

Maisons-Alfort, 15 June 2011

THE DIRECTOR GENERAL

OPINION

of the French Agency for Food, Environmental and Occupational Health & Safety on an application for marketing authorisation for the product ALLIANCE WG, containing metsulfuron-methyl and diflufenican, from the company NUFARM SAS

One of the missions of the French Agency for Food, Environmental and Occupational Health & Safety (which adopted the missions of AFSSA and AFSSET on 1 July 2010) is to undertake expert assessments of applications for plant protection products.

The Opinions issued by the Agency include:

- *An assessment of the risks that the use of these products can pose to humans, animals or the environment;*
 - *An assessment of their efficacy, the absence of any unacceptable effects on plants and plant products and other potential benefits;*
 - *A summary of these assessments together with recommendations regarding their conditions of use in particular.*
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1. PRESENTATION OF THE APPLICATION

The Agency acknowledged receipt of an application for marketing authorisation from the company NUFARM SAS for the product ALLIANCE WG for which, in accordance with Article L.253-4 of the French Rural Code, ANSES's Opinion is required.

This Opinion deals with ALLIANCE WG, containing metsulfuron-methyl and diflufenican, which is intended for weed control in hard winter wheat¹, soft winter wheat², winter barley, winter rye and triticale.

It is based on an examination of the application dossier submitted for this product in accordance with the requirements of Directive 91/414/EEC³.

2. SUMMARY OF THE ASSESSMENT

The data taken into account were those considered valid either by the European Union or by ANSES. This Opinion summarises the essential scientific points that led to the recommendations issued by the Agency. Its purpose is not to exhaustively review the assessment work undertaken by the Agency.

¹ Synonym: Durum wheat (ref. <http://eppt.eppo.org/index.php>)

² Synonym: bread wheat

³ Council Directive 91/414/EEC of 15 July 1991 transposed into French law by the Order of 6 September 1994 implementing Decree 94/359 of 5 May 1994 regarding the control of plant protection products.

The conclusions on risk acceptability in this Opinion refer to the criteria provided in Annex VI of Directive 91/414/EEC. They use the terms 'acceptable' and 'unacceptable' in reference to these criteria.

Based on an assessment of the application undertaken by the Regulated Products Department with the agreement of a group of experts from the Expert Committee on Plant protection products: chemical substances and formulations, the French Agency for Food, Environmental and Occupational Health & Safety is issuing the following Opinion.

CONSIDERING THE PRODUCT'S IDENTITY

ALLIANCE WG is an herbicide containing 60 g metsulfuron-methyl/kg (minimum purity 96%) and 600 g diflufenican/kg (minimum purity 97%) in the form of water-dispersible granules (WG). The requested uses (crops and annual application rates) are provided in Annex 1.

Metsulfuron-methyl⁴ and diflufenican⁵ are active substances (a.s.s) included in Annex I of Directive 91/414/EEC.

CONSIDERING THE PHYSICO-CHEMICAL PROPERTIES AND ANALYTICAL METHODS

● **Specifications**

The specifications for the active substances in ALLIANCE WG allow these a.s.s to be characterised and are compliant with the regulatory requirements.

● **Physico-chemical properties**

The physical and chemical properties of ALLIANCE WG have been described and, based on the available data, it can be concluded that the product does not have explosive or oxidising properties. It is neither highly flammable nor self-igniting at ambient temperature. The pH of an aqueous dilution of the product at a concentration of 1% is 11.1 at 21 °C.

Studies show that the foam that forms during dilution to the in-use concentrations remains within the acceptable limits. The results of suspensibility and spontaneity of dispersion tests show that the product remains homogeneous and stable during application in the conditions tested. The product's granules are wettable and contain very little dust.

Storage stability studies (two weeks at 54 °C and two years at ambient temperature) indicate that the product is stable in its packaging (high-density polyethylene (HDPE)/polyamide (PA)) in these conditions. However, given that tests on the suspensibility and persistence of foam were not undertaken during the study on stability during two years of storage at ambient temperature, these data should be provided post-authorisation. Furthermore, the result of the test on wear resistance was lower than 98% after two years of storage. Therefore, in the post-authorisation period it will be necessary to provide a dust content test undertaken after the test on wear resistance after two years of storage.

The product's technical characteristics confirm its safety of use in the recommended conditions of use (concentration ranging from 0.02 to 0.1% m/v). Studies have shown that the packaging (HDPE/PA) is compatible with the product.

● **Analytical methods**

The methods used to determine the active substances and impurities in each technical substance, and the method used to analyse active substances in the formulation are compliant with the regulatory requirements. Since the product does not contain any impurities deemed to be relevant, no analytical methods are necessary to determine impurities in the formulation.

⁴ Commission Directive 2000/49/EC of 26 July 2000 including an active substance (metsulfuron-methyl) in Annex I to Council Directive 91/414/EEC concerning the placing of plant protection products on the market

⁵ Commission Directive 2008/66/EC of 1 July 2008 including active substances bifenox, diflufenican, fenoxaprop-P, fenpropidin and quinoclamine in Annex I to Council Directive 91/414/EEC concerning the placing of plant protection products on the market

The analytical methods submitted at European level and in this application for determining residues of active substances in substrates (plants and products of animal origin) and in various environments (soil, water and air) are compliant with the regulatory requirements. Since the active substances are not classified as toxic (T) or very toxic (T+), no analytical methods in biological fluids are necessary.

The Limits of Quantification (LOQ) for the active substances and their respective metabolites in various media are as follows:

Active substance	Matrix	Analysed compound	LOQ*
Diflufenican	Plants (cereals)	Diflufenican	0.01 mg/kg (grain)
	Foodstuffs of animal origin	Diflufenican	0.01 mg/kg (milk) 0.02 mg/kg (egg, meat, fat, liver)
	Soil	Diflufenican, AE B107137 and AE 0542291	0.002 mg/kg
	Mineral water Drinking water Surface water	Diflufenican	0.05 µg/L (mineral water and drinking water) 0.2 µg/L (river water)
	Air	Diflufenican	0.4 µg/m ³
Metsulfuron-methyl	Plants (cereals)	Metsulfuron-methyl	0.02 mg/kg (grain, straw, fodder)**
	Foodstuffs of animal origin	-	-
	Soil	Metsulfuron-methyl	0.1 µg/kg **
	Groundwater Drinking water Surface water	Metsulfuron-methyl	0.01 µg/L **
	Air	Metsulfuron-methyl	0.02 mg/m ³ **

*The reported LOQ is the lowest if there are several validated methods for the same matrix

** The reported LOQ has been taken from the product's application dossier

CONSIDERING THE TOXICOLOGICAL PROPERTIES

- **Diflufenican**

The Acceptable Daily Intake⁶ (ADI) for diflufenican, as set when it was included in Annex I of Directive 91/414/EEC, is **0.2 mg/kg bw⁷/day**. It was determined by applying a safety factor of 100 to the No Observed Adverse Effect Level obtained in a two-year oral chronic toxicity study in rats.

