TECHNICAL REPORT

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Outcome of the consultation with Member States and EFSA on the basic substance application for approval of Comfrey steeping to be used in plant protection as an insect repellent and plant elicitor in fruit trees, grass and vegetables

European Food Safety Authority (EFSA)

Abstract

The European Food Safety Authority (EFSA) was asked by the European Commission to provide scientific assistance with respect to the evaluation of applications received by the European Commission concerning basic substances. In this context, EFSA's scientific views on the specific points raised during the commenting phase conducted with Member States and EFSA on the basic substance application for Comfrey steeping are presented. The context of the evaluation was that required by the European Commission in accordance with Article 23 of Regulation (EC) No 1107/2009 following the submission of an application for approval of Comfrey steeping as a basic substance to be used in plant protection as an insect repellent and plant elicitor in fruit trees, grass and vegetables. The current report summarises the outcome of the consultation process organised by EFSA and presents EFSA's scientific views on the individual comments received.

Keywords: Comfrey steeping, *Symphytum officinale* L., basic substance, application, consultation, plant protection, pesticide

Requestor: European Commission

Question number: EFSA-Q-2019-00641

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Summary

Comfrey steeping is an active substance for which, in accordance with Article 23(3) of Regulation (EC) No 1107/2009, the European Commission received an application from Greenprotech for approval as a 'basic substance'. Regulation (EC) No 1107/2009 introduced the new category of 'basic substances', which are described, among others, as active substances, not predominantly used as plant protection products but which may be of value for plant protection and for which the economic interest in applying for approval may be limited. Article 23 of Regulation (EC) No 1107/2009 lays down specific provisions for consideration of applications for approval of basic substances.

In March 2013, the European Commission requested the European Food Safety Authority (EFSA) to provide scientific assistance with respect to the evaluation of applications received by the European Commission concerning basic substances. By a further specific request, received from the European Commission in October 2019, EFSA was asked to organise a consultation on the basic substance application for Comfrey steeping, to consult the applicant on the comments received, and to deliver its scientific views on the specific points raised in the format of a reporting table within three months of acceptance of the specific request.

A consultation on the basic substance application for Comfrey steeping, organised by EFSA, was conducted with Member States via a written procedure in February – April 2019. Subsequently, EFSA also provided comments and the applicant was invited to address all the comments received in the format of a reporting table and to provide an application update as appropriate, within a period of 30 days.

The current report summarises the outcome of the consultation process organised by EFSA on the basic substance application for Comfrey steeping and presents EFSA's scientific views on the individual comments received in the format of a reporting table.

Symphytum officinale L. is a perennial flowering plant of the genus *Symphytum* in the family Boraginaceae. This species is known as common comfrey or true comfrey. It is a complex mixture of chemical substances, containing among others allantoin, carotenes, fatty acids, silicic acid, tannins. Comfrey also contains pyrrolizidine alkaloids. The product to be used is the comfrey raw leaves or dry leaves that have been macerated in water during a few days to 2 weeks. Data gaps were identified for clarification as regards the components considered as pesticidal active, their content in the comfrey extract and also analytical methods for their determination in the extract and in the environment.

The proposed uses of Comfrey steeping (*Symphytum officinale* L. maceration) are spray applications as a plant elicitor on fruit trees and grass and by watering of seedlings in vegetables, and spray applications as an insect repellent on fruit trees and vegetables against aphids, however additional studies or literature data would be needed to support the intended uses.

Comfrey steeping is known to contain genotoxic and carcinogenic components, such as pyrrolizidine alkaloids, however the application does not contain information on the content of these compounds in the product applied for. Since a genotoxic (and carcinogenic) potential is expected for Comfrey steeping components, no toxicological reference values can be established and a non-dietary exposure risk assessment cannot be conducted.

An appropriate consumer dietary assessment was not presented in the application.

An appropriate environmental exposure assessment was not presented in the application.

The applicant has not provided any suitable information to allow for a risk assessment for non-target organisms to be performed.

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1. Introduction

1.1. Background and Terms of Reference as provided by the requestor

Regulation (EC) No 1107/2009[1] (hereinafter referred to as 'the Regulation') introduced the new category of 'basic substances', which are described, among others, as active substances, not predominantly used as plant protection products but which may be of value for plant protection and for which the economic interest of applying for approval may be limited. Article 23 of the Regulation lays down specific provisions to identify a substance as a basic substance with a view to ensure that such active substances that do not have an immediate or delayed harmful effect on human and animal health nor an unacceptable effect on the environment can be approved as 'basic' and used for plant protection purposes.

Comfrey steeping is an active substance for which, in accordance with Article 23(3) of the Regulation, the European Commission received an application from Greenprotech for approval as a 'basic substance' to be used in plant protection as an insect repellent and plant elicitor in fruit trees, grass and vegetables.

The European Food Safety Authority (EFSA) organised a consultation with Member States on the basic substance application for Comfrey steeping, which was conducted via a written procedure in February – April 2019. The comments received, including EFSA's comments, were consolidated by EFSA in the format of a reporting table. Subsequently, the applicant Greenprotech was invited to address the comments in column 4 of the reporting table and to provide an application update as appropriate. Following a change of ownership of the application, the comments received were transferred to the new applicant ITAB (Institut Technique de l'Agriculture Biologique) who provided response to the comments, together with an application update, which were further considered by EFSA before finalising the reporting table.

The current report aims to summarise the outcome of the consultation process organised by EFSA on the basic substance application for Comfrey steeping and to present EFSA's scientific views on the individual comments received in the format of a reporting table.

The application and, where relevant, any update thereof submitted by the applicant for approval of Comfrey steeping as a 'basic substance' in the context of Article 23 of the Regulation, is a key supporting documentation, therefore it is considered as a background documentation to this report and will also be made publicly available, excluding its appendices (Greenprotech; 2016; ITAB (Institut Technique de l'Agriculture Biologique), 2019).

1.2. Interpretation of the Terms of Reference

On 6 March 2013 the European Commission requested EFSA to provide scientific assistance with respect to the evaluation of applications received by the European Commission concerning basic substances. By a further specific request, received by EFSA on 7 October 2019, EFSA was asked to organise a consultation on the basic substance application for Comfrey steeping, to consult the applicant on the comments received, and to deliver its scientific views on the specific points raised in the format of a reporting table.

To this end, a technical report containing the finalised reporting table is being prepared by EFSA. The agreed deadline for providing the finalised report is 7 January 2020.

On the basis of the reporting table, the European Commission may decide to further consult EFSA to conduct a full or focussed peer review and to provide its conclusions on certain specific points.

[1] Regulation (EC) No 1107/2009 of the European Parliament and of the Council of 21 October 2009 concerning the placing of plant protection products on the market and repealing Council Directives 79/117/EEC and 91/414/EEC. OJ L 309, 24.11.2009, p. 1-50.

