

Hydrolysed proteins

DOCUMENT M-CA, Section 3

FURTHER INFORMATION ON THE ACTIVE SUBSTANCE

Version history¹

A) BIO

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¹ It is suggested that applicants adopt a similar approach to showing revisions and version history as outlined in SANCO/10180/2013 Chapter 4 How to revise an Assessment Report

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¹ It is suggested that applicants adopt a similar approach to showing revisions and version history as outlined in SANCO/10180/2013 Chapter 4 How to revise an Assessment Report

C) SIC

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CA 3 FURTHER INFORMATION ON THE ACTIVE SUBSTANCE (BIO)

CA 3.1 Use of the Active Substance

Hydrolysed proteins were and are still being very used in agriculture to prepare attractant baits, because the efficiency of them is broadly tested (Work Group of olive trees, 1983).

CA 3.2 Function

Hydrolysed proteins are obtained by hydrolysis of animal tissues. When these proteins are applied on crops, insects feel attracted by them. When used in spray with an insecticide they kill the insects once they have eaten the product. When used in mass trapping they will attract insects to the trap, retaining them until they die.

CA 3.3 Effects on Harmful Organisms

This substance is a pest attractant, because the degradation compounds of the hydrolysed proteins, due to their organoleptic and nutritional characteristics, behave as an attract trophic. They are also food for insects, in such a way that the insecticide applied to the mixing on crops attracts them and then, the product executes its adverse effect, causing the death of insects. In the case of mass trapping, insects are attracted to a physical trap from which they cannot escape.

CA 3.4 Field of Use Envisaged

Hydrolysed proteins are pointed to an agricultural use as a bait or trophic attractant of diptera (flies and mosquitoes) in crops of deciduous fruit trees, citrus and olive trees.

CA 3.5 Harmful Organisms Controlled and Crops or Products Protected or Treated

Hydrolysed proteins are an active substance used in the formulation of attractant bait to be mixed as an additive with authorised insecticides or in traps for mass trapping in order to control adult *Ceratitis capitata*, *Bactrocera (Dacus) oleae* and other diptera, such as *Rhagoletis cerasi* and *Rhagoletis complete* that can appear in citrus, deciduous fruit trees and olive tree crops, which cause fruit damage by egg laying.

CA 3.6 Mode of Action

Hydrolysed proteins are insect attractants applied to trees. When applied in mixtures with insecticides, insects are attracted by the protein and are eventually killed by the insecticide effect. In case of mass trapping, insects are attracted to a trap which they cannot escape. The hydrolysed

proteins mixtures are assumed to be related in composition to the “honeydew” extruded by aphids which, in nature, can apparently supply a suitable diet for both the adult and larva of certain insects.

The plant or animal hydrolysed proteins are natural compounds of degradation from the hydrolysis of living organisms’ tissues. Proteins are the most abundant organic molecules in cells. They constitute the 50% of the dry weight of cells or even more. They can be found in every single cell, since they are fundamental in all aspects of the cell structure and function (Lehninger, 1983).

CA 3.7 Information on Occurrence or Possible Occurrence of the Development of Resistance and Appropriate Management Strategies

Hydrolysed proteins are natural compounds of degradation from the hydrolysis of living organism’s tissues so that it is not possible to occur the development of resistance.

CA 3.8 Methods and Precautions Concerning Handling, Storage, Transport or Fire

Hydrolysed proteins come from the enzymatic hydrolysis of animal tissues. Therefore, they do not cause any danger to human beings and mammals in general. Proteins appear in all biochemical processes that take place in every live cell being, this way, essential compounds for human life. Furthermore, hydrolysed proteins are authorized by the EU in order to be used as attractant in the elaboration of baits in combination with appropriate insecticides of the Organic Farming (Regulation EC No 889/2008 annex 2). This shows the innocuousness of these compounds, since the practice of this kind of agriculture is very demanding with the use of products that can be harmful to human beings.

Handling: As it is usual in the use and manipulation of this type of products, the staff in charge of manipulating the product should take the proper precautions during transport, load and unload and manipulation of the product in order to avoid that the product comes into contact with skin, eyes or other parts of the body.

Storage: The original closed and sealed containers should be stored in a cool dry place, far from a heat source, and at room temperature.

Good industrial practice in housekeeping and personal hygiene should be followed. Avoid contact with eyes skin and clothing. When using do not eat, drink or smoke. Wash hands thoroughly after handling. Store only in original container.

Transport: Follow the precautions indicated in the Handling and Storage section of the SDS. Comply with any local regulations. Check that containers are sound and that labels are undamaged before dispatch.

Fire Fighting Measures: Use extinguishing media appropriate for surrounding fire. Owing to the nature of this active substance there is no production of dangerous compounds in the event of fire or combustion.

Extinguishing media:

Small fire: use dry chemical powder.

Large fire: use water spray, fog or foam. Do not use water jet.

