms.

As a thinning agent carbaryl stimulates ethylene biosynthesis, which in turn stimulates the abscission, promoting enzymes (pectinase, cellulase and polygalacturonase) that promote the hydrolysis of insoluble pectates and cellulose compounds sticking the cell walls together in the abscission zone at the base of the peduncle or pedicel. There is a highly significant correlation between the content of ethylene in fruits and adjacent leaves and the retention of fruits on the tree. Higher ethylene content leads to easier fruit dropping.

Following carbaryl application, the ethylene concentration in the fruitlets strongly increases as shown by gas chromatographic measurements.

### To Reduce Fruit Set — Apple Trees (Fruit):

Crop	Quarts of this product per acre	Specific Directions
Apples only; for fruit thinning	1 to 3	<p><b>Observe bee caution.</b></p> <p>Apply 1 to 3 quarts per acre of Sevin brand 4F Carbaryl Insecticide between 80% petal fall and 16mm fruit size. Use the higher rates on hard to thin varieties at the early timing which is in the 80% petal fall to 6mm fruit size. Use the lower rates on easy to thin varieties and at the later thinning period which is the 10 to 16mm fruit size. The rate to use per acre will depend on varieties, tree size, row spacing, weather conditions at the time of and following applications.</p> <p>The most effective spray gallonage will depend on the tree size, planting density, row spacing and amount of foliage. Use sufficient spray volume to ensure adequate coverage (100 to 400 gallons/acre). Avoid spray to the point of runoff. <b>Reduce spray coverage to the lower portion of the tree since overthinning may occur here.</b></p> <p>Factors such as climatic temperature, high humidity, frost, tree age, variety, nutrition, previous crop, pruning and bloom may influence fruit thinning results with the product. Exercise caution to avoid possible overthinning. For the most effective results, apply under good drying conditions and when daytime temperatures (°F) will be 70 to low 80s for the following one to three days. Application with daytime temperatures in excess of 80°F may result in overthinning.</p>

*(continued next page)*

TESSENDERLO KERLEY, INC.  
2255 North 44th Street  
Suite 300  
Phoenix, AZ 85008-3279

Customer Service:  
1-800-525-2803  
1-602-889-8300

www.novasource.com

# Apple Thinning

*(continued from previous page)*

Sevin brand 4F Carbaryl Insecticide may be mixed with other fruit thinners, however, use caution to avoid overthinning and other adverse effects. Consult with local fruit thinning experts in your area for recommendations on appropriate tank mixing partners. Refer to the other product labels for specific use directions.

Note: The use of Sevin brand 4F Carbaryl Insecticide may result in fruit deformity under certain environmental conditions. Before using on any variety of apples, the user must weigh the risk versus benefits when using this product, particularly when using between 80% petal fall and 6mm fruit size. Red Delicious are more sensitive to this phenomenon and in particular, the varieties Bisbee, Red Chief and Vallee Spur are very susceptible to conditions causing fruit deformity. Precipitation and temperatures below 65°F increases the possibility of fruit deformity. The use with summer spray oils and wetting agents may increase the risk of fruit deformity and injury. Consult with fruit thinning experts in your area for advice on using this product on specific apple varieties under local growing conditions or other questions. Observe all restrictions on the use of this product for apple thinning.

## Restrictions: Bee Caution

Do not apply this product to target crops or weeds in bloom. If weeds or cover crop bloom is present, mow orchard floor or between rows prior to applying this product.

## Application Tips and Timing

- Apply when fruitlets are between 3 mm and 20 mm under ideal conditions or approximately 10-25 days after full bloom.
- For most consistent thinning effect, apply Sevin 4F when daytime temperatures will be above 70°F (21°C) for three days and during period when foliage remains moist for 30 minutes.
- Early morning is a good time to spray when temperatures are climbing and trees are becoming physiologically active.
- Evenings are also good because trees remain wet longer and, in most conditions, will dry as the next day begins.
- Apply varieties vary in their response to thinning applications of Sevin. Experience in the orchard and consultation with local experts are invaluable to achieving the desired outcome.
- Always read and follow label directions.

Important: Always read the label before buying and follow label instructions when using this product.

### CONDITIONS OF SALE – LIMITED WARRANTY AND LIMITATIONS OF LIABILITY AND REMEDIES

Tessenderlo Kerley, Inc. warrants only that this product conforms to the product description on the label. Except as warranted by this label, Tessenderlo Kerley, Inc. makes no representation or warranty or guarantee, whether expressed or implied, of fitness for a particular purpose of merchantability, or of product performance. Tessenderlo Kerley, Inc. does not authorize any agent or representative to make any such representation, warranty or guarantee. To the extent consistent with applicable law, Tessenderlo Kerley, Inc.'s maximum liability for breach of its warranty or for use of this product, regardless of the form of action, shall be limited to the purchase price of this product. To the extent consistent with applicable law, buyer and user acknowledge and assume all risks and disposal liability resulting from handling, storage, use and disposal of this product. If buyer does not agree with or accept these warranty and liability limitations, buyer may return the unopened container to the place of purchase for full refund. Buyer's use of this product shall constitute conclusive evidence of buyer's acknowledgement and acceptance of the forgoing limitations. Some states do not allow the exclusion of implied warranties or the limitation of certain damages, so the above may not apply. The purchase, delivery, acceptance and use of this product by the buyer are subject to the terms and conditions of seller's sales invoice for this product.

NovaSource and Sevin are registered trademarks of Tessenderlo Kerley, Inc.  
©2006, 2013 Tessenderlo Kerley, Inc.

Sevin\_PI\_US\_Apple Thinning\_01/2013

TESSENDERLO KERLEY, INC.  
2255 North 44th Street  
Suite 300  
Phoenix, AZ 85008-3279

Customer Service:  
1-800-525-2803  
1-602-889-8300

[www.novasource.com](http://www.novasource.com)