

BASF
We create chemistry

RAK[®] 3 + 4



MAPP 17824

Pheromone vapour product containing 3.82% E8,E10-Dodecadienol, 4.1% Z11-Tetradecenylacetate and 1.9% n-Tetradecyl acetate to combat Codling moth (*Cydia pomonella*) and Summer fruit tortrix (*Adoxophyes orana*) in apple, pear and cherry orchards.

The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work.

SAFETY PRECAUTIONS

Operator protection

Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:

WEAR SUITABLE PROTECTIVE GLOVES when handling the product.

However, engineering controls may replace personal protective equipment if a COSHH assessment shows that they provide an equal or higher standard of protection.

WHEN USING DO NOT EAT, DRINK OR SMOKE. WASH HANDS AND EXPOSED SKIN BEFORE EATING OR DRINKING AND AFTER WORK.

DO NOT HANDLE product unnecessarily.

Environmental protection

DO NOT CONTAMINATE SURFACE WATERS OR DITCHES with product.

Do not clean application equipment near surface water.

Avoid contamination via drains from farmyards and roads.

Storage and disposal

Do not re-use container for any purpose.

KEEP OUT OF REACH OF CHILDREN.

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDING STUFFS.

KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.

UNUSED PRODUCT SHOULD BE STORED IN A REFRIGERATOR BETWEEN 2 AND 5°C.

This label is compliant with the CPA Voluntary Initiative Guidance



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252 PC

Supplied by: BASF plc, Agricultural Solutions
PO Box 4, Earl Road, Cheadle Hulme, CHEADLE,
Cheshire SK8 6QG, Tel: 0161 485 6222

Emergency Information: (24 hours freephone): 0049 180 2273112
Technical Enquiries: 0845 602 2553 (office hours)

RAK® 3 + 4

**Pheromone vapour product containing
3.82% E8,E10-Dodecadienol, 4.1% Z11-
Tetradecenylacetate and 1.9% n-Tetradecyl acetate**

Warning

Causes skin irritation.

May cause an allergic skin reaction.

Toxic to aquatic life with long lasting effects.

Wear protective gloves.

Contaminated work clothing should not be allowed out
of the workplace.

Avoid breathing mist.

IF ON SKIN: Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

Dispose of contents/container to a licensed hazardous-waste disposal
contractor or collection site except for empty clean containers which can
be disposed of as non-hazardous waste.

**To avoid risks to human health and the environment, comply with
the instructions for use.**



IMPORTANT INFORMATION

**FOR USE ONLY AS AN HORTICULTURAL PHEROMONE CONTROL
AGENT.**

Crops: apple, pear and cherry.

Orchard distribution density: 500 product units per hectare (with increased
density at orchard border. See directions for use).

**READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A
MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN
OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT
PROTECTION PRODUCTS.**

DIRECTIONS FOR USE

IMPORTANT: This information is approved as part of the Product Label. All instructions within this section must be read carefully in order to obtain safe and successful use of this product.

RAK 3+4 is a pheromone control system for use in apple, pear and cherry orchards.

RAK 3 is a pheromone that reduces fruit damage from codling moth (*Cydia pomonella*) in fruit trees. RAK 4 is a pheromone that reduces fruit damage from summer fruit tortrix (*Adoxophyes orana*) in fruit trees. The mode of action of both pheromones is to disrupt moth mating behaviour and therefore prevent populations from developing.

RAK 3+4 is a sealed product unit consisting of two separate chambers, one for RAK 3 and the other for RAK 4 in a stabilised form.

Restrictions/Warnings

RAK 3+4 is specific to certain moth species only. The product does not work on all insect orders or species of moth which cause damage to fruit. Use an insecticide as part of an integrated pest management programme to control species not recommended for RAK 3+4. If in doubt consult your advisor.

This product should be used in conjunction with an appropriate pest forecasting system. The efficacy of the pheromones should be monitored throughout the season.

Do not use in orchards with a high pest density. In the year preceding the use of RAK 3+4, the damage caused by codling and tortrix moths should not exceed 1% of the fruits infested (including damage to fallen fruits).

RAK 3+4 will not be effective if there is a high density of codling moth and/or tortrix moth in the area adjacent to the orchard being treated.

An insecticide application is recommended if the damage threshold is exceeded during treatment with RAK 3+4.

Do not use in orchards less than 1 ha. The outer product bag should be opened immediately prior to use to avoid loss of efficacy.

It is important to ensure the product is positioned in the shade, or in locations which will be shaded by the end of vegetative growth.

Unused product should be stored in a refrigerator between 2 and 5°C.

Pest control

The RAK 3 and RAK 4 pheromones are released by volatilisation, preventing male and female moths from locating each other and reproducing.

RAK 3+4 is most effective in orchards with a low pest population density. RAK 3+4 should not be used in orchards where more than 1% of fruits (including fallen fruits) were damaged by codling and tortrix moths in the preceding year, unless the first generation of moths is treated with an insecticide to reduce the initial population.

The best results will be achieved in isolated orchards, i.e. those which are 100 m or more away from other orchards or high trees.

Optimum results are also achieved in grouped orchards containing trees of similar size and shape.

RAK 3+4 will not be effective if there is a high density of codling moth and/or tortrix moth in the area adjacent to the orchard being treated.

