

Review of the Forest Stewardship Indicators and Thresholds for identifying “Highly Hazardous Pesticides”

GENERAL COMMENTS

| STAKEHOLDER COMMENTS AND PROPOSED CHANGES IN 1 ST PUBLIC CONSULTATION (3 rd June – 3 rd August 2013) | PESTICIDES COMMITTEE FEEDBACK |
|---|---|
| Setting up the Expert Panel was not transparent. | The setting up of the Expert Panel followed normal FSC procedures and the transparency was provided through the publication on FSC webpage and through the public consultation process. |
| Differences between the Expert Panel report and the draft of proposed indicators and thresholds should be identified and explanations and rationale for these differences should be provided. | The existing differences refer to proposals where no consensus was reached by the Expert Panel (See table 1 below). However, the FSC Pesticides Committee considered them sufficiently important to be included in the consulted draft. |
| The Public Consultation period was too short. | The first round of public consultation was 60 days as required in FSC-PRO-01-001 (V3-0) and for the second round we will allow another 60 days. |
| BCPC Pesticide Manual is outdated. | Most toxicological entries in the BCPC Manual do not change from version to version. The BCPC Pesticide Manual has been revised in November 2013 and we will double check our revision against this latest version. |
| Absolute thresholds (“yes or no”) approach is over-simplified and can be unnecessarily restrictive as it neglects the mitigating efforts taken by the forest manager to reduce adverse environmental and social impacts. Mitigation actions should be taken into consideration before listing an ingredient as Highly Hazardous Pesticide (HHP) | Absolute thresholds are a necessity in the classification system. Mitigation efforts are taken into account in the FSC derogation process. These are two different processes in the FSC system. |
| Field research vs. laboratory research results differ substantially: impacts found in laboratory often cannot be verified with field tests. Field trials have also shown the importance and necessity of herbicides like hexazinone to establish and grow new forests. An extensive program of research with flumioxazin has provided evidence that rats are particularly sensitive to the toxic effects of flumioxazin whereas this is unlikely to be the case in humans. | It is not within the scope of FSC to judge or question the methods applied by external parties to develop their highly hazardous classifications. |
| Concerns about the review of the Indicators and Thresholds in isolation of FSC pesticide policies and guides. | The FSC Board of Directors has approved the revision of the Indicators and Thresholds but not a revision of the full policy. |
| Refer specifically to the CAS number of substances | This comment is outside of the scope of this consultation. We will consider it during the update of the HHPs list. |
| Organize face to face workshops at the General Assembly 2014. | We have registered a side event at the General Assembly 2014. |
| Allow blanket derogations for the use of HHPs in accordance with the legal requirements of well-regulated countries such as the United States. | This comment is outside of the scope of this consultation. We will consider it in the review of the derogation procedure. |
| The fact that a molecule is considered HHP does not imply that the use of the active ingredient generates a significant environmental impact. | The hazard is the decisive factor. This is considered in the derogation process. |
| Following parameters should be taken into account by performing a risk assessment: the formulation, dose, frequency, use, mode of application of the active ingredient (AI) and soil type. | It is not within the scope of FSC to judge or question the methods applied by external parties to develop their highly hazardous classifications. |
| The list of 452 products includes complementary and synergistic products that enable, for instance, resistance management of pesticides. It also includes all substitutes to products with approved derogations. | The list has been updated based on the latest scientific knowledge. All inconsistencies with existing derogations will be dealt with in the reapplication process. |
| In Uruguay over 33 pesticides commonly used in forestry, 23 would be included in the proposed HH list; it means that 70% of the products used today would be prohibited. | It is not prohibited, it is restricted. In specific circumstances they can be authorized by the FSC Board of Directors through the issue of a formal derogation. |
| This HHP list trying to avoid the use of pesticides will cause a higher consumption of non-specific pesticides and more exposure time of workers. | This comment is not in the scope of this consultation. |
| The GHS classification is incomplete and not applicable in its current form | The Globally Harmonized System of Classification and Labelling of Chemicals (GHS) forms the basis for the harmonization worldwide of regulations for the classification and labelling of hazardous substances and hazardous goods, and for the worldwide harmonization of the national and regional systems for classification and labelling. Even if still not complete, this is the best available international system. |
| Not to use the GHS to restrict the use of chemical products in the forestry, but for guiding the companies to address safety properly. | GHS list is applied in the same way as other internationally recognized classification systems. |
| FSC should reinforce the pesticide suppliers to provide documentation according to the GHS system to allow the Forestry Companies to use the included information to minimize the negative environmental and social impacts | It is a good idea, but it seems easier that the Organization directly approach their pesticide suppliers for documentation. |