2. Assessment

The comments received on the basic substance application for Comfrey steeping and the conclusions drawn by EFSA are presented in the format of a reporting table.

The comments received are summarised in columns 2 and 3 of the reporting table. The applicant's considerations of the comments, where available, are provided in column 4, while EFSA's scientific views and conclusions are outlined in column 5 of the table.

The finalised reporting table is provided in Appendix A of this report. In addition, an overview table on the identity and biological properties of the substance and the list of intended uses in plant protection (GAP table) are provided in Appendix B and C, respectively.

Documentation provided to EFSA

1. Greenprotech, 2016. Basic substance application on Comfrey steeping submitted in the context of Article 23 of Regulation (EC) No 1107/2009. January 2016. Documentation made available to EFSA by the European Commission.

2. ITAB (Institut Technique de l'Agriculture Biologique), 2019. Basic substance application update on Comfrey steeping submitted in the context of Article 23 of Regulation (EC) No 1107/2009. July 2019. Documentation made available to EFSA by the applicant following taking over ownership from the initial applicant Greenprotech.

References

EFSA Panel on Contaminants in the Food Chain (CONTAM), 2011. Scientific Opinion on Pyrrolizidine alkaloids in food and feed. EFSA Journal 2011; 9(11):2406. [134 pp.] doi:10.2903/j.efsa. 2011.2406. Available online: www.efsa.europa.eu

Mulder PPJ, López Sánchez P, These A, Preiss-Weigert A and Castellari M, 2015. Occurrence of Pyrrolizidine Alkaloids in food. EFSA supporting publication 2015:EN-859, 114 pp

Abbreviations

ADI	acceptable daily intake
a.s.	active substance
ANZFSA	the Australian New Zealand Food Safety Authority
AOEL	acceptable operator exposure level
BSA	basic substance application
DC	dispersible concentrate
DG	Directorate General of the European Commission
GAP	good agricultural practice
EINECS	European Inventory of Existing Commercial Chemical Substances
HPLC	high performance liquid chromatography
PEC	predicted environmental concentration
PEC_{sw}	predicted environmental concentration in surface water
PA	pyrrolizidine alkaloids
PPP	plant protection product
PTDI	provisional tolerable daily intake
VOD	Veno-occlusive disease

Appendix A – Collation of comments from Member States and EFSA on the basic substance application for Comfrey steeping and the conclusions drawn by EFSA on the specific points raised

1. Purpose of the application

General					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
1(1)	1. Purpose of the application	NL: Presently, no reason has been provided by the applicant for supporting the substance in particular and its intended uses in plant protection.		Plant elicitor and insect repellent detailed in GAP Table Sold in Germany as Pflanzenstärkungsmittel	Addressed: The application concerns use as plant elicitor and insect repellent, however it is noted that based on Karavaev et al. (p. 15; ITAB, 2019) it shows fungicidal activity and based on Alghamdi et al. (p.17; ITAB, 2019) it has also aphicidal properties. See also comments 3(2), 3(3), 3(6) and 3(7)
1(2)	1. Purpose of the application	NL: Comfrey has a use in (organic) agriculture, although none of the described uses relate to plant protection. Specific		Plant elicitor and insect repellent described in §3	Addressed: The application concerns use as plant elicitor and insect repellent.

General					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
		evidence should be given regarding its use as PPP.			See also comment 1(1)
1(3)	overall	DK: Please delete all the blue template-help text.		Deleted	Addressed.
1(4)	overall	DK: there is a good as no risk assessment; therefore (not considering whether the substance fulfils the criteria for basic substances Article 23) safe use for the proposed uses has not been demonstrated. The report has many references, however they are not used to assess the risk from the proposed use as spray, as they are not drawn into a context where this is possible. Please clearly show how the proposed uses are demonstrated as safe by all the references included in this report. All risks are dependent on exposure; here references		Substance is used at 50 kg rate per hectare in fertilisation Declared safe by M.S. Germany as Pflanzenstärkungsmittel at similar rate	See 5(1, 4), 6(3)

General					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
		are included but not in context with the proposed exposure of humans and the environment from the proposed spray use.			

2. Identity of the substance/product as available on the market and predominant use

2.1. Identity and Physical and chemical properties of the substance and product to be used					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
2(1)	2.1.3.1 Composition	DE: Please delete structural formula for boron salts. Boron trifluoride which is given as structure is not a naturally occurring substance.		Deleted	Addressed.
2(2)	2.1.3.1 Composition	EFSA: were all these mentioned Si containing substances measured for?		These are partly responsible for fungicide activity	Data gap: Clarification is needed how the silicon containing acids were identified.

2.1. Identity and Physical and chemical properties of the substance and product to be used					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
2(3)	2.1.4 Manufacture of the substance	NL: Optimal growth conditions need to be provided for comfrey intended for steeping.		Reference added un the updated version of the BSA	Addressed.
2(4)	2.1.4	DK: Please elaborate on the method of manufacturing. Please quantify both the amount and time for the recipe to roughly get an extract of the proposed centration etc.		Recipe updated	See data gap 2(21)
2(5)	2.1.5	DK: It would be helpful to know not just the content of e.g. Pas in comfrey, but in the final comfrey extract.		Not done, need investments	Data gap: If the pyrrolizidine alkaloids are considered as responsible for the pesticidal activity, their content in the comfrey extract would be needed. See also comment 2(6)
2(6)	2.1.5 Purity	NL: The active components have been identified; pyrrolizidine		Not done, need investments	See data gap 2(5)

2.1. Identity and Physical and chemical properties of the substance and product to be used					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
		alkaloids. The content in comfrey has been provided, although it needs to be specified: are the percentages given for summed PAs in weight PA/weight comfrey?			
2(7)	2.1.5 Purity	NL: No purity range is provided for the product. The resulting PA concentration in the steeping broth is likely influenced by the parameters under comment 2(9). The production process must be fully defined in order to set a specification for the product.		PAs are intrinsic components of comfrey leaves. No cultivar are exempt from PAs	Data gap: If pyrrolizidine alkaloids are considered as responsible for the pesticidal activity, a specification should be set.
2(8)	2.1.6 Impurities	NL: It seems that the applicant also identifies some PAs as impurities. The applicant must better define the active substance and the impurities.		Not done, need investments	Data gap: It should be clarified what are the components considered as pesticidal active.
2(9)	2.1.7 Analytical methods	NL: No validated method have been provided for the active substance or the impurities.		Not done, need investments	Data gap: If pyrrolizidine alkaloids are considered as responsible for

2.1. Identity and Physical and chemical properties of the substance and product to be used

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application
		For the alkaloids, reference is made to an HPLC method. Is this method available?			the pesticidal activity, analytical method(s) for their determination is(are) needed.
2(10)	2.1.7 Analytical methods	NL: It is likely that PAs will end up in environmental matrices (groundwater, soil) upon use. Methods to determine a.s. and, if applicable, impurities need to be provided.		Not done, need investments	Data gap: If pyrrolizidine alkaloids are considered as responsible for the pesticidal activity, analytical methods for their determination in environmental matrices are needed.
2(11)	2.1.7.1 Methods of analysis for determination of the active substance as manufactured	DE: Analytical method for rosmarinic acid is missing. Rosmarinic acid is one of the main constituents of leaves of Symhytum officinale.	DE: An analytical method for determination of rosmarinic acid in leaves of Symhytum officinale should be provided.	Consider values similar as the data provided for *Symphytum officinale* as Pflanzenstärkungsmittel.	Data gap: If rosmarinic acid is considered a compound having pesticidal activity, an analytical method for determination of rosmarinic acid in leaves of *Symhytum officinale* should be provided.