RAK 3+4 will not be effective in orchards less than 1 ha.

Crop Specific Information

Time of application

The pest population should be monitored using an appropriate pest forecasting system or monitoring traps.

The product should optimally be put in place one week before the forecast arrival of the adult moths.

The latest time of application is when the first generation of adult moths start to fly.

Only one application of product per season is required.

NOTE: The product is packaged in airtight bags and protected from the light. The package should therefore only be opened immediately prior to installation to avoid any loss of efficacy.

Dose rate

RAK 3+4 should be used at a rate of 500 product units per ha.

The density of product placement should be increased at the orchard border. See section 'Treatment of borders' below.

Positioning the product

The pheromone must be distributed evenly throughout the orchard in a grid system at 500 product units per hectare. One should be placed approximately every 20 square meters eg. for a row width of 3.5 m a unit should be placed every 5.7 m. It is important to make sure that they are positioned in the shade or in places which will be in the shade by the end of vegetative growth. The product must be placed in the upper third of the trees, preferably at alternating heights.

Treatment of borders

To prevent moths from adjacent areas encroaching into the treated orchard and to maintain the concentration of pheromones at the edge of the treated area, additional product must be placed at the borders.

a) Isolated orchards: In the outside rows and at the ends of the rows, the number of product units should be doubled (eg. every 3 m instead of 5.7 m) and hung on the outside of the trees. Paths and tracks through the orchard should also be treated as borders, as should areas where young trees are growing next to established trees.

- b) Contiguous orchards, i.e. those in intensive fruit-growing areas adjoined to other fruit-growing orchards (between 10 and 100 m away). Place one product unit every 3 m along the edge of the adjacent orchards.
- c) If there are small woods, gardens, woodpiles or other divergent areas up to 12 m wide within the orchard, these should be treated as if they were part of the orchard. If these areas are larger than 12 m they should be treated as a border as described in a) above.

Checking efficacy during the season

Install pheromone monitoring traps in the orchard being treated (refer to the instructions for using these traps) in order to check the efficacy of the pheromones. These traps must be checked once a week.

If these traps no longer catch moths in the orchard being treated, this indicates that the RAK 3+4 is working properly. However, this is not always proof that the treatment has been successful. RAK 3+4 influences the behaviour of the males when they are looking for females to mate with, but it is always possible that mated females may enter the treated orchard from outside. Checks for fruit damage must therefore always be carried out during the season (see below).

If the latest monitoring thresholds are exceeded, this is an indication that the moth population is too high, meaning that the result of treatment with RAK pheromones alone may be insufficient. In this case, treatment with a conventional insecticide is necessary.

Checking damage to fruits

At the end of June/beginning of July caterpillars may start to burrow into the young fruits (codling moths) or to feed on the skin of the fruit (tortrix moths). The precise timing may be communicated by your agronomist. Four samples per orchard, each comprising 250 fruits, should be examined for pest damage. If fruit damage exceeds 0.5%, immediate treatment with a suitable insecticide is necessary.

Disposal

RAK 3+4 remains effective for a single growing season, after which the pheromone chambers should have completely emptied by volatilisation. If the product is collected from the orchard at the end of the season, gloves should be worn. The product should be disposed of at a licensed hazardous-waste disposal contractor or collection site except for empty clean units which can be disposed of as non-hazardous waste. Do not contaminate ponds, watercourses or ditches with the product or the empty packaging.

The following does not form part of the authorised label text.

With many products there is a general risk of resistance developing to the active ingredients. For this reason a change in activity cannot be ruled out. It is generally impossible to predict with certainty how resistance may develop because there are so many crop and use connected ways of influencing this. We therefore have to exclude liability for damage or loss attributable to any such resistance that may develop. To help minimise any loss in activity the BASF recommended rate should in all events be adhered to.

Numerous, particularly regional or regionally attributable, factors can influence the activity of the product. Examples include weather and soil conditions, crop plant varieties, crop rotation, treatment times, application amounts, admixture with other products, appearance of organisms resistant to active ingredients and spraying techniques. Under particular conditions a change in activity or damage to plants cannot be ruled out. The manufacturer or supplier is therefore unable to accept any liability in such circumstances. All goods supplied by us are of high grade and we believe them to be suitable, but as we cannot exercise control over their mixing or use or the weather conditions during and after application, which may affect the performance of the material, all conditions and warranties, statutory or otherwise, as to the quality or fitness for any purpose of our goods are excluded and no responsibility will be accepted by us for any damage or injury whatsoever arising from their storage, handling, application or use; but nothing should be deemed to exclude or restrict any liability upon us which cannot be excluded or restricted under the provisions of the Unfair Contract Terms Act 1977 or any similar applicable law.

Section 6 of the Health and Safety at Work Act

Additional Product Safety Information

The product label provides information on a specific pesticidal use of the product; do not use otherwise, unless you have assessed any potential hazard involved, the safety measures required and that the particular use has "off-label" approval or is otherwise permitted under the Plant Protection Products Regulations.

The information on this label is based on the best available information including data from test results.

Safety Data Sheet

To access the Safety Data Sheet for this product scan the QR code or use the weblink below:



bit.ly/RAK_3_4_sds

Alternatively, contact your supplier.

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