Acre Webinar - August 2020
Questions and Answers

Technical - Future updates - Regulatory acceptability - Availability of the tool

Technical

> **1. There is a setup of how many processors we want to use, we have to first set them up within FOCUS shell?**

Acre automatically manages the execution of model simulations in parallel. It continuously monitors processing capacity and launches the next simulations when processing capacity frees up. It also monitors which PRZM and MACRO runs are completed so it knows when to launch the next TOXSWA or STEP4 simulations.

> **2. Regarding the selection of the correct FOCUS scenarios, does this happen automatically in the excel sheet?**

The FOCUS scenarios can simply be copied and pasted from the 'lists' sheet in the spreadsheet. For each crop we included a list of available scenarios that can be copied directly into the STEP3 sheet so they don't need to be typed in manually.

There is also a shortcut option for running all scenarios: When we enter the word "all" as input instead of entering a specific scenario, then *Acre* will create runs for all relevant FOCUS scenarios for that crop.

> **3. If app date is set by event in the xlsx, does it take FOCUS default value for the event (e.g. emergence)?**

Yes, *Acre* uses FOCUS default values for crop emergence and harvest.

Acre contains two options for entering input for application timing. The application window (start and end dates) can be set by entering calendar dates or by entering relative dates, for example relative to crop emergence. If relative application dates are entered instead of calendar dates, then Acre uses the FOCUS default dates for the crop event. Currently we can therefore set the application dates relative to the crop emergence or crop harvest dates. There are ideas to extend the ability of Acre to also include other crop development stages, and possibly linking it to the AppDate tool.

4. In STEP 4 does it take the standard FOCUS L&M values for 10 and 20m with the relevant percentages in runoff? and if we want to add VFSMOD is it a special way to do so?

Yes, *Acre* uses the standard FOCUS L&M runoff reduction values for vegetated buffer strips of 10 and 20m width. It also allows entry of 5m or 15m buffer width, which are accepted by some countries. We have not implemented VFSMOD, as there is currently not much regulatory acceptance for this in standard assessments. If required we can run VSFMOD mitigations separately.

5. Multiple Koc for example, does it give result as multiple projects? Or within one single?

The type of reporting we want depends on the type of project. We therefore created a flexible reporting module in *Acre* that allows us to choose the report style depending on the type of project. A standard report contains the standard input and result tables in dRR format, and this is created per individual project.

For other projects we would tell *Acre* to also create a single report with all results. For example, for solution-finding projects in which we simulate a range of application rates and timings. Then we set it to report all STEP3 and STEP4 results in a single table, which allows a quick overview of which inputs pass or fail. Values that exceed RAC are printed in bold.

For the purpose of sensitivity analysis, we are currently working on an additional reporting option that creates contour plots.

6. How does *Acre* determine actual application timings? The FOCUS models obviously use the PAT routines with the user-input window dates, but those PAT routines in the current versions of PRZM and MACRO are known to differ from the rules outlined in the guidance doc. Does Acre use its own implementation or does it use the official version in some way?

The PAT calculator in *Acre* uses the same algorithm as FOCUS MACRO. When we developed the PAT calculator, we became aware that the PRZM PAT calculator has some minor errors that we were not able to reproduce. To overcome this issue, we created two options in *Acre*. The standard option uses the PAT calculator from FOCUS MACRO also for PRZM, and the alternative version where we run the PAT calculator in FOCUS PRZM and import the dates into *Acre*. We foresee that this issue will be resolved with the release of the new FOCUS model updates, following FOCUS SW repair.

7. Recently I have received requests from some MS about changing crop interception for the PECsw calculation, is this possible to do with *Acre*? change of "default parameters?

Just like the FOCUS tools, *Acre* calculates the crop interception parameter (zfint) for each application date in MACRO to reflect the crop development on that day. However, we implemented an option recently that allows overwriting interception by 10% for applications to weeds in orchards or vineyards. We could extend this to other options.

Future updates

> **8. Are there future plans to extend into groundwater, soil, Surface Water Repair, etc?**

We are following the progress with Surface Water Repair, and it is our priority to keep *Acre* fully compatible. We will update *Acre* as soon as possible when the new FOCUS model versions are released.

Further development of *Acre* to include other models is ongoing. We are at the final stages of including PEARL modelling in *Acre*. Once validated, we will be able to run both surface water and groundwater modelling from the same input spreadsheet. We would also be looking into the possibilities to include PEC soil modelling as a future development.

> **9. I guess that as soon as a new version of TXSWA, PRZM or MACRO are released *Acre* would be updated too, simultaneously?**

Yes, it is our priority to keep *Acre* up to date. As we use the tool within Enviresearch, it is in our interest to update *Acre* as soon as possible following any regulatory changes. Acre has already been updated to run the latest version of TOXSWA, and as soon as the new model versions of the "FOCUS surface water repair action" are released we will update and retest *Acre* to ensure compatibility.

Regulatory acceptability

> **10. What is the regulatory acceptability of *Acre*? Could we use Acre output in a registration or submission at the moment?**

The essential criteria for us for *Acre* was to make sure that it matches the current version of FOCUS SWASH perfectly. Everything generated by *Acre*, input and output files, mirror the current version of FOCUS SWASH and the associated models.

However, *Acre* is not the official tool released by the FOCUS version control group. And to be regulatory compliant, we do need to run the official FOCUS tools. Until *Acre* is formally accepted as regulatory tool, we would therefore re-run the final simulations to be used in regulatory submissions. As the setup in *Acre* mirrors SWASH, we would be able to repeat the runs quite easily.

> **11. Why would you need to repeat the modelling? you only need to submit output files, which were (as far as I understood) the same as when running the current modelling**

Acre produces the same folders and input files as SWASH. However, we would not be able to claim in regulatory submissions, or in our technical reports, that the modelling was performed with the official version of FOCUS SWASH. So, although we can provide the same input and output files, the authorities may not accept the modelling, because the input files were not created by the official FOCUS tools.

12. So, do we have the output but not the input to provide to the authorities if needed?

See answer to the previous question. *Acre* produces the same input files as SWASH, so we would be able to provide them to the authorities. However, we cannot claim in the report or dossier that they were created by the official FOCUS tools, and it would therefore not be compliant with current regulation.

Availability of the tool

13. Is *Acre* available for direct usage or are there plans to make it available in the future?

For the moment we only provide services whereby we use *Acre* in-house. We are not in a position to sell software licencing for *Acre*, because we would not be able to provide the necessary product support for a stand-alone software.

We are considering the options for offering a cloud-based service as an option for future development.

14. How would a consultant gain access to *Acre* - are the plans to have a publicly released version?

We are not in a position to sell software licencing for *Acre*, because we would not be able to provide the necessary product support for a stand-alone software. We are considering the options for offering a cloud-based service as an option for future development. But at the moment we only provide services using the *Acre* software.

The advantage of *Acre* is that we can perform a large number of model simulations. So, for fellow efate consultants, we would be able to offer 'modelling only' whereby we simply only perform the model simulations. We could send you input spreadsheet to complete, and we return the results produced by *Acre.*

15. And any info on the pricing of the tool?

Pricing depends on the number of simulations, and gets relatively cheaper for larger projects. Depending on the project, we could provide the full assessment and advise, or only perform the model simulations if preferred.

Please contact us for prices. We would be able to provide some example prices, or quote for a specific project if you there is something you have in mind.