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List of abbreviations

BAuA	Bundesanstalt für Arbeitsschutz und Arbeitsmedizin
BfC	Bundesstelle für Chemikalien (engl. Federal Office for Chemicals)
BPR	Biocidal Products Regulation (Regulation (EU) No. 528/2012
DE-UZ	Deutsches Umweltzeichen (engl. German Ecolabel)
ECHA	European Chemicals Agency
EU	European Union
MEP	Members of the European Parliament
NGO	Non-Governmental Organisations
NoCheRo	Non-Chemical Alternatives for Rodent Control
OECD	Organisation for Economic Co-operation and Development
PAN	Pesticide Action Network
PBT	Persistent Bioaccumulative Toxic
PPE	Personal Protection Equipment
Q&A	Questions and Answers
R4BP	Register for Biocidal Products
SCOTTY	Sustainable Control of Harmful Organisms in the Twenty-First Century
UBA	Umweltbundesamt (engl. German Environment Agency)
vPvB	very Persistent very Bioaccumulative
WECF	Women Engage for a Common Future
WGB	Working Group Biocides (of the OECD)

Summary

Article 17 (5) of Regulation (EU) No. 528/2012 (Biocidal Products Regulation - BPR) requires EU Member States to provide the public with information on the benefits and risks of biocides by means of appropriate measures and to inform about ways to minimize the use of biocidal products.

Therefore, the German Environment Agency (Umweltbundesamt - UBA) organised an online workshop, held in October 2021 to facilitate a systematic exchange on providing information on biocides and their alternatives. The aim was to identify which approaches can be further developed promisingly in the sense of providing targeted information to the public. Based on examples from current practice, it was discussed in which areas improvements concerning the provision of information can be achieved through new instruments or closer cooperation.

In a first part, the UBA presented its own initiatives to fulfil its task laid down in the BPR. One key information source of the UBA is the information portal “Biozid-Portal” on alternatives to biocide use (https://www.umweltbundesamt.de/biozid-portal or www.biozid.info, only available in German) since 2010. It is part of a comprehensive information system on biocides that is being set up and gradually developed by the German federal authorities. The main target groups of the UBA Biozid-Portal are consumers and private households. The information can also be used for advice by retailers or consumer advice centres.

The UBA Biozid-Portal publishes articles on various pests and beneficial organisms, the latter also as an alternative to chemical biocidal products. General information is provided on non-chemical alternatives and on how to prevent or reduce infestations with pests to minimize or avoid the use of biocidal products. In addition, information is given on the safe handling of chemicals in general and biocidal products, in particular.
The SCOTTY initiative is intended to bundle all UBA activities on the sustainable use of biocides. Further core elements of the workshop were information offers and campaigns on biocidal products that organisations in other countries have initiated. In this thematic block, ECHA gave an overview of its social media activities. In particular, the differences between the limited possibilities of traditional websites and the wider reach of social media were discussed.

As a concrete example an information campaign for specific target groups carried out by the authorities in Denmark was presented to illustrate how information on antifouling products can be promoted in the field of boat surface treatment. Here, too, the use of social media played a major role, especially the use of sponsored posts to raise awareness.

Another approach was the system of closed distribution of biocidal products to professional users, as established in Belgium. Although such a system offers a high level of protection for users, it also requires a considerable amount of effort to implement.

The workshop and a preceding questionnaire to the member states showed that many participants already provide general information on biocidal products within their national information offers. The assessment of the biocidal active substances and the product authorisations provide data for this. The prerequisite for additional information offers on biocide-free alternatives would be comparable knowledge regarding alternatives, including their advantages and disadvantages. However, availability of data for biocidal products is currently unbalanced compared to the knowledge available for alternatives. For this reason, information offers regarding biocide-free alternatives are often patchy or missing completely. This was also exemplified in a presentation on methods for efficacy testing of biocide-free alternatives (rodent trap: German Infection Protection Act & NoCheRo), where it became evident that approaches are needed to gather sound information on potential alternatives.

Regarding the channels to provide information, it became clear during the discussions that websites alone are not sufficient to attain broad attention. Especially younger target groups are reached better if (sponsored) social media posts are used to direct their attention to websites providing in-depth information. The topics of posts should be related to specific topics currently discussed in the media. Good infographics or videos can also be used to attract attention.

The event was appreciated by the participants and it was concluded that it should be the starting point of a more intense exchange of experiences in the future. This could save resources at member state level while at the same time enhancing the availability of information offers for users of biocidal products.