2.1. Identity and Physical and chemical properties of the substance and product to be used					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
2(12)	2.1.7. Methods of analysis, p.12	EFSA: it is not clear what is the role of using method NFU 42-001 Norm (FR)? It seems that this method is aimed to analyse mineral fertilisers: "Le présent document a pour objet de fixer les dénominations et spécifications des engrais minéraux. Il n'a pas pour objet d'établir une sélection répondant à des critères de qualité; il se propose seulement de définir et de caractériser chaque type d'engrais pour en faciliter la distinction et le choix, sans ambiguïté pour l'utilisateur".		NFU Norm is the reference in France for fertilizer until 2022 new fertilizer / biostimulant EU regulation from DG Grow	Addressed: The reference to method NFU 42-001 Norm (FR) is not relevant for this submission.
2(13)	2.1.7.1 Methods of analysis of the a.s. as manufactured, p.12	EFSA: under 2.1.3.1 a description of the composition is presented, however it is not clear that any of these components are	Using a method for fertilizers determining mainly N, P, K would not say anything about the a.s. content.	NPK of comfrey steeping is 8-3-20	See data gaps 2(8) and 2(9) See also comment 2(12)

2.1. Identity and Physical and chemical properties of the substance and product to be used					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
		considered a kind of leading substances to be analysed for?			
2(14)	2.1.5 Specification, p.11	EFSA: There is no description of the specification of the comfrey to be used.		BOCKING 14 cultivar added	See data gap 2(7)
2(15)	2.1.6 Identity of inactive isomers, p.12	EFSA: if the pyrrolizidine alkaloids intermedine and lycopsamine may serve as markers for the undesirable presence of these plant species, why are these not considered as relevant impurities and analysed for?	Is the content of comfrey Pas in leaves: 0.02-0.18 % and roots: 0.25-0.29 % a kind of specification for relevant impurities?	PAs are not impurities, they are intrinsic components of comfrey leaves. No cultivar are exempt from PAs	See data gaps 2(7), 2(8)
2(16)	2.1.7.2 Analytical methods for relevant impurities, p.12	EFSA: we do not think that foreign matter and loss on drying are real relevant impurities. What about pyrrolizidine alkaloids?		PA are not impurities, they are intrinsic components	See data gap 2(8)
2(17)	2.1.7.3 Analytical method for residues, p.12	EFSA: is allantoin considered as a leading substance?		No	Addressed.

2.2. Current Former and in case proposed trade names					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
2(18)	2.2 Trade names	NL: Trade names have been provided. Acceptable.		No comment from applicant	Addressed.

2.3. Manufacturer of the substance/products					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
2(19)	2.3 Manufacturers	NL: Only the applicant is mentioned as manufacturer. More sources may be included.		Initial Applicant Company does not exist anymore. More Manufacturers are provided.	Addressed: For a basic substance application no manufacturers should be named.

2.4. Type of preparation					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
2(20)	2.4 Formulation type	NL: The assigned formulation type (DC) agrees with the CropLife Int. Tech. Monograph coding system and adequately characterizes the decoction. Acceptable.		No comment from applicant DC validated by applicant	Addressed.

2.5. Description of the recipe for the product to be used					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
2(21)	2.5 Manufacture of the product	NL: The method of product manufacture is provided, but lacks a few necessary details, that likely affect the quality of the end product. These parameters need to be well defined to yield a consistent product quality.	NL: It is stated that the maceration takes a few days, which suggests a mechanical process. Please detail how the maceration is being performed (type of machine being used / degree of maceration). Further, the fermentation temperature range needs to be specified.	Recipe detailed	Data gap: Applicant to provide the necessary details how the maceration is being performed.

3. Uses of the substance and its product

3.1. Field of use

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application
3(1)		NL: SANCO/10363/2012 rev.9 states that a basic substance can't be placed on the market as a plant protection product. How would this impact the currently marketed fertilizer products by the applicant based on comfrey steeping? this is different from a situation where the product has a current, non-agricultural use (i.e: beer used against snails) where current sales of the product are insignificantly affected by the PPP use. There is significant overlap between the current use of the product (fertilizer) and basic substance claim as for both intended uses application on plants is intended. It appears that the applicant could not market its product as a PPP, however continued marketing as just a fertilizer/growth enhancer would be very dubious as the substance would be known to have PPP claims after authorisation as a basic substance.	Clarification needed	Both statuses have no interaction neither overlapping. Many cases of substances sold both as fertilizer AND PPP are described: copper compounds, phosphonates, diammonium phosphate (basic substance), algae extracts and even some *bacillus* spp. This consideration should be deleted from this table otherwise it would be a pure discrimination against this comfrey steeping BSA application.	Addressed: This is a risk management issue.

3.2. Effects on harmful organisms or on plants

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application
3(2)	3.2.1.1	DE: Most of the literature cited under the headline "fungicidal activity" is irrelevant for the intended uses. Only one study (Karavaev et al. (2001)) describes fungicidal effects of comfrey extract. The others relate to either another Symphytum sp. (Kartal et al. 2001), bacteria, pathogenic to humans (Sumathi et al., 2011) or an ineffective extract (Carvalho et al., 2011).	DE: The relevance of the literature cited for the application should be explained.	Chapter §3 modified	Addressed: Only one study (Karavaev et al., 2001) describes fungicidal effects of comfrey extract. See also comment 1(1)
3(3)	3.2.1.2	DE: No data were provided for insectifuge effects on aphids. In the only study related to a repellent effect on insects no results are listed concerning comfrey. The only study concerning aphids describes aphidicidal effects.	DE: Please provide data or correct.	Chapter §3 modified	See comment 1(1)

3.3. Usefulness in the framework of plant protection

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application

No comments.