It was not considered necessary to establish an Acute Reference Dose⁸ (ARfD) for diflufenican when it was included in Annex I of Directive 91/414/EEC.

- **Metsulfuron-methyl**

The ADI for metsulfuron-methyl, as set when it was included in Annex I of Directive 91/414/EEC, is **0.22 mg/kg bw/day**. It was determined by applying a safety factor of 100 to the No Observed Adverse Effect Level obtained in a two-year oral chronic toxicity study in rats.

It was not considered necessary to establish an ARfD for metsulfuron-methyl when it was included in Annex I of Directive 91/414/EEC.

⁶ The Acceptable Daily Intake (ADI) of a chemical is an estimate of the amount of active substance found in food or drinking water that can be ingested daily over an individual's lifetime, without appreciable health risk for the consumer, on the basis of all the known facts at the time of the evaluation. It is expressed in milligrams of chemical per kilogram of body weight (WHO, 1997).

⁷ bw: body weight

⁸ The Acute Reference Dose (ARfD) of a chemical is an estimate of the amount of a substance in food or drinking water, expressed according to body weight, that can be ingested over a short period, generally over the course of one meal or one day, without appreciable health risk for the consumer, on the basis of all the known facts at the time of the evaluation. It is expressed in milligrams of chemical per kilogram of body weight (WHO, 1997).

The studies undertaken with the ALLIANCE WG formulation give the following results:

- Oral LD₅₀⁹ in rats greater than 2000 mg/kg;
- Dermal LD₅₀ in rats greater than 2000 mg/kg;
- Irritating to eyes
- Irritating to skin
- Non-sensitising through skin contact in mice.

The classification of the product as determined from these experimental results, the classification of the active substances and their formulants, and their levels in the product, appear at the end of this Opinion.

CONSIDERING THE DATA ON EXPOSURE IN OPERATORS, BYSTANDERS AND WORKERS

● **Diflufenican**

The acceptable level of exposure to diflufenican for operators (AOEL¹⁰), as set when it was included in Annex I of Directive 91/414/EEC, is **0.11 mg/kg bw/day**. It was determined by applying a safety factor of 100 to the No Observed Adverse Effect Level obtained in a 90-day toxicity study in rats, corrected for 58% oral absorption.

The values established for the percutaneous absorption of diflufenican in the ALLIANCE WG product are 3% for the undiluted formulation and 17% for the diluted formulation. They were determined based on an *in vitro* study undertaken in rats with a suspension concentrate (SC) formulation.

● **Metsulfuron-methyl**

The AOEL for metsulfuron-methyl, as set when it was included in Annex I of Directive 91/414/EEC, is **0.7 mg/kg bw/day**. It was determined by applying a safety factor of 100 to the No Observed Adverse Effect Level obtained in a 90-day toxicity study in rats.

The value established for the percutaneous absorption of metsulfuron-methyl in the ALLIANCE WG product is 100%, by default, for the undiluted and diluted product.

Estimation of operator exposure

Systemic exposure of operators was estimated using the BBA model (German Operator Exposure Model) considering the following conditions of application for the ALLIANCE WG product:

- application rate: 0.1 kg/ha, or 60 g diflufenican/ha and 6 g metsulfuron-methyl/ha;
- average surface area treated per day: 20 ha;
- equipment used: tractor with cabin, boom sprayer (hydraulic nozzles).
- type of crop: cereals.

Exposure of operators not wearing personal protective equipment is 6.5% of the AOEL for diflufenican and 1% of the AOEL for metsulfuron-methyl.

In the light of these results and the product's toxicological properties, the health risk for applicators is considered to be acceptable, without protective equipment, during all of the product's mixing/loading and application phases.

Estimation of bystander exposure

Exposure for bystanders near (within 7 m of) the spraying zones, based on EUROPOEM II data¹¹, is estimated to be 0.1% of the AOEL for diflufenican and less than 0.1% of the AOEL for metsulfuron-methyl for the requested uses. The health risk for bystanders during application of the product is considered to be acceptable.

⁹ LD₅₀: the lethal dose 50 is a statistical value expressing a single dose of a substance/formulation that, when administered orally, kills 50% of the treated animals.

¹⁰ AOEL: the Acceptable Operator Exposure Level is the maximum amount of an active substance to which an operator may be exposed daily, without any health risk.

¹¹ EUROPOEM II - Bystander Working Group Report.

Estimation of worker exposure

ALLIANCE WG is intended for weed control in cereals at an early development stage that does not require the intervention of workers after treatment. It is therefore considered unnecessary to estimate worker exposure.

CONSIDERING THE DATA ON RESIDUES AND CONSUMER EXPOSURE

The data on residues that were provided in the framework of this request to assess ALLIANCE WG were the same as those that had been submitted when diflufenican and metsulfuron-methyl were included in Annex I of Directive 91/414/EEC.

Residue definition

- **Diflufenican**

Studies on metabolism in wheat and in animals, studies on plant product processing methods and studies on residues in succeeding crops were undertaken for the inclusion of diflufenican in Annex I of Directive 91/414/EEC. Based on these studies, the residue definition in plants and in products of animal origin is diflufenican for control and monitoring and for the assessment of consumer risk.

- **Metsulfuron-methyl**

Studies on metabolism in wheat, barley and animals and studies on residues in succeeding crops were undertaken for the inclusion of metsulfuron-methyl in Annex I of Directive 91/414/EEC. Based on these studies, the residue definition in plants is metsulfuron-methyl for control and monitoring and for the assessment of consumer risk. In products of animal origin, no residue definition has been established, based on the residue levels observed in plants.

Residue tests in plants

The proposed Good Agricultural Practices (GAPs) for cereals are:

- in the autumn, one application at the application rate of 45 g/ha for diflufenican and 4.5 g/ha for metsulfuron-methyl (BBCH 13 to 19);
- at the end of winter, one application at the rate of 60 g/ha for diflufenican and 6 g/ha for metsulfuron-methyl (BBCH 20 to 32).

- **Diflufenican**

Sixty-two residue tests in cereals were assessed for the inclusion of diflufenican in Annex I of Directive 91/414/EEC. A period of application limited to the BBCH 10-13 stage was set for cereals in the European assessment report. However, 17 residue tests in the North and 10 tests in the South of Europe were undertaken in wheat, barley and rye at a higher rate than the proposed rate for application at the BBCH 32 stage. The residue levels measured in the grain were lower than the Maximum Residue Level (MRL) of 0.05 mg/kg.