The first step towards this would be the compilation of basic information regarding the information materials that have already been created by member states and that could serve as examples for other member states. If other member states would then be interested in a specific information offer, translation into English or directly into other national languages could be organised individually by the member states concerned in a second step, if this seems reasonable.[1] The UBA offered to support the first step via the SCOTTY initiative.[2]

[1] Example: This Dutch brochure on oak processionary moth control was translated from Dutch to German at a time when little information on this was available in German: https://www.umweltbundesamt.de/sites/default/files/medien/417/dokumente/leitfaden_eps_nl_deutsch.pdf.

[2] https://www.umweltbundesamt.de/en/topics/chemicals/biocides/sustainable-control-of-harmful-organisms-in-the

Zusammenfassung

Artikel 17 (5) der Verordnung (EU) Nr. 528/2012 (Biozidprodukte-Verordnung - BPR) verpflichtet die EU-Mitgliedstaaten, die Öffentlichkeit durch geeignete Maßnahmen über Nutzen und Risiken von Bioziden zu informieren und über Möglichkeiten zur Minimierung des Einsatzes von Biozidprodukten aufzuklären.

Das Umweltbundesamt (UBA) veranstaltete daher im Oktober 2021 einen Online-Workshop, um einen systematischen Austausch zur Bereitstellung von Informationen über Biozide und ihre Alternativen zu ermöglichen. Ziel war es zu identifizieren, welche Ansätze im Sinne einer gezielten Information der Öffentlichkeit erfolgversprechend weiterentwickelt werden können. Anhand von Beispielen aus der aktuellen Praxis wurde diskutiert, wie durch neue Instrumente oder eine engere Zusammenarbeit Verbesserungen in der Informationsbereitstellung erreicht werden können.

In einem ersten Teil stellte das UBA seine eigenen Initiativen zur Erfüllung der im BPR festgelegten Aufgabe vor. Eine zentrale Informationsquelle des UBA ist das seit 2010 bestehende „Biozid-Portal" zu Alternativen zum Biozideinsatz (https://www.umweltbundesamt.de/biozid-portal oder www.biozid.info). Es ist Teil eines umfassenden Informationssystems zu Bioziden, das von den zuständigen Bundesbehörden aufgebaut und schrittweise weiterentwickelt wird. Hauptzielgruppen des UBA-Biozid-Portals sind Verbraucher*innen und private Haushalte. Die Informationen können auch für die Beratung durch den Handel oder die Verbraucherzentralen genutzt werden.

Das Biozid-Portal des UBA veröffentlicht Artikel zu verschiedenen Schädlingen und Nützlingen, letztere auch als Alternative zu chemischen Biozid-Produkten. Es werden allgemeine Informationen zu nicht-chemischen Alternativen und zur Vorbeugung oder Reduzierung von Schädlingsbefall gegeben, um den Einsatz von Biozid-Produkten zu minimieren oder zu vermeiden. Darüber hinaus werden Informationen für einen sicheren Umgang mit Chemikalien im Allgemeinen und mit Biozidprodukten im Besonderen vermittelt.
Mit der SCOTTY Initiative sollen alle Aktivitäten des UBA zur nachhaltigen Verwendung von Bioziden gebündelt werden.

Weitere Kernelemente des Workshops waren Informationsangebote und Kampagnen zu Biozidprodukten, die Organisationen in anderen Ländern initiiert haben. In diesem Themenblock stellte die ECHA ihre Aktivitäten im Bereich der sozialen Medien vor. Dabei wurden insbesondere die Unterschiede zwischen den eingeschränkten Möglichkeiten traditioneller Websites und der größeren Reichweite sozialer Medien diskutiert.

Als konkretes Beispiel wurden die von den dänischen Behörden durchgeführten Informationskampagnen für bestimmte Zielgruppen vorgestellt, wie Informationen über Antifouling-Produkte im Bereich der Schifffahrt gefördert werden können. Auch hier spielte die Nutzung sozialer Medien eine große Rolle, insbesondere die Nutzung gesponserter Beiträge zur Sensibilisierung.

Ein weiterer Ansatz war das in Belgien eingeführte System des geschlossenen Vertriebs von Biozidprodukten an gewerbliche Nutzer*innen. Ein solches System bietet zwar ein hohes Maß an Schutz für die Anwender*innen, erfordert aber auch einen erheblichen Aufwand bei der Umsetzung.

