Commission's revision of the bee guidance,

Ten reasons why the approach chosen is wrong.

1. INTRODUCTION.

Bee Guidance 2013 based on current scientific knowledge.

The majority of EU member states rejected the EFSA Bee Guidance from 2013[1] for no other reason than scaremongering of industry. The EFSA Guidance was based on the scientific insights at that time and defined the 'negligible exposure' to protect bees to unacceptable effects of pesticides, just like the Regulation required them to do[2]. Literature data indicated that negligible exposure resulted in 3,5% bee mortality/day and small effects at 7% mortality. EFSA allowed up to small effects at a level of 7% mortality (the data were on foragers, for undefined reason the 7% was widened to 7% colony size reduction). This is already a present to industry that is allowed to disregard toxic effects of its pesticides up to 7% above the control in chronic 10-day testing.

Science substituted by emotions.

Based on industry scaremongering, claiming that a large majority of pesticides would be banned if the Bee Guidance would be applied[3], EU Member States embraced industry's proposal for an alternative and started arguing for wider 'background mortality' levels to be taken into account. While Member States kept on blocking EFSA's Guidance, Commission decided in the end to mandate EFSA[4] for a revision of the bee guidance and forced them to include "realistic bee keeping practices and natural background mortality". In meetings behind closed doors in the first half of 2020, EFSA presented 4 options[5] for Member States and in the end a majority (several MS opposing) made its choice for "Approach 2". All without involving stakeholders nor EFSA's PPR-panel.

Unlimited 'acceptable' decrease of the size of bee colonies included in the new approach.

Approach 2 is a weird system based on "% background variability in honeybee colony size" (BVB abbreviated here), claimed to be the 'natural' variability of colonies. The legal threshold will be derived from this BVB. The BVB will be calculated with the model BEEHAVE. An 'illustrative example' (Appendix C, A4) produced by EFSA with BEEHAVE[6] shows that the BVB can lead to massive 'acceptable' decreases

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[1] https://www.efsa.europa.eu/en/efsajournal/pub/3295

[2] Art. 4.3.e.iii "no unacceptable effects on the environment, having particular regard to "its impact on biodiversity and the ecosystem " and Annex II, 3.8.3.: "will result in a negligible exposure of honeybees, or has no unacceptable acute or chronic effects on colony survival and development, taking into account effects on honeybee larvae and honeybee behaviour"

[3] www.ecpa.eu › sites › default › files › document_policy

[4] https://www.efsa.europa.eu/en/press/news/190508

[5] See 'supporting document', https://www.efsa.europa.eu/en/news/pesticides-and-bees-evidence-mortality-rates-reviewed

[6] https://www.efsa.europa.eu/en/news/pesticides-and-bees-evidence-mortality-rates-reviewed

of colony size (adult bees), even up to 100% in different scenarios across Europe. Member States in the Standing Committee will get the opportunity to choose for a 'percentile' of the BVB, the alleged "protection level". If Member States for instance make a choice for 10th percentile, EFSA demonstrates an 'acceptable' decrease of colonies (adult bees) of 20%, 60% and 100% (= zero protection) in the three scenarios chosen in the example.

Why the secrecy?

EFSA and Commission (DG SANTE) convened a series of closed meeting in 2020 with national representatives and probably will decide on the final protection level in September in another meeting behind closed doors. Even EFSA's PPR-expert panel was not involved. Bee protection, where so many EU citizens are concerned about, will in the end be decided by a handful of civil servants, most of them from the ministries of agriculture, while independent experts and stakeholders will likely only be consulted when the decision has been made and cannot be changed anymore. This is outrageous.

Public discussion needed first.

Before deciding Commission should organise a public consultation, involve independent scientists and assess what the impact is for bees of this Approach.

2. HERE IS OUR TAKE ON THE NEW APPROACH.

Critique 1.

The new metrics, % background variability in colony size of honeybees, is not natural as EFSA claims.

