

Product Bulletin



Dow AgroSciences LLC

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RESTRICTED USE PESTICIDE

Due to high acute inhalation toxicity and carcinogenicity. For retail sale to and use only by certified applicators or persons under their direct supervision and only for those uses covered by the certified applicator's certification.

Telone[®] II

EPA Reg. No. 62719-32

plus

K-PAM[®] HL

EPA Reg. No. 5481-483

OR

Sectagon[®] 42

EPA Reg. No. 61842-6

OR

Vapam[®] HL

EPA Reg. No. 5481-468

2(ee) Recommendation[†]

For Distribution and Use Only in the States of Oregon and Washington.

Sequential Application of Telone II and K-PAM HL or Sectagon 42 or Vapam HL for Control of Plant Parasitic Nematodes and Suppression of *Verticillium dahliae* and Certain Other Soil Pests of Caneberries (Subgroup 13A)¹, Strawberry and Nursery Crops

ATTENTION

[†] This recommendation is made as permitted under FIFRA Section 2(ee) and has not been submitted to or approved by EPA.

- It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
- Read the label affixed to the container for Telone II, K-PAM HL, Sectagon 42 and Vapam HL before applying. Carefully follow all precautionary statements and applicable use directions.
- **Except as specified in this product bulletin, use of these products is subject to all use precautions and limitations imposed by the labels affixed to their containers.**

Directions for Use

¹Caneberries (subgroup 13A) including blackberry, loganberry, red and black raspberry and cultivars and/or hybrids of these.

The following use directions provide information for a **sequential application program** of Telone[®] II soil fumigant and K-PAM[®] HL or Sectagon[®] 42 or Vapam[®] HL soil fumigant. For best results, apply Telone II and K-PAM[®] HL or Sectagon[®] 42 or Vapam[®] HL in the fall. Alternative treatment schedules include a fall application of Telone II followed by a spring application of K-PAM[®] HL or Sectagon[®] 42 or Vapam[®] HL, a fall application of K-PAM[®] HL or Sectagon[®] 42 or Vapam[®] HL followed by a spring application of Telone II, or a spring application of Telone II and K-PAM[®] HL or Sectagon[®] 42 or Vapam[®] HL. Due to time constraints resulting from varying weather conditions, a spring application may result in delayed planting.

Application Directions for Telone II

Soil conditions at the time of application of Telone II that allow rapid diffusion of the fumigant as a gas through the soil normally give best results. Compacted soil layers within the desired treatment zone must be fractured before or during application of the fumigant. Soil temperature must be between 40 and 90°F at the depth of injection, moist from 2 inches below the soil surface to at least 9 inches deep as determined by the feel method to be a minimum of 50% available water capacity, free of clods, and with crop residue thoroughly incorporated into the soil at least at the time of application and sealing.

Apply Telone II as a broadcast treatment at the minimum rate of 15 gallons per acre using either chisel (shank) or Nobel (sweep) application equipment. Use rates higher than the minimum if one or any combination of the following conditions apply: high pest populations in pre-treatment samples; applying to fine-textured soils; planting of deep-rooted trees or shrubs; or if the crop will remain in production for more than a year. Chisel equipment must have ripper-type shanks. With chisel equipment, use a shank spacing of 12 to 24 inches. Do not exceed a shank spacing of 24 inches. Outlet depth should be at least 18 inches below the final soil surface. Nobel plow equipment may be used only when either shallow soils (those less than 18 inches deep) or soils containing excessive live root material, such as alfalfa or corn stubble, prevents the use of shank application. Nobel plow outlet spacing should not exceed 12 inches and application should be made to a depth of at least 15 inches. Fumigant penetration may be limited if a plow pan exists below the depth of the Nobel blade. Do not use plow-sole application. Immediately after applying Telone II, use a disc, paddle wheel or similar device to uniformly mix the top 4 to 6 inches of soil to effectively eliminate chisel traces. Then follow immediately with a ring roller or cultipacker to seal the soil surface. Expose little or no crop residue at the surface following the sealing operation. Any remaining crop residue should lie flat following sealing. Following application and sealing, leave soil undisturbed for 7 to 14 days. The longer undisturbed interval may be necessary if the soil is or becomes cold or wet during this period.

Application Directions for K-PAM HL or Sectagon 42 or Vapam HL

Soil conditions at the time of application of K-PAM HL or Sectagon 42 or Vapam HL must be between 40 and 90°F in the treated zone and soil moisture in the top 6 inches be at 60 to 80% field capacity. If necessary, pre-irrigate about a week prior to treatment to adjust soil moisture to desired levels. Immediately before application, cultivate lightly if the soil has crusted.

Apply K-PAM HL or Sectagon 42 or Vapam HL either by chemigation or by soil injection or surface incorporation as a sequential application with Telone II. When K-PAM HL or Sectagon 42 or Vapam HL is used prior to Telone II, allow a minimum of 7 days between treatments. When K-PAM HL or Sectagon 42 or Vapam HL is applied after Telone II, allow a minimum of 7 days before disturbing the soil or beginning any pre-irrigation for the application of K-PAM HL or Sectagon 42 or Vapam HL. Regardless of application sequence, a longer undisturbed interval is required if the soil becomes cold or wet.