3.4. Summary of intended uses

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application
3(4)	3.4 summary of intended uses (GAP table), page 18	NL: The summary of intended uses (gap table) is hard to interpret as the concentration of active in the formulation is variable. This is usually not possible as the formulation is assumed to be non-variable within a GAP table. (Dilution should be handled in the water volume/ha column not by changing the formulation).	GAP should be clarified.	GAP Clarified	Addressed: The GAP table was updated in the updated submission (ITAB, 2019).
3(5)	3.4 summary of intended uses (GAP table), page 18	NL: The information above the GAP table is missing (information about the active etc). it is not clear how the active is defined. It appears that relevant information is present earlier in the DRR in "paragraph 2.5 (description of the recipe for the product to be used) however this is not referenced.	GAP should be clarified.	GAP Clarified	See data gap 2(8)

3.4. Summary of intended uses

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application
3(6)	3.4.1	DE: According to the GAP table it is planned to use the "comfrey steeping" as plant strengthener providing protection against fungi. If this is the mode of action it would be sufficient to register "comfrey steeping" as plant strengthener and not as basic substance. In Chapter 3.2.1.1 only one study is cited concerning inhibitory effects on fungi. In this study direct fungicidal activity and increased resistance against *Erysiphe graminis* and *Puccinia graminis* on wheat is described.		Regulatory misunderstanding of DE M.S.: 1. Plant strengthener is a mode of action of the substance as plant protection substance, 2. basic substance is a status defined by Article 23 of Reg. 1107/2009	See comment 1(1) See also comment 3(3)
3(7)		DE: No data concerning effects on other fungal diseases are provided.	DE: Please provide data about useful effects against fungal diseases on fruit trees, grass and vegetables or discuss why you think that comfrey is useful for the intended uses.	No data, initial applicant is closed	Data gap: Applicant to submit studies, literature data to support the intended uses.
3(8)		DE: In vegetables the application of the "comfrey steeping" is planned as watering of the seedlings. According to the cited paper of Karavaev et al. (2001) watering of plants is	DE: Please discuss why you recommend an application in the form of watering.	No data, initial applicant is closed	See data gap 3(7)

3.4. Summary of intended uses

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application
		less effective in terms of plant protection than direct spraying.			
3(9)	3.4.1. GAP table	DK: It seems there may be an error in total rate for vegetables (the number 327.5 seems odd here).		GAP Clarified	Addressed: GAP table was updated.
3(10)	3.4.1. GAP table	DK: What is meant by "France MS Not relevant"? If the basic substance is only meant for France, then simply put "France only". Basic substances are generally meant for all of EU , and both amateur and professional users.		Corrected to All M.S.	Addressed: GAP table was updated.
3(11)	3.4.1. GAP table	DK: Regarding the growth stage for all uses. Please explicitly exclude flowering growth stages, as the risk to bees cannot be excluded based on the proposed risk assessment in this report.		Warning sentence added	Addressed: The warning remark was added to the GAP table.
3(12)	3.4.1 GAP table, p.18	EFSA: probably a typo in the total rate in vegetables: 1.875 kg/ha x 2 =3.75 and not 327.5		GAP clarified	Addressed: The GAP table was updated.

4. Classification and labelling of the substance

Classification and labelling of the substance					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
4(1)	2.1.1.	DK: What is the approximate concentration of the various components in the liquid after maceration and steeping? Please clarify since some of the components may be toxic it is nice to have an idea about the levels.	EFSA: Applicant to clarify the level of different compounds expected to be found in the product, in particular the compounds of toxicological concern such as PAs.	Usages amount as plant protection substance is less than fertilizer rate.	Since the content of toxicologically relevant compounds in the product is unknown, a quantitative risk assessment cannot be performed for Comfrey steeping. See also 4(2)
4(2)	Classification and labelling	EFSA: the pyrrolizidine alkaloids concentration in the sprayed dispersion may reach concentrations of approx. 0.06 g/l. Has this any toxicological relevance?		See fertilizer amounts at 50 kg/ha rate	See 4(1)

5. Impact on Human and Animal Health

5.1. Toxicokinetics and metabolism in humans

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application

No comments.

5.2. Acute toxicity

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application

No comments.

5.3. Short-term toxicity

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA		Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application

No comments.

5.4. Genotoxicity

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application
5(1	p. 27-28	DE: Genotoxicity (mutagenicity) of Comfrey steeping (Symphytum officinale L. maceration) can be considered as established.	DE: Genotoxic, no threshold established.	Do you know these properties and you continue to declare as the responsible MS the same substance as a Pflanzenstärkungsmittel without any restrictions? https://www.bvl.bund.de/SharedDocs/Downloads/04 _Pflanzenschutzmittel/PflStM_liste.pdf?__blob=publicationFile&v=100	Comfrey steeping application refers to pesticide use and has to be assessed as such and according to the relevant legislation. Since a genotoxic (and carcinogenic) potential is presumed for Comfrey steeping, no toxicological reference values can be established and a non-dietary exposure risk assessment cannot be conducted. See also 1(4), 5(2, 3, 4, 6, 7, 8, 9, 10, 11)

5(2	5.4.2	DK: It seems that comfrey has been observed to be mutagenic in rat according to (EFSA Panel on Contaminants in the Food Chain (CONTAM); Scientific Opinion on Pyrrolizidine alkaloids in food and feed. EFSA Journal 2011; 9(11):2406. [134 pp.] doi:10.2903/j.efsa. 2011.2406. Available online: www.efsa.europa.eu/efsajournal). Please justify if these effects are not relevant for the active substance. Please explicitly state whether or not this substance is expected to be a basic substance in accordance with Article 23 1b (regarding inherent properties) and why.		Comfrey is sold in some M.S. without any restrictions! https://www.bvl.bund.de/SharedDocs/Downloads/04 _Pflanzenschutzmittel/PflStM_liste.pdf?__blob=publicationFile&v=100	See 5(1)

5.5. Long-term toxicity

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application
5(3)		DK: Comfrey is described as genotoxic and may contain carcinogenic constituents. Please consider if a risk assessment could be warranted, and if this substance is expected to be a basic substance in accordance with Article 23 1b (regarding inherent properties).		Comfrey would be not acceptable as basic substance but allowed in fertilization/biostimulation? Same EU, different rules everywhere, depending on national allowances…	See 5(1)

5.6. Reproductive toxicity

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application

No comments.

5.7. Neurotoxicity

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 4 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application

No comments.

5.8. Toxicity studies on metabolites

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application

No comments.