Der Workshop und ein vorangegangener Fragebogen an die Mitgliedsstaaten haben gezeigt, dass viele Teilnehmende bereits allgemeine Informationen über Biozidprodukte in ihren nationalen Informationsangeboten bereitstellen. Die Bewertung der Biozid-Wirkstoffe und die Produktzulassungen liefern dafür Daten. Voraussetzung für zusätzliche Informationsangebote

zu biozidfreien Alternativen wäre ein vergleichbares Wissen über Alternativen, einschließlich ihrer Vor- und Nachteile. Die Datenlage zu Biozidprodukten ist jedoch derzeit unausgewogen im Vergleich zu den Kenntnissen über Alternativen. Aus diesem Grund sind die Informationsangebote zu biozidfreien Alternativen oft lückenhaft oder fehlen ganz. Dies wurde auch in einem Vortrag über Methoden zur Wirksamkeitsprüfung biozidfreier Alternativen (Beispiel Prüfung von Nagetierfallen: Infektionschutzgesetz & NoCheRo) erläutert, in dem deutlich wurde, dass Konzepte entwickelt werden müssen, um fundierte Informationen über potenzielle Alternativen zu erhalten.

Hinsichtlich der Informationskanäle wurde in den Diskussionen deutlich, dass Websites allein nicht ausreichen, um eine breite Aufmerksamkeit zu erreichen. Vor allem jüngere Zielgruppen werden besser erreicht, wenn sie über (gesponserte) Social-Media-Posts auf Webseiten mit vertiefenden Informationen aufmerksam gemacht werden. Die Themen der Posts sollten an bestimmte Themen gekoppelt werden, die aktuell in den Medien diskutiert werden. Gute Infografiken oder Videos können ebenfalls genutzt werden, um Aufmerksamkeit zu erregen.

Die Veranstaltung wurde von den Teilnehmenden begrüßt und man kam zu dem Schluss, dass sie der Ausgangspunkt für einen intensiveren Erfahrungsaustausch in der Zukunft sein sollte. Dadurch könnten Ressourcen auf Ebene der Mitgliedstaaten eingespart und gleichzeitig die Verfügbarkeit von Informationsangeboten für die Nutzer*innen von Biozidprodukten verbessert werden.

Ein erster Schritt dazu wäre die Zusammenstellung von Basisinformationen zu den Informationsmaterialien, die von den Mitgliedsstaaten bereits erstellt wurden und die als Beispiele für andere Mitgliedsstaaten dienen könnten. Sollten dann andere Mitgliedstaaten an einem bestimmten Informationsangebot interessiert sein, könnte die Übersetzung ins Englische oder direkt in eine andere Landessprache in einem zweiten Schritt von den betroffenen Mitgliedstaaten individuell organisiert werden, sofern dies sinnvoll erscheint. Das UBA bot an, den ersten Schritt über die SCOTTY-Initiative zu unterstützen.

1 Background of the Workshop

Article 17 (5) of Regulation (EU) No. 528/2012 (Biocidal Products Regulation - BPR) requires EU Member States to provide the public with information on the benefits and risks of biocides by means of appropriate measures and to inform about ways to minimize the use of biocidal products.

In order to fulfil this mandate included in the BPR, the German Environment Agency (Umweltbundesamt - UBA) is hosting the information portal "Biozid-Portal" on alternatives to biocide use (https://www.umweltbundesamt.de/biozid-portal or www.biozid.info, only available in German) since 2010. It is part of a comprehensive information system on biocides that is being set up and gradually developed by the German competent federal authorities. The main target groups of the UBA Biozid-Portal are consumers and private households. The information can also be used for advice by retailers or consumer advice centres.

The UBA Biozid-Portal publishes articles on various pests and beneficial organisms, the latter also as an alternative to chemical biocidal products. General information is provided on non-chemical alternatives and on how to prevent or reduce infestations with pests to minimize or avoid the use of biocidal products. In addition, information is provided on the safe handling of chemicals in general and biocidal products, in particular.

A systematic exchange between experts in the field of providing information on biocides and their alternatives is necessary in order to identify which approaches can be further developed promisingly in the sense of providing targeted information to the public. Therefore, the UBA organised an online workshop, held in October 2021 to facilitate such an exchange. Based on examples from current practice, it was discussed in which areas improvements in the provision of information can be achieved through new instruments or closer cooperation.

The following report documents the most important aspects of the presentations and the discussion that took place. They are presented in the order in which they took place during the dialogue event. The following agenda items and presentations were addressed during the conference. The individual points were each accompanied by an opportunity to ask questions and discuss.

