Ministry of Environment of Denmark
Environmental Protection Agency

Notice 2023

Call for applications

from

the Danish Environmental Protection Agency

Pesticide and Biocide Research Programme

for the period

2024 - 2027

Deadline for applications: 1 December 2023

Application form and guidelines for completing the application can be found here: http://eng.mst.dk/chemicals/pesticides/grant-programmes/the-pesticide-reseach-programme/

Focus areas in call 2023

The specific research areas that the Danish EPA request applications within are described in this notice. Firstly priority is given to the research issues that are mentioned in the Danish Pesticide Strategy 2022-2026. The Danish EPA Advisory Committee for Pesticide Research has recommended the proposed areas on the basis of the expectation that new research-knowledge within these areas will be required over the next three to five years.

In the Danish Pesticide Strategy 2022-2026 (https://edit.mst.dk/media/hnzivxrc/strategi-bekaempelsesmiddelforskning2022-2026.pdf, in Danish) it is stated:
- That applications on how the load on environmental, human health, and nature due to use of pesticides may be priced and be included in a strengthen of proportionality in estimation of social costs by use of pesticides compared to organic production should be prioritized in the call for applications to the pesticide research program.
- That focus on biodiversity considerations is prioritized in the call for applications to the pesticide research program, especially research that uncovers if data exists that makes it possible to develop a field-nature-index to illustrate field areas' contribution to nature and the biodiversity, e.g., in relation to pesticide use and crop rotation. This may for example be by a research project, where possible indicators of biodiversity on field areas are investigated.
- That focus on distance requirements when spraying pesticides, consequences to next door neighbors, and prevention of risk for spray drift into houses is prioritized in the call for applications to the pesticide research program.

In addition, The Advisory Committee for Pesticide Research pointed out the overall research areas, which are described in the Danish EPA strategy for pesticide research 2022-2026 have also been taken into account (https://edit.mst.dk/media/hnzivxrc/strategi-bekaempelsesmiddelforskning2022-2026.pdf in Danish).

Research areas - general needs and issues
Pesticide regulation is based on the goal to achieve optimum efficiency for the products while at the same time complying with the many different protection objectives included in the risk assessment of applying the products. The knowledge base required for this risk assessment and regulation is very complex.

Research should support the Danish EPAs work on pesticide regulations. It is therefore important that an applicant review the *state-of-the-art* in relation to current pesticide or biocide regulation by consulting the Danish EPAs website (https://eng.mst.dk/chemicals) including underlying documentation concerning the guidelines and basis for authorization and use of pesticides. Furthermore, EFSA and ECHA guidelines regarding risk assessments should be included in the application. This will ensure that new research-knowledge can be incorporated into the Danish EPAs work in relation to national and EU-regulation. Applications on development of new methods should link to guide lines from OECD and other international organisations. Connections to current regulation, knowledge and international research within this area should be described in the application to demonstrate that the projects will contribute new and relevant knowledge.

To support the ongoing intent of limiting the use of synthetic pesticides or biocides, new and further developed methods and strategies which can reduce or replace the use of pesticides or biocides are requested. At the same time, there is a need for a greater understanding of what socio-economic barriers affect the commercial use of new alternative protection methods and strategies.

For research projects that study the effect of pesticides or biocides, the effects (both in relation to human health and the environment) should be seen in relation to estimated or actual exposures. Assessments of the socio-economic consequences and assessments of tools used within the use of pesticide or biocide regulation are also important with regard to future regulation in the areas. This applies at both national and international levels, particularly with regard to EU regulation. Therefore, as far as possible, all project applications should include aspects that ultimately can relate the research results to the possible need for future research and the administrative regulation in relation to the tools and the objectives they help achieve.

The entire area requires greater insight into the impact of pesticides or biocides on human health, nature, and the environment, and on how to distinguish pesticide and biocide impacts from other impacts.

The regulation of pesticides in foodstuffs is not part of area of responsibility of the Danish EPA, thus, the area is not included in this grant scheme. Therefore, applications with main focus on residues of pesticides in foodstuffs will not be prioritised.

Prioritised focus areas in Notice 2023
Applications for financial support to research projects within the politically prioritized areas of the Danish Pesticide Strategy 2022-2026, will receive highest priority.

Besides the politically prioritized subjects, a number of research areas of particular interest have been chosen for this call for applications. Note that the research areas on pesticides cover both plant protection products and biocides (e.g., rat and mouse poison, wood protection products, disinfection products, and non-crop products to control insects and mites) as well as their metabolites.

The funding for this call DKK 13,82 mill.

Research area 1: The impact of pesticides on humans

This research area includes unintended effects of pesticides on human health in general, including working environment exposure.
There is a need of valid methods to forecast, measure, and map exposure as well as the long-term impacts on humans in general and particularly on persons working with pesticides. In addition, persons that not are active users of pesticides or biocides are exposed to the substances from multiple sources. In Denmark, an inequality regarding human health is noted. Hence, research focus may be directed towards particularly vulnerable groups, e.g., pregnant women or economically or socially vulnerable persons. Focus should include the total exposure to pesticides and biocides and in such research, biomonitoring may be included.

Research area 2: Exposure to pesticides and the effects of these on the aquatic environment, including groundwater

This research area includes the consequences to the aquatic environment (including groundwater) that might arise when using pesticides or biocides, e.g. pesticide use in agriculture, horticulture and fruit growing, and e.g., biocide use in connection with roof cleaning, in paint, wood protectors, disinfectants and antifouling paint for ships etc., which are released either directly or indirectly into surface water.

With regard to the aquatic environment, including the ground water, there is a need for research into presence of pesticides', biocides', and their metabolites' presence and possible effects on individuals, populations, and communities of plants and animals at realistic exposure levels. Especially for biocides, there may be a need for more knowledge on the transport routes from the sites of use to other places in the environment, and their possible effects on nature and the environment.

Research area 3: Pesticides and biocides in the terrestrial environment

This research area includes the exposure and impact of pesticides on organisms in the upper soil strata of cultivated areas. It also includes the consequences of the use of pesticides and biocides for plant and animal life in other parts of the terrestrial environment. Pesticides may inflict the biodiversity and the ecological structure, and as this impact normally is a part of multiple stress factors, research that is able to isolate the impact of pesticides from other stress factors is needed.

Focus should be on the harmful effects on populations and communities of plants and animals rather than on individuals. Moreover, there should be focus on the dependence of populations and ecosystems on the living conditions of individuals and their spread, including re-colonisation of affected areas.

Research area 4: Sustainable use of pesticides and biocides

A part of the Farm to Fork Strategy of the EU Commission is a goal of sustainable cultivation systems with less use of pesticides, and the EU framework directive on sustainable use of pesticides stipulates that integrated pest management (IPM) must be included in future national action plans, and that users of pesticides are obliged to use the IPM-principles.

To promote sustainable cultivations systems and the use of the principles of integrated control, research is needed on further development of methods for monitoring and warning systems, on prevention of pest attacks or infestations of crops, and on strategies that support prevention of build-up of pests. Furthermore, research on development of strategies that can prevent build-up of pesticide resistance or reduce the environmental load from pesticides through optimisation of IPM, by replacing pesticides by non-chemical methods and utilising natural regulation mechanisms is needed. In addition, research that is able to shed light on the valuation of the natural regulation mechanisms on pests and any barriers to the implementation of effective IPM, including counter play from other regulation, is needed.

To promote sustainable use of biocidal products, focus should be on the development and use of the principles of integrated control, as well as alternative control methods. There is, amongst other things, a need for research into the causes and consequences of the development of resistance, including side-effects on the environment.