CA 3.9 Procedures for Destruction or Decontamination

Procedures for destruction: Controlled incineration.

Procedures for decontamination: Prevent entry into drains, waters or soil. Use adsorbent material to collect spillage (*e.g.* sawdust, peat, chemical binder). Place contaminated adsorbent in closable containers. Use a damp cloth to clean floors and other objects after removal of contaminated adsorbent. Also place used cleaning materials into closable receptacles.

Spe3: To protect aquatic life, maintain an untreated safety strip of 5 metres alongside open water masses.

SP1: Do not contaminate water with the product or containers (Do not clean the product application equipment near open water / Avoid pollution via water outlet systems of farms or paths).

CA 3.10 Emergency Measures in Case of an Accident

Do not leave the affected person alone under any circumstances. In case of accident or illness, call the National Poison Centre telephone: 91-562.04.20. In both cases, have the container or the label at hand.

CA 3 FURTHER INFORMATION ON THE ACTIVE SUBSTANCE (PHY)

CA 3.1 Use of the Active Substance

Agricultural use.

Used in suppression control operations by spot bait sprays.

CA 3.2 Function

Attractant

CA 3.3 Effects on Harmful Organisms

Food lure: Physiological.

Affecting the instinctive behavioural activity of olive-fly (*Bactrocera (dacus) oleae*) in seeking food. This is achieved by the volatile degradation products of the preparation which attract the insect to a toxicant.

CA 3.4 Field of Use Envisaged

Field - Control and suppression olive-fly by spot bait sprays in combination with a toxicant.

CA 3.5 Harmful Organisms Controlled and Crops or Products Protected or Treated

Bactrocera (dacus) oleae on olive crop.

Achieved prevention of oviposition on fruits.

Hydrolysed proteins attractants since 1974 in Greece have a definitive place in annual collective programs of bait sprays organized by the Greek Ministry to protect the ripening olive fruit against gravid fertilised females of *Bactrocera oleae* and prevent extensive damage to crops all over the country.

CA 3.6 Mode of Action

Behavioural manipulation of olive-fly as Hydrolysed proteins release volatile stimuli like the naturally occurring foods and attract the insects.

CA 3.7 Information on Occurrence or Possible Occurrence of the Development of Resistance and Appropriate Management Strategies

Not applicable

CA 3.8 Methods and Precautions Concerning Handling, Storage, Transport or Fire

Hazard identification: On the basis of available information the product is not expected to produce any significant adverse health or environmental effects when the recommended use instructions are followed.

Handling: Good industrial practice in housekeeping and personal hygiene should be followed. When using do not eat, drink or smoke. Wash hands thoroughly after handling or contact. Thoroughly clean equipment after use. The product should not be dumped, spilled, rinsed or washed into sewers or public waterways.

Warehouse storage

Store in a dry place.

User level storage

Keep out of the reach of children. Keep away from food, drink and animal feeding stuffs. Keep only in original container. Do not store above 40°C for prolonged time. It is stable for more than 2 years.

Transport

Not classified as hazardous under transport regulations.

Fire

Is not flammable. Urea decomposition at high temperatures (>133oC) emits toxic fumes of nitrogen oxide, ammonia and isocyanic acid.

CA 3.9 Procedures for Destruction or Decontamination

Controlled incineration

Package product wastes. Close and label waste receptacles. Dispose of them at a suitable waste incineration plant in accordance with the official regulations. Where large quantities are concerned, consult the supplier.

In case of no controlled incineration wash or dilute with large quantities of water, while avoiding streaming into water-courses.

CA 3.10 Emergency Measures in Case of an Accident

Containment of spillages

In case of a spillage first we have to stop it and after wash with water.

Decontamination of areas, vehicles and buildings

Wash with water

Disposal of damaged packaging, adsorbents and other materials

Damaged packaging emptying into suitable containers and then rinsed thoroughly with water and deposited at a collection point for recycling or energy recovery.

Protection of emergency workers and bystanders

Personal precautions: Avoid contact with eyes.

Methods for cleaning up: Wash with water.

Incombustible.

Suitable extinguish media: Water

Fire/explosion fumes should not be inhaled.

Special protective equipment: In case of fire wear a self-contained breathing apparatus.

First aid measures

If swallowed, seek medical advice immediately and show this container or label.

FURTHER INFORMATION ON THE ACTIVE SUBSTANCE (SIC)

CA 3.1 Use of the Active Substance

- a) by foliar spray in mixture with an authorized insecticide, treating only some trees or some branch of each tree
- b) as a bait into suitable container for the trapping of the flies.

As a general indication, 2-4 applications must be done every 20-30 days, when the adult diptera start to appear. The control of harmful organisms, the number and timing of applications depend on the authorized insecticide distributed in mixture.

CA 3.2 Function

Insect attractant and insect bait

CA 3.3 Effects on Harmful Organisms

Contact and residual action.