5.9. Medical Data: adverse effects reported in humans

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application
5(4)	5.9	EFSA: Consumption of comfrey has been linked to human fatalities, and internal use is not recommended due to its content of hepatotoxic pyrrolizidine alkaloids (PAs). Its use is particularly contraindicated during pregnancy and lactation, in infants and patients with kidney or liver diseases. The genotoxic carcinogenic potential of PAs seems to be well established. Accordingly, unless it can be demonstrated that the plant parts used as PPP are devoid of PAs, safe uses cannot be established.		Answers may be found in application data as a Pflanzenstärkungsmittel in DE without any restrictions. Resellers are F. Schacht GmbH & Co. KG; Bültenweg 48 DE-38106 Braunschweig	It cannot be excluded that Comfrey steeping contains genotoxic and carcinogenic components, accordingly a proper risk assessment needs to be conducted. See also 1(4), 5(1, 5, 6, 7, 8, 9, 10)

5.10. Additional Information related to therapeutic properties or health claims

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application
5(5)	5.10	EFSA: topical uses of comfrey are reported related to therapeutic properties of the plant, however in this case, risk/benefit considerations can be made, which would not be the case for its use as PPP.		Topical uses are only described for chapter 5.10. (Medicinal uses).	See 5(4)

5.11. Additional information related to use as food

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application

No comments.

5.12. Acceptable daily intake, acute reference dose, acceptable operator exposure level

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application
5(6)	p. 35	DE: Considering the known genotoxic (mutagenic) properties of Comfrey steeping (Symphytum officinale L. maceration), the indications for carcinogenicity (even though EFSA Panel could not conclude) and the absence of an established threshold, no safe dose can be established. I.e. ADI and AOEL values cannot be supported.	DE: Unless exposure can be excluded, it is not possible to conclude safe use.	Objection / criticism / comment rejected: comfrey extract is one of the authorized Pflanzenstärkungsmittel in Germany without restriction and contravenes plant protection regulation 1107/2009 as a plant strengthener! So it must be safe ???	See 5(1, 4)

5.13. Impact on human and animal health arising from exposure to the substance or impurities contained in it

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application
5(7)	5. Toxicology	NL: The toxicological properties of comfrey are predominantly based on PA while there are a lot of other substances present in comfrey. Please explain.		Complex plant extract not fully characterised although sold as fertilizer and plant strengthener without restriction.	See 5(1, 4)

5.13. Impact on human and animal health arising from exposure to the substance or impurities contained in it					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
5(8)	5. Toxicology	NL: Veno-occlusive disease (VOD) could be caused by comfrey and oral exposure seems to be more dangerous than topical exposure. Derivation of threshold limits seems to be necessary. In case threshold limits are based on PA please explain why PA could be used as marker. Could PA be measured in crops? Is the concentration of PA in comfrey specified as one value?		Complex plant extract not fully characterised although sold as fertilizer and plant strengthener without restriction.	See 5(1, 4)
5(9)	5.Toxicology	NL: The following is described "While the most sensitive animals comfrey seem to be pigs, poultry and rats, some species such as sheep, goats or small herbivores such as rabbits, hamsters or mice seem insensitive see resistant to this kind of poisoning. This sensibility depends to the ability of the enzyme arsenal		Comfrey leaves are eaten as food and used in medicinal products.	See 5(1, 4)

5.13. Impact on human and animal health arising from exposure to the substance or impurities contained in it					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
		possessed by the animal to detoxify pyrrolizidine alkaloids, namely those present in comfrey. This review following emphasizes crucial aspects of PA toxicity, and suggests that comfrey might not be as dangerous to humans as current restrictions indicate. " However, it is not clear based on what information this conclusion is drawn? Please include the data really showing that comfrey is not dangerous. To our knowledge only a quantitative risk assessment using toxicological thresholds based on toxdata on comfrey or in case PA (in case PA could be used as marker, see previous comment) could exclude non safe use. Both for the operator, workers,			

5.13. Impact on human and animal health arising from exposure to the substance or impurities contained in it					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
		bystander/residents and consumers. The Australian New Zealand Food Safety Authority (ANZFSA) already proposed a provisional tolerable daily intake (PTDI) of PAs in a dose of 1 µg/kg b.w. per day.			
5(10)	5. Toxicology	NL: It is described that topical application of comfrey is not expected to give adverse effects. Please address this point more carefully and explain whether risks due to dermal exposure and inhalatory exposure can be excluded. Perform a risk assessment if adverse effects are observed and exposure is expected. a.o. please show more data on dermal absorption and inhalatory absorption values.		Reference explicated in the updated BSA. More references provided on wound topical uses.	See 5(1, 4)

5.13. Impact on human and animal health arising from exposure to the substance or impurities contained in it					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
		Please proof that also for these exposure routes the toxicological properties of PA can be used for the quantitative risk assessment for comfrey.			
5(11)	p.36	DE: A quantitative assessment of the exposure level of operator, worker, bystanders and residents to pyrrolizidine alkaloids from the application of comfrey and a comparison with the acceptable daily uptake is needed to demonstrate a safe use.		Objection / criticism / comment rejected: comfrey extract is one of the authorized Pflanzenstärkungsmittel in Germany without restriction and contravenes plant protection regulation 1107/2009 as a plant strengthener! So it must be safe ???	See 5(1)

6. Residues

Residues					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
6(1)	6. Residues	NL: In chapter 9, the following is described: '*if comfrey is consumed punctually and/or a short period and small quantity it doesn't present damage for human and animal health'*. Comfrey is being used on fruit and vegetables, when the consumable part of the crop is present. Therefore, it is not clear whether it can be concluded that no or only little residues of comfrey are still present at the consumable part of the crop, and whether there is subsequent consumer exposure to these residues. This seems to be relevant information based on the conclusion in chapter 9.	Refer to 6(3)	Are residues considered by DE as Pflanzenstärkungsmittel? Why this should be only considered in the plant protection regulation. Concurrence distortion?	Refer to 6(3)

Residues					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
6(2)	6. Residues	NL: It is mentioned in the conclusion of chapter 6 that the potential residues on crops and in animal products resulting from the application of comfrey are considered negligible. However, it is not clear based on what information this conclusion is drawn? Please include the data showing that residues are negligible compared to natural exposure.	Refer to 6(3)	Fertilizing uses at higher rate, no health hazard considered.	Refer to 6(3)