- ► Welcome & Introduction
  - Welcome address, introduction to the event & clarification of dialogue rules, introductory round of all participants
    (Ingrid Nöh and Stefanie Wieck, German Environment Agency (UBA) and Olaf Wirth, Ökopol GmbH)
  - Background and legal basis
    (Carsten Bloch, German Federal Office for Chemicals (BAuA))
- ► UBA measures to promote sustainable use of biocides
  - Initiative for the Sustainable Control of Harmful Organisms in the 21st Century (SCOTTY)
  - UBA information website on biocides
  - Good practice – Examples: anticoagulant rodenticides and control of oak processionary moth
  - Efficacy testing of biocide-free alternatives in the German Infection Protection Act & NoCheRo

- Promotion of alternatives through eco-labelling (Blue Angel)

(Stefanie Wieck, Erik Schmolz (both from the German Environment Agency (UBA), Stefan Gartiser, Hydrotox GmbH)

► Examples from the EU/international context (Part 1)

- Chemicals in our life
  (Johanna Salomaa-Valkamo, ECHA)
- Biocides in everyday products – Non-professional use of antifouling products
  (Henrik Svenstrup, Danish Environmental Protection Agency)
- Closed circuit: lessons and prospects
  (Vincent Dehon, Federal Public Service - Health, Food Chain Safety and Environment, Belgium)

► Prerequisites for successful education work on biocides and alternatives

- Assessments and ideas from different perspectives
  Stefanie Wieck, German Environment Agency (UBA)
  Elisabeth Ruffinengo, Woman Engage for a Common Future

► Perspectives - Summary of questions, impulses and suggestions from the discussions
(Olaf Wirth, Ökopol GmbH)

► Observations & Conclusions - Final remarks of the organisers
(Ingrid Nöh, German Environment Agency (UBA))

The event was organised by the UBA and the research partners from Hydrotox, PAN Germany, bfu and Ökopol. The event was moderated by Olaf Wirth, Ökopol.

2 Welcome & Introduction

2.1 Welcome address and introduction to the event - Ingrid Nöh and Stefanie Wieck, German Environment Agency (UBA)

Ms Nöh emphasised the pleasing range of participants that registered for the event, including 15 EU member states, ECHA as an EU agency, PAN and Woman for Future as internationally active environmental organisations as well as a consumer protection organisation. The participants represented in Ms Nöh´s perception many years of experience in the field of biocides, making them valuable partners for an exchange of experiences on providing information on the risks that biocides may pose due to their intended purpose to affect living organisms. At the same time, these experts also know how difficult it can be to communicate these potential risks and how to avoid them to consumers.

Ms Wieck then presented the challenges of providing information on biocidal products. In contrast to plant protection products, biocidal products are more often used by consumers in their private homes. However, consumers are confronted with harmful organisms in their surroundings rather irregularly and it cannot be expected that they have broad knowledge or experience on how to deal with them. A key difficulty for them is to identify pests properly and choose the right control method, may it be biocidal or non-chemical. Furthermore, due to the lack of experience, the problem of improper and incorrect use of products is a continuing topic. Therefore, it is of utmost importance to provide adequate information about the potential risks that may be caused using biocides, how to reduce their use, and what preventive and alternative methods are available, especially for consumers.

She furthermore reflected on the legislator’s intention during the 1990s when developing the Biocides Directive, as they already included in it a commitment that biocides should be used properly. This proper use means that biocidal products shall be used in accordance with the authorised use conditions and - even more important - this also means that alternative products and preventive measures should be considered as well to limit the overall use of biocides to the minimum necessary and efficacious. In the Biocidal Products Directive and the following Regulation, member states are held responsible to take measures to ensure this. However, in order to do so knowledge about alternatives to biocide use is necessary. Hence, from the beginning, the UBA has seen one of its main areas of work to compile information on preventive measures and possible alternatives to biocides, especially for consumers. As a main challenge in doing so, she identified that information on the prevention of infestations with harmful organisms and on biocide-free alternatives has been lacking. The little available information was widely scattered and not available to the public. Therefore, the UBA conducted several research projects since 2003. The aim was to pool available knowledge on applications of biocidal products and their alternatives to lay the foundations for an information system. The result is the information website “Biozid-Portal” on preventive measures and alternatives to biocide use that has been launched in 2010. The main target groups of the UBA biocide portal are consumers and private households, but the information is also to be used by so-called multipliers for the dissemination of information, such as consumer information centres and retailers. She referred to the long time and the large number of research projects that it took until such a service was established and also referred to the consistently positive feedback that users have given in the meantime. At the same time, she made it clear that such an offer never reaches a final stage of development and requires constant updating and maintenance, according to the respective scientific and technical state of knowledge.