For chemigation, apply K-PAM HL at a minimum rate of 24 gallons broadcast equivalent per acre or Sectagon 42 or Vapam HL at the minimum rate of 30 gallons broadcast equivalent per acre in a minimum of 0.5 acre-inch of water to the desired depth of treatment. Heavier soils may require the higher amount of water. Use only those sprinkler systems that give large water droplets to prevent excessive fumigant loss. Do not apply when wind speed favors drift beyond the area intended for treatment or when conditions of thermal inversion exist. If for any reason chemigation is interrupted prior to completion (e.g., excessive wind, equipment malfunction, etc.), back up the system prior to restarting to ensure full application to the area affected prior to shutting down the system and to allow full distribution of the K-PAM HL or Sectagon 42 or Vapam HL solution throughout the irrigation system prior to moving over untreated soil. After application is completed, flush equipment until all K-PAM HL or Sectagon 42 or Vapam HL is eliminated from the system. Follow all application directions described in the General Precautions for Irrigation Systems and Sprinkler Chemigation Systems sections in the EPA registered label for K-PAM HL or Sectagon 42 or Vapam HL.

For soil injection, apply K-PAM HL at a minimum of 24 gallons broadcast equivalent per acre or Sectagon 42 or Vapam HL at the minimum rate of 30 gallons broadcast equivalent per acre using either shanks, sweep blades, double-winged shanks, or a Noble Plow blade combined with a surface application. Space single shanks no more than 6 inches apart with either single injection outlets no more than 6 inches deep or dual injection outlets spaced at 6 and 12 inches deep. Space single sweep blades no more than 12 inches apart with sweeps 12 inches wide and a spray nozzle that will provide broadcast coverage from sweep tip to sweep tip. Space double-winged shanks no more than 12 inches apart with no more than 9 inches between adjacent wings and with spray nozzles that provide uniform coverage.

The Noble Plow blade should have spray nozzles spaced 6 inches apart to give uniform coverage, an injection depth set at 12 to 14 inches deep, and be combined with a surface application using a disk to immediately incorporate the K-PAM HL or Sectagon 42 or Vapam HL placed on the surface. Follow all the above applications immediately with a roller/packer to smooth and compact the soil surface.

For surface incorporation, apply K-PAM HL at a minimum of 24 gallons broadcast equivalent per acre or Sectagon 42 or Vapam HL at the minimum rate of 30 gallons broadcast equivalent per acre to the soil surface immediately in front of soil covering equipment, such as rotary tillers, disks, etc., to a minimum depth of 6 inches using a single-pass incorporation followed immediately by a roller/packer to smooth and compact the soil surface.

Soil Fumigation Interval

Planting may take place only after Telone II, K-PAM HL or Sectagon 42 or Vapam HL are no longer present within the zone of fumigation. If K-PAM HL or Sectagon 42 or Vapam HL follows Telone II and is applied in the spring with the Noble plow blade, apply all fertilizers after the application of K-PAM HL or Sectagon 42 or Vapam HL. Thoroughly aerate the soil 5 to 7 days after the application of K-PAM HL or Sectagon 42 or Vapam HL by shallow plowing and/or disking to allow the fumigant to dissipate. Wait 14 to 21 days after the application of K-PAM HL or Sectagon 42 or Vapam HL before planting the crop. Use the 21-day interval if soil temperatures are below 60°F regardless of any other precautions that may have been taken. In addition to waiting 21 days, set indicator plants (e.g., tomato seedlings) in various places in the treated field and cover the plants with a "hot cap," plastic sheeting, bucket, etc., to trap and confine any fumes present. Leave the plants undisturbed for a minimum of 24 hours then examine for injury before planting the crop. Do not plant the crop if injury to indicator plants is observed. If noxious fumes are noticeable at planting, rework the soil. If Telone II follows K-PAM HL or Sectagon 42 or Vapam HL and is applied in the spring, wait at least 1 week for each 10 gallons of Telone II applied beyond the initial undisturbed period before planting the crop. If fumigant is present at planting, thoroughly aerate the soil following shallow ripping and/or disking to allow fumigant odors to dissipate. Do not till the soil so deep as to move untreated soil from below the treated zone into the treated soil.

Special Considerations and Precautions:

- Use of this sequential application program of reduced rates of Telone II and K-PAM HL or Sectagon 42 or Vapam HL does not guarantee pest-free growing conditions in the second year.
- Directions in this product bulletin are not intended for use on certified nursery stock.
- Use of Telone II and K-PAM HL or Sectagon 42 or Vapam HL according to these use directions will control root knot and lesion nematode populations present within the fumigated zone at the time of fumigation. The fumigated zone can vary depending upon a number of factors, such as fumigant rate, application methods used, depth of fumigant application, soil moisture, soil type, soil temperature and soil tilth (including soil compaction and soil porosity). The sequential combination of reduced rates of Telone II and K-PAM HL or Sectagon 42 or Vapam HL will not control or prevent reinfestation subsequent to the treatments. Subsequent pest populations may infest the fumigated zone from irrigation water, equipment or other sources of contamination or may invade the fumigated zone from surrounding untreated soil, such as from beneath the fumigated zone or from unfumigated pockets within the fumigated zone.
- If the application of Telone II occurs in the fall and the application of K-PAM HL or Sectagon 42 or Vapam HL is not planned until spring, a cover crop, such as wheat or grass, can be planted following the undisturbed soil interval associated with the application of Telone II to reduce the potential for overwinter soil erosion.
- Refer to the product labels affixed to the containers for Telone II and K-PAM HL or Sectagon 42 or Vapam HL for soil conditions. Product performance can be expected to improve as the soil conditions move toward optimum. Use of this sequential application program of Telone II and K-PAM HL or Sectagon 42 or Vapam HL under soil conditions outside the specified range of soil conditions can be expected to yield less than satisfactory performance.

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