Residues

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application
6(3)	p. 37	DE: While background exposure for the pyrrolizidine alkaloids (PA's) is well investigated and appropriately referenced, no information is provided on the likely residue and exposure levels from the intended use of comfrey. This is a minimum requirement expressed in SANCO/10363/2012 rev.9. Given the strong concerns about pyrrolizidine alkaloids and the publicly available BMDL10/MOE risk assessment, exposure concerns need to be addressed. At least a theoretical derivation of expected residue levels of the pyrrolizidine alkaloids and intake assessment should be provided.	A quantitative assessment (estimates) or measurements of the concentrations of pyrrolizidine alkaloids remaining in pollen of fruit trees and on the consumable parts of fruits and vegetables **treated with comfrey steeping according to the proposed GAP** should be provided. On this basis, the possible dietary exposure of consumers to pyrrolizidine alkaloids should be assessed and compared to background exposure reported and/or to applicable toxicological reference levels. According to the literature submitted, the difference between exposure levels that may be of no concern (or beneficial), or levels that could present a risk for humans is narrow. Even if it is stressed	Objection / criticism / comment rejected: comfrey extract is one of the authorized Pflanzenstärkungsmittel in Germany without restriction and contravenes plant protection regulation 1107/2009 as a plant strengthener! So it must be safe ???	An appropriate consumer dietary exposure assessment was not presented in the application. When comparing to other products on the market (fertilizer, strengthener) as suggested by the applicant, it should be born in mind that exposure is the key factor that makes the difference between hazard and risk. The risk must be assessed for the specific uses submitted in this application and the safety assumption is not extrapolable between different use scenarios without submitting any information substantiating the individual cases. Fertilizers are usually applied to the soil, not directly on the edible fruit and vegetable commodities as requested in

			that concentrations of pyrrolizidine alkaloids are higher in the roots, their occurrence in the leaves is also reported and not excluded. Therefore, a proper consumer risk assessment is triggered.		the application under assessment. In terms of plant strengtheners, for the placing on the market in Germany the notified uses must have met the following requirements: When **used correctly and for their intended purpose**, plant strengtheners must not have any harmful effects on human and animal health or groundwater or any other unacceptable effects, in particular on the environment. For the current application, the applicant should have also demonstrated **that for the specific uses requested within this application as PPP** consumer exposure will not result in a situation of dietary risk. According to the requested GAP the product is proposed to be used on fruit and vegetables when the consumable part of the crop is present, however, evidence (e.g. calculated or measured levels of possible residues) was not submitted demonstrating that residues on edible crop

Residues					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
					parts are indeed negligible following the proposed applications. An evaluation of the relevance of compounds contained in Comfrey steeping (pyrrolizidine alkaloids, triterpens, tannins, phenolic acids etc) for consumer dietary exposure and consumer health and specific to the requested uses was not submitted.
6(4)	p. 12	DE: Moreover, it should be kept in mind that based on above considerations monitoring methods might be required for the determination of pyrrolizidine alkaloids.	The suitability for use in routine monitoring of the earlier reported analytical methods for the determination of pyrrolizidine alkaloids should be discussed and maybe additional validated analytical methods should be searched for and proposed.	Objection / criticism / comment rejected: comfrey extract is one of the authorized Pflanzenstärkungsmittel in Germany without restriction and contravenes plant protection regulation 1107/2009 as a plant strengthener! So it must be safe ???	Refer to 6(3)

Residues					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
6(5)	6. Residues	EFSA: The GAP table indicates application of comfrey steeping is possible to fruit trees before flowering to late crop stages. Thus, potential residues of PA's in pollen and bee products should be addressed in view of the toxicological concerns identified for PA's and the risk for vulnerable consumer groups already identified related to the consumption of honey collected from plants naturally containing PAs (EFSA, 2015)[2]. Enrichment of PAs in the environment due to application of comfrey steeping to e.g. fruit trees that normally don't contain PAs and the importance of fruit tree flowers for bees is expected to increase concentrations of PAs in honey and therefore the risk for some consumer groups even	Refer to 6(3)	See above	Similarly, as presented under 6(3), the applicant did not provide information that would permit any estimates or conclusions regarding residues, specifically of pyrrolizidine alkaloids, that could potentially remain in pollen and transferred to honey after the use according to the proposed GAPs.

[2] Mulder PPJ, López Sánchez P, These A, Preiss-Weigert A and Castellari M, 2015. Occurrence of Pyrrolizidine Alkaloids in food. EFSA supporting publication 2015:EN-859, 114 pp.

Residues					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
		further. Further information and assessments are necessary.			
6(6)	6. Residues	EFSA: All argumentation submitted in the application regarding residues relevant to consumers is on pyrrolizidine alkaloids while comfrey steeping contains several other compounds as presented in the composition tables in chapter 2.1 of the application and e.g. in the publication by Recurt-Carrere, 2015. The relevance of residues for consumers of these compounds should also be discussed to complete the assessment of comfrey steeping uses as PPP.	An evaluation of the relevance of other compounds contained in comfrey steeping (triterpens, tannins, phenolic acids etc) for consumer dietary exposure and consumer health should be submitted. Similarly to the request in 6(3) the concentrations on fruit and vegetables upon treatment of the crops with comfrey steeping according to the proposed GAP should be estimated/ calculated/ measured, whatever is appropriated and compared to natural background levels in the crops of concern. As a next step exposure estimates could be provided and compared to reported exposure from other dietary sources.	Why these consideration are not taking in account in some M.S. where comfrey is freely allowed?	An evaluation of the relevance of compounds contained in Comfrey steeping besides pyrrolizidine alkaloids such as triterpens, tannins, phenolic acids for consumer dietary exposure and consumer health was not submitted. The applicant failed to demonstrate **that for the specific uses requested within this application** consumer exposure will not result in a situation of dietary risk. See also 6(3).

7. Fate and Behaviour in the environment

7.1 Fate and Behaviour in the environment					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
7(1)	7	NL: it would be helpful to have the text proofread by a native English speaker.		No money was allowed to such proofread	Addressed.

7.2 Estimation of the short and long-term exposure of relevant environmental media (soil, groundwater, surface water)					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
7(2)	7.2	NL: To address the exposure of the environmental compartments, a comparison between application rates and natural occurrence of comfrey can be used.	The maximal application rate is 5.4 kg comfrey leaves per hectare per year. The amount of comfrey leaves naturally occurring per hectare is expected to be higher (in the appropriate habitat). The exposure of soil and groundwater due to the use of comfrey steeping is therefore likely to be lower than the natural exposure. For the exposure of aquatic systems, also a comparison could be made between natural exposure of aquatic systems and the exposure due to the use of comfrey steeping. The exposure of aquatic systems is highest for the use in fruit trees against common fungi (although it is unclear from the GAP table if the application method is upwards or downwards spraying). The input	Fertiliser uses at higher rates. Typically at 50 kg/ha.	An appropriate environmental exposure assessment was not available in the application.

7.2 Estimation of the short and long-term exposure of relevant environmental media (soil, groundwater, surface water)					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**
			to aquatic systems could be compared to the natural input of comfrey leaves (for example when degrading in autumn) – e.g. by extrapolating from the occurrence of comfrey on banks of rivers and drainage ditches.		
7(3)	7.2	EFSA: A satisfactory consideration of the environmental exposure coming from the requested uses is not available. Therefore, EFSA concurs with the comments made by the NL in column 2 and 3 in the row above.	See proposal of the NL in column 3 of the row above.		See comment 7(2).