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| Remove these ingredients from the HHPs list: haloxyfop-methyl, oxifluorfen, isoxaflutole, rotenone, borax, fipronil and sulfluramide. | Pesticides are removed if they do not meet the I&T. |
| The legacy of previous chemical exposure/use also needs to be included. | This comment is not relevant for I&T revision. |
| Recognize downstream water users of FSC certified forestry. Determine safety data for native fish and animals for any pesticides and wetting agents prior to their approval in that country. | This comment is outside of the scope of this consultation. These are considerations taken by the technical advisors in the derogation process. |
| Include National Toxics Network (NTN) as a member of the FSC stakeholder group re policy development on pesticides. | This comment is outside of the scope of this consultation but we will take it into account when revising the derogation procedure. |
| New section: Add multidisciplinary approach to water and sediment toxicity rather than outdated single chemical assessment. | This can only be done in the revision of the Pesticides Policy. |
| Latest scientific information regarding the toxicity of pesticides (including immune-toxicity, endocrine disruption effects and epigenetic changes), water and sediment pollution and resultant toxicity, adverse effects of environmental health due to toxic chemicals and mixture effects amongst others and must be included in the FSC pesticide policy and be reflected in Indicators and Thresholds for HH pesticides | The policy is not under revision in this moment. Some of this aspects are already included in the revision of the I&T |
| A new section needs to be added which addresses the toxicity of chemical mixtures within formulations (products vs. active ingredients) and when mixing formulations together. So called inerts and excipients also need to be reviewed re toxicity. | FSC addresses a wide range of I&T covering acute and chronic effect for numerous species groups (mammal, birds, and aquatic vertebrates) as well environmental transport. With the prohibition of the active substances all products containing mixture with those are prohibited. Inert ingredients are often not declared on the label, the CH could not implement a prohibition. |
| New section is needed for Ecosystem services; to address the effects of single and multiple stressors, and develop an approach for the assessment of chemical risk to ecosystem services that consider the whole life-cycle of products and processes | Mixture toxicology cannot be addressed by FSC. That is an unresolved general assessment gap. |

TABLE 1. Differences between the Expert Panel report and the draft 1

| CRITERION | MODIFICATIONS IN CRITERIA | MODIFICATIONS IN INDICATORS | MODIFICATIONS IN THRESHOLDS |
|-----------|---------------------------|-----------------------------------|---|
| 1 | | Added: 'or by inhalation' | Added: 'GHS Hazard Statement H330 "Fatal if (inhaled)' |
| 2 | | | Added: 'd) GHS 2 as classified by national/international authorities or classified as "Suggestive Evidence of Carcinogenic Potential" resp. „Group C--Possible Human Carcinogen“ by the US EPA' |
| 5 | | | Added: 'or 2" |
| 6 | .Added: 'or honey bees' | Added: '2.Toxicity to honey bees' | Modified: a) 'LC50 < 100 µg/l' instead of 'LC50 < 50 µg/l' Added: 'c)If LD50/LC50 (oral or contact < 2 µg/bee (microgrammes per bee)' |
| 9 | | | b) Listed in Annex III of the Rotterdam Convention c) Listed as ozone depleting substance under the Montreal Protocol |