- **Metsulfuron-methyl**

Fifty residue tests in cereals were assessed for the inclusion of metsulfuron-methyl in Annex I of Directive 91/414/EEC. BBCH 39 was set as the maximum application stage for cereals in the European assessment report. The residue level obtained for cereal grains was lower than the MRL of 0.05* mg of metsulfuron-methyl/kg and BBCH 39 was established as the latest time of application for straw cereals at European level.

As a result, the critical Good Agricultural Practices (GAPs) proposed in France for barley, wheat, rye and triticale (60 g diflufenican/ha and 6 g metsulfuron-methyl/ha for application no later than the BBCH 32 stage) comply with the European MRL of 0.05 mg/kg and uses on these crops are therefore acceptable.

Residue tests in foodstuffs of animal origin

- ***Diflufenican***
Animal feeding studies are not necessary since metabolism studies indicate that no residues are expected in products of animal origin.
- ***Metsulfuron-methyl***
Animal feeding studies are not necessary since the calculation of the theoretical animal diet shows that the level of ingested active substance does not exceed 0.1 mg/kg dry matter/day. No definition of residue has been established for foodstuffs of animal origin based on the residue levels observed in plants.

Residue tests in succeeding and replacement crops

- ***Diflufenican***
No crop rotation studies were provided in the European assessment report, given that the results of the metabolism study in succeeding crops show very low residue concentrations.
- ***Metsulfuron-methyl***
Crop rotation studies were assessed in the European assessment report for metsulfuron-methyl. The results of tests performed in a greenhouse with ground application of 15 to 16 g a.s./ha show that no residues of metsulfuron-methyl or its degradation products are found at levels above 0.01 mg/kg in plants, with the exception of soya bean leaves where 0.013 mg hydroxymethyl-triazine/kg has been measured (at maturity, after a 120-day interval between treatment and planting).

Tests conducted in the field, with application of 30 g a.s./ha and a 12-month interval between treatment and sowing, show that total radioactivity in the various crops does not exceed 0.01 mg/kg, with the exception of rape seed where total radioactivity is 0.031 mg/kg. These residues are equally divided up between bound, water-soluble and organo-soluble residues. No data are available before a 120-day interval between treatment and sowing.

On the basis of these studies, it can be concluded that in cereals treated at a rate of 6 g a.s./ha, no residues will be detectable after 120 days. However, for cereals, if a crop has been prematurely interrupted, no new sowing or planting will be possible before 120 days, except for crops for which metsulfuron-methyl is authorised. These crops must not be re-treated with a product containing metsulfuron-methyl.

Residue tests in processed foodstuffs

Due to the low level of residues in foodstuffs likely to be consumed by humans, it is not necessary to undertake studies examining the effects of industrial processing and domestic preparation on the nature and level of residues.

Assessment of consumer risk

Levels of exposure in various groups of European consumers were estimated using the PRIMo Rev 2-0 model (Pesticide Residue Intake Model) developed by EFSA.

It was not considered necessary to define an ARfD for diflufenican or for metsulfuron-methyl. No acute risks to consumers are expected.

In the light of the data on residues that were assessed in the framework of this application, chronic risks to French and European consumers are considered to be acceptable.

Maximum Residue Levels

Refer to the MRLs defined in the European Union for uses on cereals.

Pre-harvest intervals

Application will occur no later than the BBCH 32 stage for straw cereals (second node no more than 2 cm above the first node).

CONSIDERING THE DATA ON FATE AND BEHAVIOUR IN THE ENVIRONMENT

In accordance with the requirements of Directive 91/414/EEC, data on fate and behaviour in the environment are provided for active substances and their degradation products. For diflufenican and metsulfuron-methyl, the following data were generated for the EU assessment of these active substances. They correspond to the reference values used in models to estimate expected exposure levels in various media (soil, groundwater and surface water) following the use of diflufenican and metsulfuron-methyl in the product and for each use.

Fate and behaviour in soil

Degradation pathways in soil

• **Diflufenican**

In controlled aerobic conditions, the main degradation pathway for diflufenican in soil is mineralisation [18.3 to 43.6% Applied Radioactivity (AR) in the form of CO₂ after 120 days depending on the labelling position]. Two major soil metabolites have been identified (AE B107137¹² and AE 0542291¹³) that can respectively reach 16.8% AR and 26.3% AR after 180 and 320 days of incubation.

In anaerobic conditions, diflufenican is broken down into metabolites AE B107137 (up to 48.52% AR after 272 days of incubation) and AE C522392¹⁴ (up to 10.65% AR after 90 days). The metabolite AE C522392 reaches 5.43% AR after 14 days of incubation. The fraction corresponding to unextractable residues and volatile compounds accounts for 29.42% AR after 90 days of incubation. Volatile compounds are detected in trace amounts up to 28 days after incubation (<2% AR).

Photolysis is not a major degradation pathway for diflufenican.

• **Metsulfuron-methyl**

In controlled aerobic conditions, the main degradation pathway for metsulfuron-methyl is the hydrolysis of the sulfonamide bond. Metsulfuron-methyl is also biodegradable. Mineralisation and the formation of unextractable residues respectively reach a maximum of 39.1% and 28.6% AR after 120 days of incubation.

A total of seven major metabolites have been identified: the sulfonamide (up to 17% AR in the laboratory), sulfonamide acid (up to 29% AR in the field), saccharin (up to 47% AR in the laboratory), the triazine amine (up to 33% AR in the laboratory), carbamoyl guanidine (up to 16% AR in the laboratory), O-desmethyl metsulfuron (up to 11% AR in the laboratory) and the metabolite IN-F5438 (up to 23.0% AR in the field). Degradation of metsulfuron-methyl in anaerobic conditions is slower but follows the same degradation pathway as in aerobic conditions. Metsulfuron-methyl is stable to photolysis.

Rates of degradation and predicted concentrations in soil (PEC¹⁵ soil)

PECsoil values were calculated according to the recommendations of the FOCUS group (1997)¹⁶ and considering the following parameters:

Compound	DT ₅₀ ¹⁷	Percentage formation in the soil (%)
Diflufenican	621 days, maximum value in the field, simple first-order SFO kinetics n=11	-
AE B107137	17.9 days, maximum value in the laboratory, SFO kinetics n=3	16.78
AE 0542291	58.7 days, maximum value in the laboratory, SFO kinetics, n=3	26.26
Metsulfuron-methyl	210.8 days, maximum value in the field, SFO kinetics, n=16	-

¹² AE B107137: 2-(3-trifluoromethylphenoxy) nicotinic acid.