8. Effects on non-target species

8.1. Effects on terrestrial vertebrates

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application
8(1)	8.1 8.1.1. Birds and mammals	DK: It may be that livestock and zoo animals are fed this plant; however, this is not relevant when regarding the risk to non-target vertebrates from the proposed use as spray in crops. The level of exposure is not comparable, and not covered by the use in feed for larger animals. Please provide an appropriate qualitative (or quantitative) risk assessment for actual non-target vertebrates in the sprayed fields in EU/France.			Data gap No further data have been submitted by the applicant, therefore a risk assessment for birds and wild mammals cannot be performed.

8(2)	Overall Vertebrates	DK: The applicant lists many references, please write some evaluation text so that the reader of this report can follow whether the applicant sees the risk to non-target vertebrates as acceptable or not. The overall message of the chosen references is confusing; is the substance toxic or not, and is the toxicity a risk for non-target organisms from the proposed use as spray application in crops?			The applicant did not add any text to explain their view and evaluation of the available literature.
8(3)	8.1.2.	DE: Pyrrolizidine alkaloids are hepatotoxic, genotoxic and carcinogenic. Symphytum officinale can have negative effects on herbivorous animals. The submitted data are not suitable to assess possible effects of the intended uses of Symphytum officinale on wildlife mammals.		Objection / criticism / comment rejected: comfrey extract is one of the authorized Pflanzenstärkungsmittel in Germany without restriction and contravenes plant protection regulation 1107/2009 as a plant strengthener! So it must be safe ???	See comment 8(1)

8(4)	8.1	EFSA: Since some of the studies provided are not in English, please kindly provide a more detailed summary of these studies.		Done as much as possible.	Noted
8(5)	8.1.2 mammals	EFSA: Comfrey is fed to livestock. For wild mammals it is reported that some species can ignore it (gorillas), while for other species that ingest it (bonobo, boar) no data on the amount ingested and on the possible negative effects are presented. Therefore, it is not possible to compare the amount ingested with the possible exposure level to comfrey steeping sprayed in fields and it is not possible to conclude on the absence of toxic effects for wild mammals.		More references added.	See comment 8(1)

8(6)	8.1	EFSA: The toxicity of comfrey is due to its pyrrolizidine alkaloid constituents. More information on the effects of these molecules on birds and mammals are necessary to assess the potential risk of comfrey steeping sprayed in fields.	EFSA: Provide more studies on the effects of pyrrolizidine alkaloid on wild birds and mammals.	More references added on mammals.	See comment 8(1)

8.2. Effects on aquatic organisms

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application
8(7)	Ibid.	DE: The submitted study is not sufficient for an assessment of effects of Symphytum officinale on aquatic organisms.		Objection / criticism / comment rejected: comfrey extract is one of the authorized Pflanzenstärkungsmittel in Germany without restriction and contravenes plant protection regulation 1107/2009 as a plant strengthener! So it must be safe ???	Data gap No further data have been submitted by the applicant, therefore a risk assessment for aquatic organisms cannot be performed.

8(8)	8.2 zebrafish	DK: The study by Cheng et al 2014 is not useful in this context. However, if the applicant could provide what the concentration of the test water for the tested fishes, and then compare that concentration with the concentration predicted from the proposed use (PECsw), then a sort of risk assessment could be performed/argued. As the proposed uses are expected to have spray drift to the aquatic environment, please provide an appropriate qualitative (or quantitative) risk assessment for the proposed use.		[C] is 100 ppm.	Data gap The applicant added the information on the concentration used in the test, however this is not compared to the PEC and a risk assessment has not been qualitatively or quantitatively performed.
8(9)	8.2 zebrafish	EFSA: The toxicity of comfrey is due to its pyrrolizidine alkaloid constituents. In this study the extract of comfrey leaves was purified to remove to pyrrolizidine alkaloids, therefore it does not provide any useful information on the toxicity of comfrey extract.			See comment 8(7)

8.3. Effects on bees and other arthropods species

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application
8(10)		DE: Fruit tree treatments are recommended during pre-flowering stages. Comfrey contains pyrrolizidin alkaloids which may contaminate the flowers and be transmitted to honey by the bees. This may make the honey unsuitable for human consumption.	DE: Please provide data how it can be avoided that pyrrolizidine alkaloids are transmitted to the honey and produce a honey unsuitable for human consumption.	Objection / criticism / comment rejected: comfrey extract is one of the authorized Pflanzenstärkungsmittel in Germany without restriction and contravenes plant protection regulation 1107/2009 as a plant strengthener! So it must be safe ???	No further data have been provided by the applicant, therefore it is not possible to prove that honey produced by bees does not contain PAs.
8(11)	8.3.1	DK: The fact that comfrey is attractive to bees etc. is not relevant for the risk assessment of the spray application of the extract of the plant on flowering crops. Please provide an acceptable risk assessment for bees from the proposed use in crops, including flowering, or as a minimum restrict the proposed use to not include flowering crops.		No EOPP test results available	Data gap No further data have been submitted by the applicant, therefore a risk assessment for bees cannot be performed. The risk can be excluded if the substance is not applied during the flowering period or in the presence of flowering weeds.

8(12)	8.3.1	DK: The information of the potential toxic honey is not relevant here. However it is not clear it this information would be relevant for the human health section.			See comment 8(10)
8(13)	8.3.2	DK: How is it relevant in this context to state, that ladybirds are not attracted to the extract? If a field is sprayed, we want to know, that the ladybirds already present will not be at an unacceptable risk.			Data gap No further data have been submitted by the applicant, therefore a risk assessment for non-target arthropods other than bees cannot be performed.
8(14)	8.3.2	DK: The reference Pickett et al 1998 would be more appropriate for efficacy evaluation than risk assessment of non-target arthropods. The reference state, that comfrey plants has fewer arthropods than other plants in general. Especially as the use is as an insecticide, please perform a relevant qualitative (or quantitative) risk assessment for the proposed use.			See comment 8(13)

8(15)	8.3.1	EFSA: The information provided is only related to attractiveness of comfrey flowers to bees and not on the effects of comfrey steeping. However, since Pyrrolizidine alkaloid (PA) are probably present also in pollen and nectar, a measurement of their level and a comparison with the amount of PA present in the comfrey steeping could give some information on the tolerance of bees to exposure to PA.			See comment 8(11)
8(16)	8.3.1	EFSA: Since comfrey flowers are attractive to bees, it should be confirmed if also comfrey steeping sprayed in field is attractive. In this case, if it is sprayed on flowering fields, bees can be attracted and can feed in fields that are normally not attractive to bees.			See comment 8(11)

8(17)	8.3.2	EFSA: Most of the reported papers are related to the presence of insect species on comfrey leaves and only few species fed on comfrey (beetles and Scarlet tiger moth caterpillar). Since the other species appear to avoid comfrey, it would be preferred to test the effects of comfrey steeping sprayed on these species.			See comment 8(13)

8.4. Effects on earthworms and other soil macroorganisms

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application
8(18)	8.4	DK: Please clearly argue and conclude on the risk to earthworms. The applicant text is very sparse.		Used as fertiliser at higher rate.	Further clarification on the potential risk to earthworms has not been added.
8(19)	8.4	EFSA: The positive effects of comfrey on earthworms' presence in soil are supported, however the only data available on other soil macro-organisms are related to the absence of repellent effects on nematodes, without any information on toxicity.			Data gap No further data have been submitted by the applicant, therefore a risk assessment for non-target soil macro-organisms other than earthworms cannot be performed.

