PAN Europe's detailed critique on Approach 2

of the option document[1] produced by EFSA, chosen by the pesticide Standing Committee ScoPAFF

Critique 1.

The new metrics, % background variability in colony size of honey bees, 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 honey bee 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 explenation 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[2]) and the input of BEEHAVE (parameters included in 2013[3]) are not from pristine areas with no stressors. The data are from polluted areas. 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 honey bee. How can risk managers take an informed decision on the percentile? They can't.

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

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

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designed to 'play around' with the effects of stress for bee colonies, mainly the Varroa mite[4]. 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 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. No science involved.

Given the poor state of biodiversity and bees, why is EFSA not considering to enhance bees and not allow any mortality (0% variability) in stead?

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[5]. 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

[4] Becher *et al.* Journal of Applied Ecology 2014, 51, 470–482.
[5] https://www.dutchnews.nl/news/2020/06/eight-drenthe-nature-reserves-under-a-blanket-of-pesticides-trouw/

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. Just where bees need most protection, they get the least.

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 honey bees will be big. Much more than the previous 7%. These allowed mortality 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'. Academic scientists will always use the control only, and not allow extra 'variability' on top of the control. Variability is already included in the control.

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 succes might be a better metrics to protect bees.

Critique 10.

Allowing 'recovery' wil 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 llusion 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 whisful thinking.