¹³ AE 0542291: 2-(3-trifluoromethylphenoxy)-nicotinamide.

¹⁴ AE C522392: 2,4-difluoroaniline.

¹⁵ Predicted Environmental Concentration

¹⁶ FOCUS (1997) Soil persistence models and EU registration, Doc. 7617/VI/96, 29.2.97.

¹⁷ DT50: time required for 50% degradation of the initial concentration of a substance.

Compound	DT ₅₀ ¹⁷	Percentage formation in the soil (%)
Sulfonamide	-	17
Sulfonamide acid	-	29
Saccharin	-	47
Triazine amine	-	33
Carbamoyl guanidine	-	16
O-desmethyl metsulfuron	-	11
IN-F5438	-	23.0

PECsoil values were calculated as follows for an application of 45¹⁸ g diflufenican/ha and 4.5 g metsulfuron-methyl/ha:

Compound	PECsoil (mg/kg _{SOIL})
Diflufenican	0.045
AE B107137	0.0054
AE 0542291	0.0085
Metsulfuron-methyl	0.0045
Sulfonamide	0.0004
Sulfonamide acid	0.0007
Saccharin	0.001
Triazine amine	0.0005
Carbamoyl guanidine	0.0006
O-desmethyl metsulfuron	0.0005
IN-F5438	0.0011

* PECsoil values calculated to undertake a refined eco-toxicological assessment.

Persistence and risk of accumulation

Diflufenican is considered to be persistent as defined in Annex VI of Directive 91/414/EEC. Accumulation studies undertaken in the field for the European assessment determined an accumulation plateau at 0.405 mg/kg_{SOIL}, reached after four years of application, based on a rate of 250 g a.s./ha (value established during the PRAPeR¹⁹ on 22 May 2007).

Taking into account the new data on metsulfuron-methyl and its metabolites, metsulfuron-methyl (DT₅₀ equal to 210.8 days), the metabolite saccharin (DT₅₀ equal to 237 days) and the triazine amine metabolite (DT₅₀ equal to 65.9 days) are considered to be persistent as defined in Annex VI of Directive 91/414/EEC.

Therefore, the maximum concentrations of metsulfuron and the metabolites saccharin and triazine amine were determined with a rate of 4.5 g metsulfuron-methyl/ha. The plateau concentrations are given in the following table:

Residues	Maximum (plateau) concentrations (mg/kg _{SOIL})	Number of years required to reach the maximum concentration
Metsulfuron-methyl	0.0064	5
Saccharin	0.0015	5
Triazine amine	0.0005	2

Transfer to groundwater **Adsorption and mobility** • **Diflufenican**

¹⁸ Reduced dose considered for weed control in the autumn and spring (see Efficacy section).

¹⁹ PRAPeR: Pesticide risk assessment peer review

Diflufenican is considered to be intrinsically slightly mobile, the metabolite AE B107137 very mobile and the metabolite AE 0542291 mobile according to the McCall classification²⁰.

- **Metsulfuron-methyl**

According to the McCall classification, metsulfuron-methyl and its metabolites are considered to be intrinsically very mobile to mobile.

Modelling parameters

Transfer risks for diflufenican, metsulfuron-methyl and their respective metabolites were assessed using the FOCUS PELMO model version 3.3.2 and PEARL model version 3.3.3, following the recommendation of the FOCUS group (2000)²¹, and based on the following input parameters:

Compound	DT ₅₀ (days)	Kfoc ²² (mL/goc)	1/n ²³	ffM ²⁴
Diflufenican	156 days (geometric mean of field values normalised to 20°C and pF 2, SFO kinetics ²⁵ , n=8)	3186 (median value, n=6)	0.92 (mean value, n=6)	
AE B107137	10.36 days (geometric mean of laboratory values normalised to 20°C and pF 2, SFO kinetics, n=3)	10 (mean, n=4)	0.73 (mean, n=4)	-
AE0542291	22.9 days (geometric mean of laboratory values normalised to 20°C and pF 2, SFO kinetics, n=3)	131.8 (mean value, n=4)	0.82 (mean value, n=4)	-
Metsulfuron-methyl	23.7 (median laboratory value, 20°C, pF=2, SFO kinetics, n=13)	21.3 (median, n=12)	0.97 (median, n=12)	
O-desmethyl metsulfuron	29.1 (geometric mean of laboratory values, 20°C, pF=2, SFO kinetics, n=3)	29.3 (mean, n=3)	0.97 (mean, n=3)	0.46 from the parent
Carbamoyl guanidine	27.7 (geometric mean of laboratory values, 20°C, pF=2, SFO kinetics, n=3)	41 (minimum value from adsorption studies, n=2)	0.86 (value corresponding to the selected Kfoc value, n=2)	0.5 from O-desmethyl metsulfuron

²⁰ McCall P.J., Laskowski D.A., Swann R.L., Dishburger H.J. (1981), Measurement of sorption coefficients of organic chemicals and their use in environmental fate analysis, In: Test protocols for environmental fate and movement of toxicants, Association of Official Analytical Chemists (AOAC), Arlington, Va., USA.

²¹ FOCUS (2000) FOCUS groundwater scenarios in the EU review of active substances, Report of the FOCUS groundwater scenarios workgroup, EC document reference Sanco/321/2000-rev2, 202pp.

²² Kfoc: adsorption coefficient by organic carbon content used in the Freundlich equation.

²³ 1/n: exponent in the Freundlich equation.

²⁴ ffM: kinetic formation fraction.

²⁵ SFO: determined based on Simple First-Order kinetics

Compound	DT ₅₀ (days)	Kfoc ²² (mL/g _{oc})	1/n ²³	ffM ²⁴
IN-F5438	48.1 (maximum laboratory value, 20 °C, SFO kinetics, n=2)	0 (default value)	-	0.31 from the parent
Sulfonamide ester	9 (maximum laboratory value, 20 °C, pF=2, SFO kinetics, n=2)	0 (SCP, 2000 ²⁶)	-	0.5 from O-desmethyl metsulfuron
Saccharin	59.8 (geometric mean of laboratory values, 20 °C, pF=2, SFO kinetics, n=3)	14 (mean, n=3)	0.94 (mean, n=3)	1 from sulphonamide acid
Triazine amine	54.4 (geometric mean of laboratory values, 20 °C, pF=2, SFO kinetics, n=3)	28 (median, n=10)	0.84 (median, n=10)	1 from IN-F5438
Sulfonamide acid	22.3 (normalised laboratory value, 20 °C, pF=2, SFO kinetics, n=1)	0 (SCP, 2000)	-	1 from carbamoyl guanidine and 1 from ester sulfonamide

Predicted concentrations in groundwater (PEC_{gw})

- ***Diflufenican***

The PEC_{gw} values calculated for diflufenican and its metabolites are below the regulatory value of 0.1 µg/L for the requested uses.

