

# **Renewal Assessment Report**

**beta-cyfluthrin**

**Montur Forte FS 230**

**Volume 3 – B.3 Data on application and efficacy**

**07 March 2017**

**Rapporteur Member State: Germany**

**Co-Rapporteur Member State: Hungary**

beta-cyfluthrin (Montur Forte FS 230)  
Volume 3 – B.3 Data on application and efficacy

---

### **Version history**

<b>When</b>	<b>What</b>

## Table of contents

<b>B.3</b>	<b>Data on application and Efficacy .....</b>	<b>4</b>
B.3.1	Field of use envisaged.....	4
B.3.2	Effects on harmful organisms .....	4
B.3.3	Details of intended use (see Volume 1) .....	5
B.3.4	Application rate and concentration of the active substance.....	7
B.3.5	Method of application .....	7
B.3.6	Number and timing of applications and duration of protection.....	7
B.3.7	Necessary waiting periods or other precautions to avoid phytotoxic effects on succeeding crops .....	7
B.3.8	Proposed instructions for use .....	7
B.3.9	Effectiveness .....	7
B.3.10	Information on the development of resistance.....	7
B.3.11	Adverse effects on treated crops .....	8
B.3.12	Observations on other undesirable or unintended side-effects .....	8
B.3.13	References relied on.....	9

## **B.3 Data on application and Efficacy**

### **B.3.1 Field of use envisaged**

The product Montur Forte FS 230 is used as an insecticide for seed treatment in beet. The active substances beta-cyfluthrin and imidacloprid contained in the product act principally as protectant insecticides. The beet seedlings are protected against soil pests during the sensitive growth stages and against foliar pests until the first insecticide foliar spray is recommended.

### **B.3.2 Effects on harmful organisms**

Beta-cyfluthrin is a widely-known non-systemic insecticide which works in the close proximity of the seed in the soil when introduced onto the seed. It is known as a sodium channel modulator on the nervous system and is a non-systemic insecticide that is absorbed through the skin and stomach and acts with rapid knockdown and long residual activity. It has a low vapour pressure and water solubility, but is adsorbed locally to the soil around the treated seed and provides protection in the close proximity of the seed against soil insects such as wireworms.

The other active substance in the product, imidacloprid, is systemic and highly effective in the control of many pests. It specifically controls a number of coleopteran pests in sugar beet such as elaterid larvae (wireworms), weevils like the beet root weevil *Bothynoderes punctiventris*, beet flea beetles of the genus *Chaetocnema* and the pygmy mangold beetle *Atomaria linearis*. Other important pests targeted in sugar beet include aphid pests such as *Aphis fabae* and *Myzus persicae*, thrips, dipterans as the beet leaf miners of the genus *Pegomyia*, and myriapodes like e.g. *Blaniulus guttulatus* or *Scutigerella immaculata*. Neonicotinoid insecticides such as imidacloprid are classified by IRAC in mode of action class 4A, nicotinic acetylcholine receptor (nAChR) agonists. Depending on the dose imidacloprid may be used to control soil pests such as wireworms (*Agriotes* spp.), beetles living on the ground and flying pests such as aphids, flies and beetles in many crops. Transported to the upper regions of plants, imidacloprid can protect the plant against leaf pests as well.

It can also protect against viral infections transferred by insect pests like aphids.

Products containing imidacloprid and beta-cyfluthrin are used in agriculture as seed treatment in a wide range of crops, targeting a wide range of pests. In beet this would be typically pests such as *Chaetocnema concina* and *C. tibialis*, *Atomaria linearis*, *Pegomyia betae/hyoscyami*, *Aphis fabae*, and non plant specific soil pests like wireworms.

beta-cyfluthrin (Montur Forte FS 230)  
Volume 3 – B.3 Data on application and efficacy

### B.3.3 Details of intended use (see Volume 1)

**Table B.3.3-1: GAP table - Summary of representative uses evaluated, for which all risk assessments needed to be completed**

#### List of representative uses evaluated – Montur Forte FS 230

GAP rev., date: **XX**

PPP (product name/code) **Montur Forte FS 230**  
active substance 1 **beta-cyfluthrin**  
active substance 2 **imidacloprid**