COMMENTS RELATED TO CRITERIA, INDICATORS AND/OR THRESHOLDS

Font Red : Amendments/adding discussed by the Expert Panel

| 1ST DRAFT | | | STAKEHOLDER COMMENTS AND PROPOSED CHANGES IN 1 ST PUBLIC CONSULTATION | PESTICIDES COMMITTEE FEEDBACK |
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| CRIT. | INDICATOR | THRESHOLD | | |
| QUANTITATIVE OR SEMI-QUANTITATIVE | | | | |
| 1. Acute toxicity to mammals and birds | 1. WHO toxicity class (active ingredients) | WHO toxicity class Ia/Ib If acute oral LD50 for rats/birds ≤ 200 mg/kg bodyweight (bw) (for most sensitive mammal/bird) GHS Hazard Statement H330 "Fatal if" | Delete the indicator 'by inhalation' and the threshold GHS Hazard Statement H330 'Fatal if ...' | Although the WHO classification does not consider toxicity via inhalation, the Pesticides Committee considers it to be relevant in situations of aerial spraying in forestry. NOTE: Almost all pesticides with a H330 classification meet also other I&T. |
| | 2. Acute toxicity (oral LD50 for rats/birds or by inhalation) | | Delete: 'If acute oral LD 50 for rats/ birds ≤ 200 mg/kg bodyweight (bw)' Revise LD50 acute oral calculation | This indicator has been in part of FSC I&T for many years and there was no indication that revision was needed. The WHO classification alone is not sufficient to protect human health and the environment. It does not cover all pesticides and it appears it underestimate the real toxicity. |
| | | | There appears to be words missing. It says "Fatal if...." Please provide the full words | This will be corrected. The correct wording is "Fatal if inhaled" |
| | | | Add: H300, H310, H330 | H330 was suggested because inhalative toxicity is not yet considered. H310 and H300 have not been considered as dermal and oral toxicity are sufficiently covered |
| | | | Add indicators for skin and eye irritation or skin sensitization caused by the pesticide. | Skin and eye irritation are usually temporary effects the user of a pesticide might experience. They are usually moderate effects, which seem not to justify a prohibition. |
| 2. Carcinogenicity | 1. Carcinogen or probable carcinogen according to International Agency for Research on Cancer (IARC) or 2. US Environmental Protection Agency (US EPA) or 3. Globally harmonized System (GHS) as classified by national/international authorities. | If listed in any category: a) IARC Group 1: 'The agent (mixture) is carcinogenic to humans', or IARC Group 2A: 'The agent (mixture) is probably carcinogenic to humans'; b) Pesticides which are carcinogenic and probable or likely carcinogenic to humans as classified by the US.EPA. This Applies to pesticides in Categories: "A", "B" (1986 ¹); "Known/Likely" (1996) and "Likely to be carcinogenic" and "Carcinogenic to humans (1999, 2005-current). c) GHS IA and IB for carcinogenicity as classified by national/international authorities. d) GHS 2 as classified by national/international authorities or classified as "Suggestive Evidence of Carcinogenic Potential" resp. „Group C--Possible Human Carcinogen“ by the US EPA | GHS category 2 classification for carcinogenicity or an US EPA "Suggestive Evidence of Carcinogenic Potential" is usually based on 'limited evidence' of an increase in a tumor type that has been observed in a rodents, with no data to prove its relevance for humans. Delete: Criterion 2, Threshold d | It is not within the scope of FSC to judge or question the methods applied by external parties to develop their highly hazards classifications. This will be modified in draft 2. |