It is difficult to understand why Commission and EFSA made the choice for this strange metrics of "% background variability in honeybee colony size" (BVB). No justification is given, apart from that it is based on science. But what science? Is BVB natural, is it real? If it would be, what are the drivers of BVB? No explanation is given. Is BVB may-be caused by the blanket of background pesticide pollution that covers agricultural areas or by diseases or by the lack of biodiversity? EFSA did not present any evidence that its BVB is natural and not caused by pollution, biodiversity collapse or other stressors. And the data EFSA uses (its 2020 review[7]) and the input of BEEHAVE (parameters included in 2013[8]) are not from pristine areas with no stressors. The data are polluted. Therefore, the claim of EFSA that this background variation is natural is misleading.

Critique 2.

The new threshold has no proven relation to bee protection.

The Regulation requires 'negligible exposure' of bees that cause no unacceptable effects to be defined. What is the protection that the new threshold (acceptable % decrease of a colony) provides for? For now, EFSA and Commission fail to justify the choice made. What % colony decrease leads to what quantitative level of protection? It is a black box. As long as the drivers of BVB are unknown, no one can tell what it means. Let alone if the approach is fit for protecting bees. BVB and the resulting acceptable % decrease of bee colonies is thus unproven as an approach to protect the honeybee. It is fantasy. How can risk managers take an informed decision on the percentile? They cannot.

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[7] https://www.efsa.europa.eu/en/news/pesticides-and-bees-evidence-mortality-rates-reviewed
[8] http://beehave-model.net/

Critique 3.

Approach 2 is not scientific at all.

In contrast to the claim of Commission/EFSA that its approach is more scientific than the one in the 2013-bee guidance, is unfounded. No science is applied at all. Approach 2 is not alone based on a metrics with unproven relation to bee protection, it is calculated with a model that is not validated. The model is from 2013 and is designed to 'play around' with the effects of stress for bee colonies, mainly the Varroa mite[9]. Not coincidentally, pesticide producer Syngenta was at the drawing board of BEEHAVE. Nothing wrong with the model as long as you use it for scientific comparisons and to play around with effects of Varroa, not for pretending this is real. BEEHAVE is not validated with field tests and thus has little reality value. And it is not designed (input parameters, algorithm), nor updated (input data from 2013) nor validated for calculating the BVB, the new metrics. It is even not excluded that the only thing BEEHAVE produces is 'noise', the algorithm picks, and choses parameters with small variations. Commission's claim that Approach 2 is scientific is misleading.

Critique 4.

The choice for a percentile of BVB makes the entire procedure to a joke.

In an attempt to soften the extreme high colony decrease calculated by BEEHAVE as BVB, EFSA will invite the Standing Committee to decide on the 'percentile' of the BVB. This way risk managers (the ministries of agriculture) decide on the 'protection level', according to EFSA's claim. Given the lack of relation of BVB with bee protection, how would risk managers know which percentile of BVB is related to what quantitative level of bee protection? There is a big risk that the ministries give priority to getting more pesticides approved over the protection of bees and will choose for a wide variability. Just for this reason.

Critique 5.

Chronic pesticide pollution will lead to more pesticides getting approved.

It is common knowledge that the agricultural areas are covered by a blanket of pesticide background pollution, even conservation areas are[10]. And generally, by a cocktail of pesticides that could add up to more toxicity. So if Commission desires to calculate the acceptable % background mortality of bees, they will (partly) calculate the harmful effects of the pesticide-blanket on bees. This is unjustified. Background pollution from pesticides will thus lead to wider BVB-distributions and -in the end- to more pesticides approved.

Critique 6.

The more protection bees need, the less they get.

BEEHAVE is a quite simple model with fixed input parameters and an algorithm. Most variability in bee colony size is caused by landscape (feed) and weather between hives. BEEHAVE will be used by EFSA to calculate BVB for different scenario's, different landscapes in Europe, 19 in total. For the areas with the biggest biodiversity collapse (less flowers for bees), the model will calculate large variability (bees need a lot of time to find food and might die) and thus leads to the least protection. This is madness. Just where bees need most protection, they get the least.

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[9] Becher *et al.* Journal of Applied Ecology 2014, 51, 470–482.

[10] https://www.dutchnews.nl/news/2020/06/eight-drenthe-nature-reserves-under-a-blanket-of-pesticides-trouw/

Critique 7.