Formulation type: **FS**  
Conc. of as 1: **80 g/kg**  
Conc. of as 2: **150 g/kg**

safener **n.a.**  
synergist **n.a.**

Conc. of safener: **n.a.**  
Conc. of synergist: **n.a.**

Applicant: **Bayer CropSciences**  
Zone(s): **EU**

professional use ☒  
non professional use ☐

Verified by MS: **J**

1	2	3	4	5	6	7	8	10	11	12	13	14
Use-No.	Member state(s)	Crop and/or situation  (crop destination / purpose of crop)	F G or I	Pests or Group of pests controlled  (additionally: developmental stages of the pest or pest group)	Application			Application rate			PHI (days)	Remarks:
					Method / Kind	Timing / Growth stage of crop & season	Max. number (min. interval between applications) a) per use b) per crop/season	kg, L product / ha a) max. rate per appl. b) max. total rate per crop/season	g as/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max		
1	EU	Beet	F	Chaetocnema spp Atomaria linearis Agriotes ssp. Pegomyia hyoscyami, Pegomyia betae Scutigerella immaculate Blaniulus guttulatus Aphids Thrips	Seed treatment	00	1	n.a.	IMD: 0.0195 CYB: 0.0104	n.a.	n.a.	Sowing rate: 1.30 u/ha 1 u = 100 000 seeds Dose rate: 0.10 L product/u 0.13 L product /ha

beta-cyfluthrin (Montur Forte FS 230)

Volume 3 – B.3 Data on application and efficacy

---

**Remarks:**

- (1) Numeration of uses in accordance with the application/as verified by MS
- (2) Member State(s) or zone for which use is applied for
- (3) For crops, the EU and Codex classifications (both) should be used; where relevant, the use situation should be described (e.g. fumigation of a structure)
- (4) Outdoor or field use (F), glasshouse application (G) or indoor application (I)
- (5) e.g. biting and suckling insects, soil born insects, foliar fungi, weeds, developmental stages
- (6) Method, e.g. high volume spraying, low volume spraying, spreading, dusting, drench  
Kind, e.g. overall, broadcast, aerial spraying, row, individual plant, between the plants - type of equipment used must be indicated
- (7) Growth stage of treatment(s) (BBCH Monograph, Growth Stages of Plants, 1997, Blackwell, ISBN 3-8263-3152-4), including where relevant, information on season at time of application
- (8) The maximum number of applications possible under practical conditions of use for each single application and per year (permanent crops) or crop (annual crops) must be provided
- (8) Min. interval between applications (days) were relevant
- (10) The application rate of the product a) max. rate per appl. and b) max. total rate per crop/season must be given in metric units (e.g. kg or L product / ha)
- (11) The application rate of the active substance a) max. rate per appl. and b) max. total rate per crop/season must be given in metric units (e.g. g or kg / ha)
- (12) The range (min/max) of water volume under practical conditions of use must be given (L/ha)
- (13) PHI - minimum pre-harvest interval
- (14) Remarks may include: Extent of use/economic importance/restrictions/minor use etc.

#### **B.3.4 Application rate and concentration of the active substance**

Montur Forte FS 230 is a product containing 80 g beta-cyfluthrin + 150 g imidacloprid/L formulated product. The maximum targeted dose rate for such product is 100 mL/unit of seeds (1 unit = 100.000 seeds), equivalent to 8 g beta-cyfluthrin + 15 g imidacloprid/unit of seeds. Considering the maximum sowing density of 1.3 unit of seeds/ha, the maximum amount of each active ingredient is 10.4 g beta-cyfluthrin + 19.5 g imidacloprid/ha.

#### **B.3.5 Method of application**

The method of application is as a seed treatment. The application technology and conditions of use of the plant protection product may vary from one member state to another, depending on the local environmental, climatic and agricultural conditions.

#### **B.3.6 Number and timing of applications and duration of protection**

As the product is a seed treatment, only one application of this product in the crop is possible. Protection is only to be expected in seedlings and young plants. From the experience gained by years of use of the product in practice the duration of protection is known to be sufficient.

#### **B.3.7 Necessary waiting periods or other precautions to avoid phytotoxic effects on succeeding crops**

No important phytotoxic effects neither on treated nor on succeeding or neighbouring crops have to be expected at the dose rates applied for. Waiting periods or other precautions to avoid phytotoxic effects on succeeding crops are therefore not necessary to be established. There are no limitations on the choice of succeeding crops after the full growing period or after a shortened growing period due to a crop failure.