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| 3. Mutagenicity to mammals | 1. Mutagenicity classification of Global Harmonized System (GHS) | a) GHS Categories IA and Ib for mutagenicity as classified by national/international authorities. | Add: GHS Categories 1 and 2A | GHS Category 1 is suggested for inclusion. GHS Category 2 does not provide sufficient evidence justifying a prohibition. |
| | | | Should read as: Mutagen or probable mutagen | This will be corrected |
| 4. Developmental and reproductive toxin | 1. Classification for reproductive toxicants of the Global Harmonized System (GHS) | a) GHS Categories IA and Ib for reproductive toxicity as classified by national/international authorities. | Classification for reproductive toxicants of the Global Harmonized System (GHS). Add: reproductive or probable reproductive toxicants | This will be corrected |
| | | | Add: GHS Categories 1 and 2A | GHS Category 1 is suggested for inclusion. GHS Category 2 does not provide sufficient evidence justifying a prohibition. |
| 5. Endocrine disrupting chemical (EDC) | 1. EDC listed and/or classified by the EU | a) If classified as EDC category 1 or 2 by EU | Delete Threshold a: 'or 2' | We will modify this in the second draft |
| | | b) Classified in GHS Category 2 for Carcinogenicity AND Category 2 Reproduction as classified by national/international authorities. | Add thresholds: c.) If included in Endocrine Disruptor Knowledge Base (EDKB) and d.) If included in TEDX list of Potential Endocrine disrupters | This will not be added to draft 2. The Expert Panel considers that the used sources contain more complete and reliable information. |
| 6. Acute toxicity to aquatic organisms or honey bees | 1. Aquatic toxicity (LC50, EC50) 2. Toxicity to honey bees | a) If LC50/EC50 < 100 µg/l (microgrammes per liter) | LC50 < 50 µg/l, not to be changed | The US EPA defines a pesticide as "Very highly toxic to aquatic organisms" at a threshold of 100µg/l. This is a used threshold. |
| | | b) Daphnia as the test organism or other invertebrate or vertebrate aquatic organisms that show greater sensitivity than Daphnia. Acute test duration up to 96 hours. | Delete: Indicator 2. Toxicity to honey bees & Threshold c) LC50 < 2 µg/bee | FSC considers relevant to include this indicator in the revision process. The US EPA defines a pesticide as "Highly toxic to honey bees" at a threshold of <2µg/bee. |
| | | c) If LD50/LC50 (oral or contact < 2 µg/bee (microgrammes per bee) | How will we know if a pesticide/herbicide meets the threshold for C 6? This addition might be a little too restrictive and not easy to follow. Clarify C6 | FSC will provide a list with the HHPs that meet the I&T. We do not expect our Certificate Holders or Certification Bodies to evaluate the pesticides. |
| | | | Add: I Acute and chronic toxicity to aquatic organisms or toxicity to honey bees. | FSC already considers bioaccumulation and acute toxicity to aquatic organism, which describe the chronic hazard sufficiently. The toxicity to honey bees is already part of the revision process. |
| | | | Add the following I&T: a) If classified in GHS as Category 1 acute aquatic toxicity H400 (R50) b) if classified in GHS as Category 1,2 a chronic aquatic toxicity: H410, H411 (R51) | The GHS acute aquatic is based upon the LD50 of fish and Daphnia and the GHS chronic aquatic toxicity presents combination of LD50 and bioaccumulation (BCF). All of them are already considered by FSC. |
| | | | It is necessary to minimize pesticides impacts on bees and other pollinators, because they play a key-role in the forest ecosystems. | An indicator for bee toxicity has been proposed. |
| | | | Consider algae and plants as indicator organisms because these are the first step of the food chain. | Acute toxicity to algae could be considered as an additional indicator, but cannot replace Daphnia or other organism. |
| | | | Systemic pesticides are known to be toxic for bees, even at low doses. Add : Criterion 6, Indicator 2 d) If classified as a systemic pesticide | Systemicity describes only the translocation of a pesticide in the plant, but not the toxicity. Non-toxic and toxic pesticides would be prohibited likewise. Therefore thresholds |