Cocktail effects of pesticides not counted

Bees are not exposed to only one pesticide at a time as the regulatory procedures like to let us believe. They are exposed to a cocktail of pesticides every day (just as humans are). Industry is allowed to test a pesticide in isolation, and this has no reality value. For a Bee Guidance a safety factor (10) should always be applied to account for cocktail effects.

Critique 8.

EFSA's approach will allow industry to hide the toxicity of its pesticides.

The with the model calculated variability of the size of a colony will be translated by EFSA somehow into forager bee mortality. No doubt the derived acceptable mortality of honeybees will be big. Much more than the previous 7%. These allowed mortalities will create a fantastic opportunity for industry to hide the toxicity of its pesticide (false negatives). It for instance 20% or 30% mortality is allowed, 20% or 30% bee mortality caused by a pesticide will then be considered 'no effect'.

Critique 9.

Bee mortality is not the right threshold for bee protection.

BVB is unfit for deriving a threshold to protect bees given the enormous variability that is calculated with the model. Queen production or pollination success might be a better metrics to protect bees.

Critique 10.

Allowing 'recovery' will be the final dead blow for bees.

It is unbelievable that EFSA offers the representatives to add "recovery" as a tool to decide on the protection of bees. This tool allows a higher mortality than the threshold, with the claim that bees will recover at a later stage. Recovery is a very controversial tool used in the arthropod-guideline (100% elimination of arthropods is acceptable in the field with the illusion they will 'return' at a later stage) and likely contributed considerably to the insect collapse we are witnessing at the moment. The tool is just speculation and never applied with experimental evidence. It is unscientific, it is wishful thinking.

Critical question to ask at Risk managers of our country

1. What are the drivers for the "% background variability of the honeybee colony size (=number of adult bees)"-BVB abbreviated-, the new EFSA-proposal for deriving a 'safe' threshold? Can you exclude that background chronic pesticide pollution and/or diseases and/or lack of biodiversity are a driver for BVB?

2. Now EFSA uses literature data for calibrating and BEEHAVE uses literature data as its input (from standard polluted areas), how is it excluded that other stressors (background pesticides, diseases) do not influence the 'natural' background data?

3. Should the natural variation in bee mortality not be defined by field tests in pristine environments with well managed healthy colonies to exclude interference of stressors?

4. What is the relation between % background variability (BVB) and bee protection? If a certain percentile leads to 20% or to 30% colony decrease in selected scenarios, what quantitative levels of protection to bees do these % result in?

5. What is the science behind the choice of a percentile of % background variability? How will risk managers take an informed decision without knowledge of the quantitative level of protection resulting from a certain percentile?

6. EFSA will translate bee colony variability into forager mortality and derive a SPG. What is the science behind this maneuver?

7. What is the scientific evidence that the BEEHAVE calculated % background variability (purely stochastic variation of arbitrarily included parameters and algorithms in a non-validated model) is equivalent to 'real' variation in 'natural' background colony size (BVB)?

8. What is the scientific proof that the BEEHAVE-variation is more than 'noise' caused by arbitrary input made in 2013, caused by some parameters and the algorithm chosen? Why does EFSA allow a model that is not validated with field tests?

9. Now the 'illustrative examples' shown by EFSA (Appendix C, A4) indicate that some scenario's show a 100% decrease of the colony (in case of a choice for 5th and 10th percentile), will this wide variation not make the choice for BVB as a metric futile for bee protection since this % equals zero protection?

10. Will the (very) wide % variability not allow industry to hide pesticide toxicity in chronic field testing?

11. How to avoid false negatives with the wide % variability? Is this not a violation of Regulation 1107/2009 that provides for a high level of protection of the environment against pesticides?

12. If the acceptable decrease in colony size is big (40%, 80%, up to 100% = no protection), is % background variability (BVB) not simply the wrong choice for a metrics to decide on bee protection (and be substituted fi. by another metrics like queen production or pollination success)?

13. The tricky thing in BEEHAVE will be to setup the model in a way that it kind of reflects natural variability and this should of course be based on reasonable, objective criteria. Will EFSA re-design BEEHAVE with new data?