#### **B.3.8 Proposed instructions for use**

For the use instructions it should be referred to the labels given for existing products.

#### **B.3.9 Effectiveness**

The beet seedlings are protected against soil pests during the sensitive growth stages and against foliar pests until the first insecticide foliar spray is recommended. Results of efficacy tests carried out for the registration in different European countries and several years of farmers use of products containing the active ingredients beta-cyfluthrin and imidacloprid gave proof of sufficient efficacy on relevant pest species in beet.

#### **B.3.10 Information on the development of resistance**

Montur Forte FS 230 contains two chemically different insecticides (a pyrethroid and a neonicotinoid) which act on different molecular target-sites. Between these insecticide groups no cross-resistance is

beta-cyfluthrin (Montur Forte FS 230)  
Volume 3 – B.3 Data on application and efficacy

---

known globally.

No resistance against beta-cyfluthrin is known from non plant-specific soil pests like wireworms. Additionally no resistance against pyrethroids including beta-cyfluthrin is not known from most beet pest insects such as *Chaetocnema concina* and *C. tibialis*, *Atomaria linearis*, *Pegomyia betae/hyoscyami*, or *Aphis fabae*.

Only the peach-potato aphid or green peach aphid *Myzus persicae* which does also occur on beet, has developed resistance against pyrethroids (KDR and super-KDR). So far no pyrethroid resistance of *Myzus persicae* has been reported in connection with occurrence on sugar beet. However both *Myzus persicae* and *Aphis fabae fabae* (and any other aphid species, which can be considered to show a higher risk) are not targeted by the beta-cyfluthrin in Montur Forte FS 230, since no pyrethroid is systemic. Therefore the pyrethroid beta-cyfluthrin remains locally in the soil around the seed and on the seed. It does not come in contact with the aphids.

Imidacloprid, the second active ingredient of Montur Forte FS230 is from the neonicotinoid class, acting agonistically on insect nicotinic acetylcholine receptors located in the central nervous system. Imidacloprid and all other neonicotinoids (IRAC mode of action class 4A) are all supposed to act at the same binding site.

Some insect pests such as whiteflies *Bemisia tabaci* and *Trialeurodes vaporariorum*, the brown planthopper *Nilaparvata lugens*, the green peach aphid *Myzus persicae*, the colorado potato beetle *Leptinotarsa decemlineata* and a few others have developed resistance to neonicotinoids in parts of the world.

There are no reports on neonicotinoid resistance mechanisms in other sucking, chewing and soil pests controlled by imidacloprid in Montur Forte FS 230 used as seed treatment in beet, including thrips and major aphid species occurring in sugar beet such as *Aphis fabae*. The only exception is the recently observed and so far locally developed resistance to neonicotinoid sprays in *M. persicae* in peaches in southern France, northern Spain and northern Italy. This resistance is based on a target-site mutation in the nicotinic acetylcholine receptor  $\beta$ -subunit. Up to now no reports of resistance are known from any secondary host yet, including sugar beet and vegetables.

### **B.3.11 Adverse effects on treated crops**

No important phytotoxic effects on treated crops have been observed in the long period of commercial use of beta-cyfluthrin and imidacloprid containing product in several countries with a wide range of different crops. No adverse effects on quality or yield of treated crops have been observed.

### **B.3.12 Observations on other undesirable or unintended side-effects**

No undesirable or unintended side-effects of the product Montur Forte FS 230 have been described. Experience from the long commercial use in several countries with a wide range of crops showed no adverse effects on quality or yield of adjacent crops or succeeding crops, or plants or plant products used for propagation.



beta-cyfluthrin (Montur Forte FS 230)  
Volume 3 – B.3 Data on application and efficacy

---

### B.3.13 References relied on

Annex point / reference number	Author(s)	Year	Title Source <i>(where different from company)</i> Company name, Report No., Date, GLP status <i>(where relevant)</i> , published or not	Vertebrate study Y/N	Data protection claimed Y/N	Justification if data protection is claimed	Owner
KCP 3.2 /01	Nauen, R.	2011	Statement - Information on the occurrence or possible occurrence of the development of resistance of plant protection product Montur Forte (for submission in Europe) Bayer CropScience Bayer CropScience, Report No.: M-476581-01-1, Edition Number: <a href="#">M-476581-01-1</a> Date: 2011-12-02 GLP/GEP: n.a., unpublished	N	N		Bayer Crop- Science