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| | | <p>Replace: Criterion 6. Acute toxicity to aquatic organisms or honey bees by: 6. Acute toxicity to aquatic organisms, honey bees and other pollinators</p> <p>Replace Criterion 6: Indicator 2. Toxicity to honey bees By : 2. Toxicity to honey bees and other pollinator species</p> | <p>Leaf-eating caterpillars become pollinating butterflies as adults – any control (by toxic or less toxic means) would be prohibited by such a wide definition, furthermore data of pesticide' toxicity for "other pollinators" which are no pests are not available on a sufficient scale and therefore any indicator/threshold could not be backed up.</p> |
| 7. Persistence in soil or water and Soil sorption potential. | 1. Half-life in soil or water (DT50) | a) If 'persistent' (DT50 ≥ 90 days) and combined with: | <p>A long half-life in soil (an indicator for persistence) increases the probability of leaching and run-off, and 90 days are a common threshold.</p> <p>It is not possible to incorporate local condition in international "policy" – environmental fate of pesticides is extremely complex. The FCS I&T aim to prevent offside movement of pesticides, therefore the water-half-life is not considered.</p> <p>The revised derogation procedure will allow the involvement and consideration of national aspects.</p> <p>The leaching potential is calculated by scientists and governmental agencies incorporating these three parameters. Pesticides very frequently detected in waters have a high solubility and a low Koc. A long half-life in soil (an indicator for persistence) increases the probability of leaching and run-off.</p> <p>There is no "entry criterion" FSC looks at all I&T at the same time, which is quite important when it comes to decisions regarding derogations.</p> <p>Water solubility (S) and Koc describe the mobility sufficiently</p> |
| | 2. Soil sorption coefficient (Koc) | - EITHER low Koc (< 300ml/g) | |
| | 3. Water solubility (S) | -AND/OR high water solubility (> 30mg/l). | |
| | | <p>C7 t(a) PAN HHP criteria says : 'Very persistent' according to REACH (half-life > 60 d in marine- or freshwater or half-life > 180 d in marine or freshwater sediment)</p> <p>C7 t(a) Why does your criteria say 'if persistent (DT50 ≥ 90 days)?</p> <p>Please justify the values chosen including allowing for temperature variations in environments which means that pesticides degrade in the environment differently with occasionally greatly differing t1/2 depending on ambient temperatures eg simazine in Tasmania</p> <p>Just because a pesticide has a low soil sorption coefficient (Koc), is highly soluble, or has a long half-life, does not mean that there is a significant threat to contaminate water.</p> | |
| | | <p>Criterion 7 to be considered as an entry criterion and its non-attendance lead to the analysis of the criteria one, four, five, six and eight.</p> <p>Indicators missing. Add indicators for the mobility of the pesticide in soil</p> | |
| 8. Bio-magnification, bio-accumulation | 1. Octanol-water partition coefficient (KOW) or 2. bio-concentration factor (BCF) or 3. bio-accumulation factor (BAF) | <p>a) If BCF ≥ 1000 or if KOW > 1000 i.e. logP (KOW) > 3</p> <p>b) BCF data supersede logP (KOW) data.</p> | <p>(a) PAN HHP criteria says: 'Very bio accumulative' according to REACH (BCF >5000)</p> <p>C8 T (a) Please justify the value FSC has chosen.</p> <p>This threshold has not changed in the revision. The panel of experts did not find any new scientific evidence to modify this threshold.</p> |
| 9. International legislation | 1. Regulated by international agreement | <p>a) If banned by international agreement under the POP convention</p> <p>b) Listed in Annex III of the Rotterdam Convention</p> <p>c) Listed as ozone depleting substance under the Montreal Protocol</p> | <p>(a) (b) (c) You need to refer to the Conventions by their full titles not just "POP convention".</p> <p>This will be done</p> |



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| 10. Dioxins (residues or emissions) | 1. Equivalents of 2,3,7,8-TCDD a) If contaminated with any dioxins at a level of 10 part per trillion (corresponding to 10 ng/kg) or b) greater of tetrachlorodibenzo-p-dioxin (TCDD) equivalent, or c) if it produces such an amount of dioxin[s] when burned. | No comments received. | |