- ***Metsulfuron-methyl***

The PEC_{gw} values calculated for metsulfuron-methyl and for the metabolites triazine amine, O-desmethyl metsulfuron, sulfonamide ester and carbamoyl guanidine are below the regulatory value of 0.1 µg/L for all representative European scenarios. The PEC_{gw} values calculated for the metabolites sulphonamide acid, IN-F5438 and saccharin are above the regulatory value of 0.1 µg/L for certain representative European scenarios (maximum PEC values respectively equal to 0.1623, 0.3605 and 0.1282 µg/L). Since these metabolites are not considered relevant as defined in the European guidance document Sanco/221/2000²⁷, the risks of contamination for groundwater are considered acceptable for these metabolites.

Therefore, the risks of groundwater contamination are considered to be acceptable.

Fate and behaviour in surface water

Degradation pathways in water and/or water-sediment systems

- ***Diflufenican***

Diflufenican is primarily dissipated from the water phase of water-sediment systems, by sediment adsorption (74.4% AR in the sediment after 14 days of incubation) and by degradation into the metabolite AEB 107137 (13.3% in the sediment and 32.6% in the water phase after 30 days of incubation). Mineralisation can reach 6.8% AR after 365 days of incubation.

Diflufenican and its metabolite AE B107137 are not degraded by hydrolysis.

- ***Metsulfuron-methyl***

²⁶ European Commission – Scientific Committee on Plants (2000) Opinion of the scientific committee on plants regarding the inclusion of metsulfuron methyl in Annex 1 of Council Directive 91/414/EEC concerning the placing of plant protection products on the market, SCP/METSU/002-Final, 5 April 2000.

²⁷ European Commission (25 February 2003), Guidance document on the assessment of the relevance of metabolites in groundwater of substances regulated under Council Directive 91/414/EEC, Sanco/221/2000 –rev.10- final.

Metsulfuron-methyl dissipates slowly in water-sediment systems. Mineralisation is negligible (less than 3% AR) and the formation of unextractable residues accounts for up to 19.6% AR. The metabolites bis-O-methyl metsulfuron, IN-F5438 and triazine amine have been identified as major metabolites with respective maximum levels of 25, 19 and 22% AR in the water phase and 8, 6 and 19% AR in sediment.

Metsulfuron-methyl is stable to hydrolysis at pH values 7 and 9 (at 25°C) but is rapidly degraded at pH 5 (DT₅₀ equal to 22 days at 25°C). Three major metabolites have been identified (sulfonamide, saccharin and triazine amine). However, photolysis in water is not a significant degradation pathway.

Degradation rate and predictable concentrations in surface water (PECsw) and sediment (PECsed)

PECsw values were calculated for spray drift and drainage considering the following parameters in particular:

- for diflufenican: DT₅₀water = 48.1 days (maximum value for the water column of water-sediment systems in the laboratory, SFO kinetics, n=4);
- for AE B107137: maximum 32.6% AR in the water and 13.3% in the sediment;
- for AE 0542291: maximum 26.26% AR in the soil (PEC drainage);
- for metsulfuron-methyl: DT₅₀water = 184 days (maximum value for the water column of water-sediment systems in the laboratory, SFO kinetics, n=4).

The maximum PECsw values calculated for the requested use are as follows:

Route of entry	PECsw (µg/L)			
	drift			drainage
	10 m	30 m	100 m	
Distance from the treated field				
Diflufenican	0.058	0.02	0.006	0.0338
AE B107137	0.0136	0.0047	0.0014	0.0407
AE 0542291	-	-	-	0.0254
Metsulfuron-methyl	0.0058	0.002	0.0006	0.0338
Ester sulfonamide	-	-	-	0.0032
Sulfonamide acid	-	-	-	0.0052
Saccharin	-	-	-	0.0076
Carbamoyl guanidine	-	-	-	0.0049
O-desmethyl metsulfuron	-	-	-	0.0036
Triazine amine	-	-	-	0.0041
IN-F5438	-	-	-	0.0079

- value not determined

Behaviour in air

• **Diflufenican**

Diflufenican has low volatilisation potential (saturated vapour pressure equal to 4.25 x 10⁻⁶ Pa at 25°C). Moreover, the potential for atmospheric transport over long distances is considered to be negligible (DT₅₀ atm. equal to 5 days).

• **Metsulfuron-methyl**

Metsulfuron-methyl has low volatilisation potential (saturated vapour pressure equal to 1.10 x 10⁻¹⁰ Pa at 20°C). Moreover, the potential for atmospheric transport over long distances is considered to be negligible (DT₅₀ atm. equal to 2.1 days).

CONSIDERING THE ECOTOXICITY DATA

Effects on birds

Acute, short-term and long-term risks to herbivorous and insectivorous birds were assessed in accordance with the recommendation of the European guidance document Sanco/4145/2000, on the basis of the toxicity data for the active substances taken from the European dossiers:

- **Diflufenican**
 - for acute exposure, the LD₅₀ greater than 2150 mg/kg bw (acute toxicity study in Northern Bobwhite quails);
 - for long-term exposure, the No-Effect Level (NOEL) of 91.84 mg/kg bw/day (reproductive toxicity study in Northern Bobwhites).

- **Metsulfuron-methyl**
 - for acute exposure, the LD₅₀ greater than 2510 mg/kg bw (acute toxicity study in Mallard ducks);
 - for short-term exposure, the LD₅₀ greater than 1405 mg/kg bw/day (dietary toxicity studies in Mallard ducks and Northern Bobwhites);
 - for long-term exposure, the NOEL of 100 mg/kg bw/day (reproductive toxicity study in Northern Bobwhites).

Toxicity/exposure ratios (TER²⁸) were calculated for the active substances in accordance with Directive 91/414/EEC and compared to the threshold values proposed in Annex VI of Directive 91/414/EEC (10 for acute and short-term risk and 5 for long-term risk) for the application rate and the requested uses.

	Birds	Use	TER	Refined TER	Risk acceptability threshold
Diflufenican					
Acute exposure	Herbivores	Winter cereals	> 574	-	10
	Insectivores	Winter cereals	> 663	-	
Long-term exposure	Herbivores	Winter cereals	86.9	-	5
	Insectivores	Winter cereals	50.8	-	
Metsulfuron-methyl					
Acute exposure	Herbivores	Winter cereals	> 6695	-	10
	Insectivores	Winter cereals	> 7735	-	
Short-term exposure	Herbivores	Winter cereals	> 7003	-	10
	Insectivores	Winter cereals	> 7764	-	
Long-term exposure	Herbivores	Winter cereals	946	-	5
	Insectivores	Winter cereals	553	-	

Since the acute, short-term and long-term TERs, calculated in a first-tier approach and taking into account standard residue levels in plants and in soil insects for the active substances, are greater than the threshold values, the acute, short-term and long-term risks are acceptable for herbivorous and insectivorous birds for the requested uses.