As a special challenge, Ms Wieck highlighted their limitation of not being able to recommend specific non-chemical alternatives without extensive data in the background to base the recommendation on. The existing lack of knowledge on alternatives is due to the fact that there is often a lack of data and independent verification of the alternatives.

2.2 Background and legal basis - Carsten Bloch, German Federal Office for Chemicals (BauA)

In his presentation, Mr Bloch from the German Federal Office for Chemicals[3] presented the legal requirements of the BPR with regard to the placing on the market of biocidal products and explained the national responsibilities for its implementation in Germany. He clarified the limited scope for biocidal products, where purely physical or mechanical methods are excluded. Nevertheless, he pointed out that a “proper use” according to Article 17 (5) requires the consideration of all such measures beyond the purely chemical ones, whereby the use of biocidal products is to be limited to what is absolutely necessary and corresponding preventive measures are to be included. He also pointed out that for the comparative assessment, in the case of a substitution check according to Article 23 (3), it is also required to include non-chemical control or prevention methods that can be used sufficiently effectively to control pests and thus contribute to a reduction in chemical use. These include e.g. mousetraps, fly swatters, hot steam, etc., but overall, in his view, there is often a lack of complete lists of alternative measures and suitable methods to assess their effectiveness in terms of comparison with chemical biocidal products.

2.3 Discussion

It is was asked whether there are examples where the comparative assessment according to Article 23 has led to the substitution of a biocidal product containing active substances of concern no being approved because substitutes were available. The participants were not aware of such an example.

[3] Bundesstelle für Chemikalien (BfC) https://www.baua.de/EN/About-BAuA/Organisation/Division-5/Division-5_node.html

3 UBA measures to promote sustainable use of biocides

3.1 Initiative for the Sustainable Control of Harmful Organisms in the 21st Century (SCOTTY) - Stefanie Wieck (UBA)

In her presentation, Ms Wieck first explained the core tasks of the UBA with regard to biocides. She once more highlighted that UBA´s overreaching aim is the limitation of the use of biocidal products to the minimum necessary as required by Article 17(5) of the BPR. Besides UBA's activities concerning the environmental risk assessment of active substances and biocidal products, the authority also tries to support the sustainable use of biocidal products, which includes the following activities:

- Substitution on substance level
- Substitution on product level
- Implementation of preventive measures on a systematic level
- Promotion of non-biocidal and non-chemical alternatives

To this end, the UBA is pursuing various approaches, such as the establishment and maintenance of the Biozid-Portal with information on preventive measures, pests and beneficial organisms, and non-chemical control measures, regular dissemination of public statements or targeted information campaigns on relevant topics and the development of methodological approaches for the evaluation of alternative pest control practices. Furthermore, the UBA supports eco-labels to label biocide-free alternatives for pest control in order to make such products more visible to consumers in the market. An additional important tool is the publication of thematic guidance documents, e.g. on rodents, antifoulants or other organisms. An overview of these products from the UBA can be found at https://www.umweltbundesamt.de/en/topics/chemicals/biocides/sustainable-control-of-harmful-organisms-in-the

After highlighting what already has been achieved, she provided a gap analysis of which aspects she believes are currently insufficiently addressed. Still too little is understood of biology and the interrelationships of pests in ecosystems, which is, however, a prerequisite for developing targeted measures. Users often still have a low level of knowledge about the existence and effectiveness of alternatives, which leads to business as usual, i.e. the use of chemical products.

In addition to this knowledge gap, in practice, there is also an insufficient degree of organisation of the providers of alternatives. As a result, the voice of the alternatives sector is heard less often than from the chemical industry in the context of regulatory alternatives assessment or public consultations. In fact, many non-commercial measures, such as behavioural measures or awareness raising of the individual, have no "industry" behind them and the transfer of information is entirely informal (in case organised platforms are missing). Finally, she highlighted the lack of an efficient network that involves expertise beyond the biocide discussion such as sewer maintenance, construction products for proofing, industrial vacuum cleaners to prevent pest infestation.