8.5. Effects on soil microorganisms

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application
8(20)	Ibid.	DE: If Symphytum officinale can have antibacterial effects, impacts of the intended uses on soil microorganisms can be expected.	DE: Show in an assessment that this impact is negligible.	Impact is negligible, sold in Germany (DE) as Pflanzenstärkungsmittel in without restriction	Data gap No further data have been submitted by the applicant, therefore a risk assessment for soil microorganisms cannot be performed.
8(21)	8.5	EFSA: Agree with DE		A big cleaning must be done in usurpations of uses at EU level	See comment 8(21)

8.6. Effects on other non-target organisms (flora and fauna)

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application
8(22)	Ibid.	DE: If Symphytum officinale can have phytotoxic effects (two studies are cited concerning phytotoxic effects on Triticum and Lactuca sativa), the effects of the intended uses on non-target plants should be clarified.	DE: Show in an assessment that these effects are negligible.	No answer.	Data gap No further data have been submitted by the applicant, therefore a risk assessment for non-target plants cannot be performed.
8(23)	8.6	EFSA: Agree with DE			See comment 8(22)

8.7. Effects on biological methods of sewage treatment

No.	Column 1 Reference to Application Template	Column 2 Comments from Member States / EFSA	Column 3 Proposal by Member States/EFSA on how the application should be updated to address the comment	Column 4 Follow up response from applicant	Column 5 EFSA's scientific views on the specific points raised in the commenting phase conducted on the application

No comments.

9. Overall conclusions with respect of eligibility of the substance to be approved as basic substance

Overall conclusions with respect of eligibility of the substance to be approved as basic substance					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**

No comments.

10. Other comments

Other comments					
No.	**Column 1** **Reference to Application Template**	**Column 2** **Comments from Member States / EFSA**	**Column 3** **Proposal by Member States/EFSA on how the application should be updated to address the comment**	**Column 4** **Follow up response from applicant**	**Column 5** **EFSA's scientific views on the specific points raised in the commenting phase conducted on the application**

No comments.

Appendix B – Identity and biological properties

Common name (ISO)	There is no ISO common name for this substance
Chemical name (IUPAC)	Not relevant, the substance is a complex mixture
Chemical name (CA)	Not relevant, the substance is a complex mixture
Common names	Comfrey steeping (*Symphytum officinale* L. maceration)
CAS No	84696-05-9 (Comfrey extract)
CIPAC No and EEC No	283-625-3 (EINECS)
FAO specification	Not available
Minimum purity	Not relevant Purity is depending on the origin
Relevant impurities	Open
Molecular mass and structural formula	Not relevant, the substance is a complex mixture
Mode of Use	Spray applications, watering of seedlings
Preparation to be used	Dispersible concentrate (DC)
Function of plant protection	Plant elicitor, insect repellent

Appendix C – List of uses

As plant elicitor

Crop and/or situation (a)	Member State or Country	Example product name as available on the market	F G I (b)	Pests or group of pests controlled (c)	Formulation		Application				Application rate per treatment			PHI (days) (m)	Remarks (*)
					Type (d-f)	Conc of a.i. g/kg (i)	Method kind (f-h)	Growth stage and season (j)	Number min max (k)	Interval between applications (min)	kg a.i./hl min max (kg/hl)	Water l/ha min max	kg a.i./ha min max (kg/ha) (l)		
Fruit Trees	All MS	*Symphy*	F	Common fungi	Dispersible Concentrate (DC)	150	Spray	Vegetation early stage after bud break	1 to 3	15	3	400	12	n.a.	
								Pre flowering stages							
Grass								September to end November			1.5	250	3.75		
Vegetables			F G				Seedlings watering	Sewing time	1 to 2		0.75		1.875	3	

* Data are based on raw leaves steeping, divide all by 10 in case of dry leaves steeping

As insect repellent

Crop and/or situation (a)	Member State or Country	Example product name as available on the market	F G I (b)	Pests or group of pests controlled (c)	Formulation		Application				Application rate per treatment			PHI (days) (m)	Remarks (*)
					Type (d-f)	Conc of a.i. g/kg (i)	Method kind (f-h)	Growth stage and season (j)	Number min max (k)	Interval between applications (min)	kg a.i./hl min max (kg/hl)	Water l/ha min max	kg a.i./ha min max (kg/ha) (l)		
Fruit Trees	All MS	*Symphy*	F and/ or G	aphids	Dispersible Concentrate (DC)	150	Spray	from the appearance of aphids *	1 to 6	6	0.6	150	0.9	3	* exclude flowering growth stages, as the risk to bees cannot be excluded
Vegetables															

* Data are based on raw leaves steeping, divide all by 10 in case of dry leaves steeping

(a) For crops, the EU and Codex classification (both) should be taken into account; where relevant, the use situation should be described (e.g. fumigation of a structure)
(b) Outdoor or field use (F), greenhouse application (G) or indoor application (I)
(c) *e.g.* pests as biting and suckling insects, soil born insects, foliar fungi, weeds or plant elicitor
(d) *e.g.* wettable powder (WP), emulsifiable concentrate (EC), granule (GR) etc.
(e) GCPF Codes – GIFAP Technical Monograph N° 2, 1989
(f) All abbreviations used must be explained
(g) Method, e.g. high volume spraying, low volume spraying, spreading, dusting, drench
(h) Kind, e.g. overall, broadcast, aerial spraying, row, individual plant, between the plant – type of equipment used must be indicated
(i) g/kg or g/L. Normally the rate should be given for the active substance (according to ISO)
(j) Growth stage at last treatment (BBCH Monograph, Growth Stages of Plants, 1997, Blackwell, ISBN 3-8263-3152-4), including where relevant, information on season at time of application
(k) Indicate the minimum and maximum number of application possible under practical conditions of use
(l) The values should be given in g or kg whatever gives the more manageable number (e.g. 200 kg/ha instead of 200 000 g/ha or 12.5 g/ha instead of 0.0125 kg/ha
(m) PHI - minimum pre-harvest interval