Risks of secondary poisoning due to bioaccumulation

Given that diflufenican has bioaccumulation potential (log Pow²⁹ greater than 3), the risks of secondary poisoning from the consumption of earthworms and fish were assessed. Since the calculated TERs (TERs respectively equal to 80.3 and 573 for worm-eating and fish-eating birds) are greater than the threshold value of 5, these risks are acceptable.

²⁸ The TER is the ratio between the toxicological value (LD₅₀, LC₅₀, No Effect Level, the lowest level having an effect) and estimated exposure, expressed in the same unit. This ratio is compared to a threshold defined in Annex VI of Directive 91/414/EEC below which the safety margin is not considered to be sufficient to consider the risk as acceptable.

²⁹ Log Pow: logarithm of the octanol/water partition coefficient.

Since metsulfuron-methyl has low bioaccumulation potential (log Pow less than 3), the risks of secondary poisoning are considered to be negligible.

Acute risks related to the consumption of drinking water

Risks of poisoning in birds through the consumption of drinking water contaminated due to spraying were assessed for the active substances and are considered to be acceptable (TER greater than 3.7×10^6 for diflufenican and greater than 4.7×10^5 for metsulfuron-methyl).

Effects on mammals

Acute and long-term risks to herbivorous mammals

Acute and long-term risks to herbivorous and insectivorous mammals were assessed in accordance with the recommendations of the European guidance document Sanco/4145/2000, on the basis of the toxicity data for the active substances taken from the European dossiers:

- **Diflufenican**
 - for acute exposure, the LD₅₀ greater than 5000 mg/kg bw (acute toxicity study in rats);
 - for long-term exposure, the NOEL of 35.5 mg/kg bw/day (two-generation reproductive toxicity study in rats).
- **Metsulfuron-methyl**
 - for acute exposure, the LD₅₀ greater than 5000 mg/kg bw (acute toxicity study in rats);
 - for long-term exposure, the NOEL of 34 mg/kg bw/day (two-generation reproductive toxicity study in rats).

TERs were calculated for the active substances in accordance with Directive 91/414/EEC and compared to the threshold values proposed in Annex VI of Directive 91/414/EEC (10 for acute risk and 5 for long-term risk) for the application rate and the requested uses.

	Mammals	Use	TER	Refined TER	Risk acceptability threshold
Diflufenican					
Acute exposure	Herbivores	Winter cereals	> 422	-	10
	Insectivores	Winter cereals	> 9448	-	
Long-term exposure	Herbivores	Winter cereals	10.6	-	5
	Insectivores	Winter cereals	184	-	
Metsulfuron-methyl					
Acute exposure	Herbivores	Winter cereals	> 4222	-	10
	Insectivores	Winter cereals	> 94482	-	
Long-term exposure	Herbivores	Winter cereals	102	-	5
	Insectivores	Winter cereals	1764	-	

Since the acute and long-term TERs, calculated in a first-approach analysis and taking into account standard residue levels in plants and in soil insects for the active substances, are greater than the threshold values, the acute and long-term risks to herbivorous and insectivorous mammals are acceptable for the requested uses.

Risks of secondary poisoning due to bioaccumulation

Given that diflufenican has bioaccumulation potential (log Pow greater than 3), the risks of secondary poisoning from the consumption of earthworms and fish were assessed. Since the calculated TERs (TERs respectively equal to 25.0 and 358 for worm-eating and fish-eating mammals) are greater than the threshold value of 5, these risks are acceptable.

Since metsulfuron-methyl has low bioaccumulation potential (log Pow less than 3), the risks of secondary poisoning are considered to be negligible.

Acute risks related to the consumption of drinking water

Risks of poisoning in mammals through the consumption of drinking water contaminated due to spraying were assessed for the active substances and are considered to be acceptable (TER greater than $1.7 \cdot 10^7$ for diflufenican and greater than 1.8×10^6 for metsulfuron-methyl).

Effects on aquatic organisms

Risks to aquatic organisms were assessed on the basis of the data in the European dossiers on diflufenican, metsulfuron-methyl and their metabolites. Furthermore, toxicity data for ALLIANCE WG are available for fish, aquatic invertebrates and algae. These data do not indicate that the product's toxicity is any higher than the toxicity expected based on the data for the active substances. Furthermore, all the data on the metabolites of the active substances show that they are less toxic than their parent compounds. The risk assessment is therefore based on the PNEC³⁰ values for the active substances and the recommendations in the European guidance document Sanco/3268/2001.

The PNEC for diflufenican is based on the NOEC³¹ taken from a microcosm study to which a safety factor of one has been applied (diflufenican PNEC equal to 0.22 µg/L).

The PNEC for metsulfuron-methyl is based on the EC₅₀³² taken from a study of effects in the aquatic plant *Lemna gibba*, to which a safety factor of 10 has been applied (metsulfuron-methyl PNEC equal to 0.036 µg/L).

These PNEC values were compared to the calculated PEC values to take into account spray drift for the active substances. Based on this comparison, it is recommended to respect a five-metre no-spray buffer zone along the edges of water bodies for all uses.

These PNEC values were also compared to the calculated PEC values to take into account transfers from drainage for the active substances and metabolites. Based on these comparisons, it can be concluded that the risks from this route of transfer are acceptable.

Risks to sediment-dwelling organisms were assessed and are considered to be acceptable.

Effects on bees

Risks to bees were assessed in accordance with the recommendations in the European guidance document Sanco/10329/2002. The risk assessment for bees was based on acute toxicity data on oral and contact exposure with the active substances (diflufenican: contact LD₅₀ greater than 100 µg as/bee and oral LD₅₀ greater than 112.3 µg as/bee; metsulfuron-methyl: contact LD₅₀ greater than 25 µg as/bee and oral LD₅₀ greater than 44.3 µg as/bee). No toxicity data are available for the formulation. However, in view of the low toxicity of diflufenican and metsulfuron-methyl to bees and given that no increases in toxicity of the formulation have been shown for other organisms, the data on the active substances are considered sufficient to assess the risks.

Since the Hazard Quotient (HQ) values for contact and oral exposure are lower than the threshold value of 50 proposed in Annex VI of Directive 91/414/EEC (contact HQ lower than 0.6 and oral HQ lower than 0.53 for diflufenican and contact HQ lower than 0.24 and oral HQ lower than 0.14 for metsulfuron-methyl), the risks to bees are acceptable.