Attracting power. The control of harmful organisms depends on the mode of action of the insecticide used in mixture.

Translocation in plants: Amino acids and short chain peptides are rapidly uptaken and translocated into plant tissues. The same substances are used as nutrients for plants.

CA 3.4 Field of Use Envisaged

- a) by foliar spray in mixture with an authorized insecticide, treating only some trees or some branch of each tree
- b) as a bait into suitable container for the trapping of the flies.

CA 3.5 Harmful Organisms Controlled and Crops or Products Protected or Treated

Mediterranean Fruit Fly (*Ceratitis capitata*), Cherry Fly (*Rhagoletis cerasi*), Olive Fly (*Bactrocera oleae*) and other flies like the Walnut Fly (*Rhagoletis completa*).

The crops protected or treated are: Cherry, Citrus, Olive, Khaki, Fig, Walnut, Pomaceae, Drupaceae (Stone fruits), Actinidia and Blueberries.

CA 3.6 Mode of Action

Attracting power. The control of harmful organisms depends on the mode of action of the insecticide used in mixture.

CA 3.7 Information on Occurrence or Possible Occurrence of the Development of Resistance and Appropriate Management Strategies

Not applicable

CA 3.8 Methods and Precautions Concerning Handling, Storage, Transport or Fire

As reported in Safety data sheet for hydrolysed proteins.

Handling and storage:

Good industrial practice in housekeeping and personal hygiene should be followed. Avoid contact with eyes skin and clothing. When using do not eat, drink or smoke. Wash hands thoroughly after handling. Store only in original container.

Obey to reasonable safety precautions and practises, according to good hygiene and manufacturing procedures..

Store the product in clean and suitable sealed containers in suitable places in order to maintain unchanged the original characteristics of the product.

The product does not contain preservatives and it is stable if stored undiluted in closed and clean containers and handled in the suggested conditions. Avoid the product storage in open containers and stock the product avoiding temperature $> 30^{\circ}\text{C}$ and $< 4^{\circ}\text{C}$ for the difficult handling due to the increased viscosity. A slight sediment may be present without prejudicing the quality of the product.

Transport:

The product is not subjected to specific indications.

Fire:

The product is not inflammable.

Appropriate extinguishing media:

Take into account the materials present in its vicinity. In the case of fire due to nearby materials, water, foam, dry chemicals or carbon dioxide can be used. Evaluate the compatibility with any other substance present where the fire is located. Use the adequate extinguish media on the basis of the specific situation.

Unsuitable extinguishing media: None known

Special hazards arising from the mixture:

In case of fire due to nearby materials, the product could release toxic gases(sulfur dioxide, nitrogen oxides, carbon monoxide, carbon dioxide) and pungent and stifling smokes.

Advice for firefightersGeneral information

Cool the containers with water. Coordinate extinguishing measures taking into account local and environment circumstances.

Equipment

Wear equipment provided with fire-fighting protection devices. Use respiratory protection equipment that supplies air from an independent source (auto-respirator EN 137), suitable protective gloves(EN 659), suitable protective clothing(EN 469) and fire-fighter boots(HO A29 or A30).

Other information

Avoid flushing the water used for the extinguishing in surface-water/drains. If this occurs, notify to competent authorities. Contain and collect water used for fire extinguishing and fire residues in accordance with legislation in force.

CA 3.9 Procedures for Destruction or Decontamination

Hydrolysed proteins are completely biodegradable. The same product is also used as fertiliser and doesn't cause negative alterations of the environment, when utilised with the appropriate precaution.

No particular procedure is provided for.

CA 3.10 Emergency Measures in Case of an Accident

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Obey reasonable safety precautions using gloves, goggles and suitable protective clothing and practice in accordance with the rules of hygiene and good working practice taking precautionary measures against the formation of inhalable aerosol/dust. Provide adequate ventilation.

For emergency responders

Obey reasonable safety precautions using gloves, goggles and suitable protective clothing and practice in accordance with the rules of hygiene and good working practice taking precautionary measures against the formation of inhalable aerosol/dust. Provide adequate ventilation.

Environment precautionary measures

Collect the product for the re-use how much is possible and limit the pouring area; do not introduce the product and waste into sewage and surface water but into sewage facilities that feed a biological waste water treatment plant. Avoid to pollute other growings, foods and beverages.

Methods and material for containment and cleaning up

Recovery: Contain spillage, pick up with absorbent non-combustible material (eg sand, earth, diatomaceous earth, vermiculite) and transfer to suitable container for disposal in accordance with local and national regulations. Decontamination/cleaning: Wash the affected area at the spill with water, collect the water used in suitable containers and dispose of in accordance with the provisions of the law. Disposal of the collected materials: Dispose of in accordance with local and national legislation in force. Other information: The product and the materials containing them, may cause slippery surfaces.