Effects on other non-target arthropods

The assessment of risks to non-target arthropods was based on laboratory tests on an inert substrate performed with ALLIANCE WG in the two standard species (*Aphidius rhopalosiphii* and *Typhlodromus pyri*). The field HQ values are lower than the threshold value of two taken from the Escort 2 guidance document for uses on winter cereals. Field risks to non-target arthropods are therefore acceptable for all of the requested uses.

Effects on earthworms and other non-target soil macro-organisms presumed to be exposed to a risk

³⁰ PNEC: Predicted No Effect Concentration

³¹ NOEC: No Observed Effect Concentration.

³² EC₅₀: concentration where 50% of the maximum effect is observed.

Risks to earthworms and other soil macro-organisms were assessed in accordance with the recommendations in the European guidance document Sanco/10329/2002, on the basis of the information available on diflufenican, metsulfuron-methyl, their metabolites and ALLIANCE WG.

Since the TERs for the active substances and metabolites calculated in a first-tier analysis are greater than the threshold values (10 for acute risk and 5 for long-term risk) proposed in Annex VI of Directive 91/414/EEC, the acute and long-term risks are acceptable for the requested uses (acute TER greater than 1235 for diflufenican, greater than 166 667 for metsulfuron-methyl and greater than values of 667 to 2 500 000 for metabolites; long-term TER equal to 1235 for diflufenican, 11.7 for metsulfuron-methyl and ranging from 33.3 to 400 for metabolites).

Effects on non-target soil micro-organisms

Tests are available on the toxicity of diflufenican, metsulfuron-methyl, their respective metabolites and the formulated product on soil respiration and nitrogen mineralisation. The results of these tests do not show any effects on nitrogen or carbon mineralisation in the soil at doses above the PEC values for either of the two active substances. No harmful effects on the soil nitrogen and carbon mineralisation are therefore expected following application of ALLIANCE WG for the requested uses.

Effects on other non-target organisms (flora and fauna) presumed to be exposed to a risk

Laboratory tests on the toxicity of ALLIANCE WG on seedling emergence and vegetative vigour in six species were submitted in the framework of this application. The results indicate that the most sensitive species are beet (for emergence) and carrots (for vegetative vigour).

By comparing the ER_{50}^{33} , based on the effects on seedling biomass, with the doses corresponding to spray drift, it can be concluded that the risks to non-target plants are acceptable taking into account a five-metre no-spray buffer zone (EC_{50} more than five times the high-exposure dose of 0.29 g product/ha).

CONSIDERING THE BIOLOGICAL DATA

Metsulfuron-methyl belongs to the class of sulfonylureas. It inhibits an enzyme, acetolactate synthase. This enzyme is involved in the biosynthesis of amino acids (leucine, isoleucine and valine). Its inhibition blocks the production of proteins and results in the plant's death.

Diflufenican belongs to the class of pyridine-carboxamides. It acts before or after weed emergence. Pre-emergence, highly adsorbed in the upper two centimetres of the soil, it penetrates the weed through the tigellum. Post-emergence, its contact action is more effective on young tissues, up to the four-leaf stage. It acts on weeds by inhibiting the activity of the PDS (phytoene desaturase) enzyme. Since the latter is involved in the production of carotenoids, these can no longer protect the chlorophyll from photo-oxidation. Its destruction is followed by the plant's death.

Preliminary tests

Preliminary tests justified the benefits of the product applied in the autumn. At the end of winter, the benefits of this combination are less apparent, as diflufenican has low efficacy on more-developed weeds.

Efficacy tests

Forty efficacy trials and 50 practical-value (~ registration) trials were submitted with this application. For autumn application, no differences in efficacy were noted between the two tested doses (0.075 and 0.100 kg/ha), justifying the choice of the lowest dose. ALLIANCE WG has:

- high efficacy levels (greater than 95%), similar to those of the reference product containing ioxynil and mecoprop-P, on tall chamomile (*Anthemis altissima*), hairy bittercress (*Cardamine hirsuta*), annual bastardcabbage (*Rapistrum rugosum*), charlock mustard (*Sinapis arvensis*) and chickweed (*Stellaria media*);
- higher efficacy levels than the reference product on green field speedwell (*Veronica agrestis*) and European field pansy (*Viola arvensis*);

³³ ER_{50} : Median emergence rate

- insufficient efficacy levels, lower than those of the reference product, on bishop's weed (*Ammi majus*), wild carrot (*Daucus carota*) and ivy-leaved speedwell (*Veronica hederifolia*).

For application at the end of winter, few differences in efficacy were noted between the two rates tested (0.075 and 0.100 kg/ha). Since the choice of rate is not justified, ANSES proposes, a 0.075 kg/ha application at the end of winter, as in the autumn. The ALLIANCE WG product has:

- high efficacy levels (greater than 95%), similar to those of the reference product containing ioxynil and mecoprop-P, on common poppy (*Papaver rhoeas*) and chickweed (*S. media*);
- insufficient efficacy levels, lower than those of the reference product, on corn speedwell (*Veronica arvensis*) and ivy-leaved speedwell (*V. hederifolia*).

The practical-value trials confirm the product's efficacy levels observed in the efficacy trials, particularly for autumn application.

Phytotoxicity tests

Fourteen cereal selectivity tests were provided with the application. Symptoms were observed, particularly on wheat and winter barley, but remained transitory. Furthermore, no differences were noted compared to the reference product. ALLIANCE WG can be considered selective for the proposed crops for application in the autumn and end of winter.

Effects on yield, plant quality and processed products

Eleven selectivity tests in all of the proposed crops and three processing tests were undertaken to measure yields. The results of these tests show no observable effects on yields. ALLIANCE WG does not affect yields.

Quality criteria such as protein levels, grain size and moisture levels were measured. These measurements confirm that ALLIANCE WG has no impact on the quality of harvested cereals.

Regarding processing methods, ALLIANCE WG does not affect the brewing process and should not affect the bread-making process.

Unexpected secondary effects

Regarding succeeding and replacement crops, diflufenican's degradation in the soil requires a 12-week interval before sowing/planting a new crop after use of ALLIANCE WG. Moreover, a list of crops, written on the label, has been proposed in keeping with those for other products containing metsulfuron-methyl.

As for adjacent crops, no data were provided in the biological dossier. Only a discussion based on the ecotoxicological data was presented. The applicant recommends a five-metre no-spray buffer zone around neighbouring crops. Currently, products containing the two active substances in this combination are authorised on cereals at similar or higher rates with no restrictions with regard to adjacent crops.

As for the impact on seed production, no impacts on germination were found in three brewery tests. ALLIANCE WG is not expected to affect crops intended for seed production.

Resistance

The applicant provided a bibliographic study on this issue. The risk of developing resistance to metsulfuron-methyl is considered to be high. The addition of diflufenican to ALLIANCE WG limits the risk of resistance appearing essentially to the autumn. However, the risk cannot be considered low. No management strategies or monitoring programmes have been proposed. Strategies should be recommended to limit the emergence of resistance and a system should be developed to monitor resistance to metsulfuron-methyl in weeds.

3. CONCLUSIONS

Based upon the risk acceptability criteria defined in Directive 91/414/EEC, the conclusions of the EU assessment of the active substances, the data submitted by the applicant that were assessed in the framework of this application and all of the information at its disposal, the French Agency for Food, Environmental and Occupational Health & Safety considers that:

- A.** The physico-chemical properties of ALLIANCE WG have been described and the analytical methods are considered to be acceptable. However, in the post-authorisation period it will be necessary to provide tests on the suspensibility and persistence of foam as well as a dust content test undertaken after the test on wear resistance after two years of storage at ambient temperature.

Risks to operators related to use of ALLIANCE WG are considered to be acceptable in the conditions of use specified below. Risks to workers and bystanders are acceptable.

The residue data provided in the framework of this request to assess ALLIANCE WG show that the MRLs in force will not be exceeded with the requested uses and the acute and chronic risks to consumers related to its use are considered to be acceptable. For treated crops, if a crop has been prematurely interrupted, a period of 120 days before new sowing or planting has been established except for crops on which metsulfuron-methyl is authorised. These replacement crops must not be re-treated with metsulfuron-methyl.

Risks to the environment and particularly risks of groundwater contamination, related to use of ALLIANCE WG, are considered to be acceptable.

Risks to aquatic and terrestrial organisms related to use of ALLIANCE WG are considered to be acceptable in the conditions of use specified below.

- B.** The information provided shows that ALLIANCE WG has a broad efficacy spectrum to control certain dicotyledonous weeds in fields of cereals, particularly in the autumn. The requested rate (0.075 kg/ha) is justified for application in the autumn. However, the requested rate of 0.100 kg/ha at the end of winter is not justified; the dose of 0.075 kg/ha is proposed for application at the end of winter as for application in the autumn. ALLIANCE WG is selective for the proposed crops. Since the risk of developing resistance to the product is considered real, particularly for metsulfuron-methyl, a programme should be put in place to monitor resistance to metsulfuron-methyl.

As a result, considering all of the available data, the French Agency for Food, Environmental and Occupational Health & Safety is issuing a **favourable** Opinion for marketing authorisation for ALLIANCE WG, for uses on hard winter wheat, soft winter wheat, winter barley, winter rye and triticale (Annex 2) in the conditions of use mentioned below.

Classification of the active substances

Active substance	Reference	Former classification	New classification	
			Category	H code
Diflufenican	Regulation (EC) no. 1272/2008 ³⁴	R52/53	Hazardous to the aquatic environment – Chronic hazard, category 3	H412 Harmful to aquatic life with long lasting effects
Metsulfuron-methyl	Regulation (EC) no. 1272/2008	N, R50/53	Hazardous to the aquatic environment – Acute hazard,	H400 Very toxic to aquatic life

³⁴ Regulation (EC) no. 1272/2008 of the European Parliament and Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) no. 1907/2006.

			category 1 Hazardous to the aquatic environment – Chronic hazard, category 1	H410 Very toxic to aquatic life with long-lasting effects
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Classification³⁵ of ALLIANCE WG, risk phrases and safety advice:

Xi, R36/38

N, R50/53

S60 S61

Xi : Irritant

N : Dangerous to the environment

R36/38 : Irritating to eyes and skin

R50/53 : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

S60 : This material and its container must be disposed of as hazardous waste

S61 : Avoid release into the environment. Refer to special instructions / safety data sheet

Conditions of use:

- SP1: Do not pollute water with the product or its container, [Do not clean application equipment near surface water. Avoid contamination via drains from farmyards and roads].
- SPe3: To protect aquatic organisms respect a five-metre no-spray buffer zone along water bodies.
- SPe3: To protect non-target plants, respect a five-metre no-spray buffer zone around the adjacent uncultivated zone.
- Maximum Residue Levels: refer to the MRLs defined at EU level³⁶.
- Pre-harvest intervals: maximum stage of application BBCH 32.
- Wait 120 days before new sowing or planting if a crop has been prematurely interrupted (unless authorised).

Comments on the proposed label:

Add the conventional recommendations on how to limit the appearance of resistance.

Post-authorisation data:

The following should be provided within two years:

- tests on the suspensibility and persistence of foam;
- a dust content test performed after the test on wear resistance after two years of storage at ambient temperature;

It is also necessary to develop a programme to monitor resistance to metsulfuron-methyl and submit the monitoring results on an annual basis.

³⁵ Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous formulations.

³⁶ Regulation (EC) no. 396/2005 of the European Parliament and Council of 23 February 2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin and amending Council Directive 91/414/EEC (OJEU from 16/03/2005) and regulations modifying its annexes II, III and IV regarding the maximum residue levels of the products in its annex I.

Marc MORTUREUX
[Director-General]

Keywords: ALLIANCE WG, herbicide, metsulfuron-methyl, diflufenican, WG, hard winter wheat, soft winter wheat, winter barley, winter rye, triticale, MA application

Annex 1

Requested uses for ALLIANCE WG

Substance	Content in the product	Application rate (dose) of active substance
Diflufenican	600 g/kg	45 to 60 g/ha
Metsulfuron-methyl	60 g/kg	4.5 to 6 g/ha

Use	Dose (Diflufenican Metsulfuron- methyl)	Maximum number of applications	Pre-harvest Interval (in days)
15105932 *hard winter wheat* weed control	Autumn (BBCH 13 to 19) 0.075 kg/ha (45 g/ha 4.5 g/ha)	1	-
15105912 *soft winter wheat* weed control			
15105913 *winter barley*weed control	End of winter- spring (BBCH20 to 32) 0.100 kg/ha (60 g/ha 6 g/ha)		
15105915 *winter rye*weed control			
15105934 *triticale*weed control			

Annex 2

Proposed uses for ALLIANCE WG

Use	Dose (Diflufenican Metsulfuron- methyl)	Maximum number of applications	Pre-harvest Interval (in days)
15105932 *hard winter wheat* weed control	0.075 kg/ha (45 g/ha 4.5 g/ha)	1 before BBCH 32	-
15105912 *soft winter wheat* weed control			
15105913 *winter barley*weed control			
15105915 *winter rye*weed control			
15105934 *triticale*weed control			