To overcome these gaps, the UBA developed the Initiative for the Sustainable Control of Harmful Organisms in the 21st Century (SCOTTY) with the tasks:

- Discussion and evolution of known **management concepts**

- Support of **innovative** methods
  - Efficacy (and humaneness) tests of non-chemical alternatives
  - Ideas and technologies for the application of biocidal products

► **Networking** opportunities

- Events
- Consultation procedures to gain an overview over specific questions

► Provide **information**

- Homepage/Biozid-Portal

3.2 UBA information website on biocides - Stefanie Wieck (UBA)

In the second part of her presentation, Ms Wieck introduced the participants to the various elements of the websites on biocides of the UBA. She gave an impression of the different areas of individual sub-pages, which are largely available in German and only partly in English (e.g. a sub-page on antifoulings or the SCOTTY page mentioned earlier).

She then presented the Biozid-Portal in more detail. It includes information on pests and beneficial organisms, currently a total of 84 species. She went on to explain what information is usually presented for each species. Another topic she presented was the range of different products that can be used in different areas of application (e.g. hygiene, material protection). A third pillar she presented are the so-called case studies, such as the removal of algae without chemicals or the use of antibacterial chopping boards. These information services are accompanied by the provision of news in the form of current reports about pests or beneficial organisms, alternatives and biocides, which have been written by third parties and which may be of interest to users.

3.3 Good practice – Examples: anticoagulant rodenticides and control of oak processionary moth - Stefanie Wieck (UBA)

In addition to the general remarks on the UBA's information services, Ms Wieck presented two examples of best practice information services.

The first information is a Q&A on anticoagulant rodenticides. The UBA published a 50-page brochure on the basic legal requirements for environmental impact, risk management measures and the prerequisites for use. Furthermore, different conditions of use are examined and the limits of use (e.g. resistance) and possible preventive measures and alternatives are discussed. In addition, there is a special chapter for professional users. She explains that such best practice documents also need to be updated. Since the first version in 2012, the number of pages of the document has more than doubled due to continuous additions and updates. The main target group of this document is essentially the professional user. Specific information is precisely adapted to this target group, e.g. the use of bait stations, labelling and regular inspection of the stations. Preventive measures or the use of alternatives are also presented in additional documents for the public.

The second example is a Q&A on the oak processionary moth. The structure of this Q&A is more oriented towards the pest itself and provides information on the species, the challenges and health risks associated with the larvae, and possible chemical and non-chemical control measures. Based on this, practical information on control is provided, but also on the risks of handling biocidal products.

In her conclusion, Ms Wieck points out that, from her point of view, comparable offers might exist in other Member State authorities and that, from her point of view, it is important to ensure a stronger networking of the offers to reduce the development effort and their necessary maintenance and to be able to better fulfil the required mandate of the BPR to provide information on biocides and their alternatives.

3.4 Efficacy testing of biocide-free alternatives in the German Infection Protection Act & NoCheRo - Erik Schmolz (UBA)

Mr Schmolz introduces the issue of efficacy testing of biocide-free alternatives and informs about related activities concerning rodent traps at the German Environment Agency.

The main reason for testing traps is rooted in the German Infection Protection Act. He explains that in Germany, competent communal health authorities are entitled to order measures to control health pests (e.g. rats, cockroaches, mosquitos)(Article 17) in case they pose a risk for human health. However, for these pest control measures, only products are allowed to be used which have been tested for efficacy by the German Environment Agency (Article 18). These products include biocides as well as non-chemical alternatives such as rodent traps. The Environment Agency has developed methods and criteria for testing efficacy and animal welfare of rodent traps, which generated a high interest for trap testing from producers and the industry. The reasons for this are widespread resistance against anticoagulants (rats and mice) as well as the need for tox-free pest control (eg. pharmaceutical industry, food industry). Traps are also increasingly being used as substitutes for restricted or even prohibited practices for rodenticide use such as permanent baiting. Obstacles for the establishment of non-chemical alternatives for rodent control in Germany are, amongst others, that traps are not subject to authorisation and thus no general decision-making scheme on whether a trap could be legally used or not exists. Nevertheless, a legal requirement from German Animal Protection Act (Article 4) is that „…killing may only be carried out with no more than unavoidable pain". However, no criteria for the animal welfare impact of traps are available and local veterinary authorities decide on a case-by-case basis about permissions to use traps for professional pest control. Being included in a list of acknowledged (i.e. certified) products according to the Infection Protection Act provides local decision-makers with solid information about the animal welfare impact of traps. In conclusion, testing and evaluation of non-chemical methods (in this case rodent traps) help their producers in reasonable planning and product marketing, avoidance of legal uncertainty and gives customers (consumers as well as professionals) unbiased/independent information about the products. Testing according to the Infection Protection Act provides such information but is based on a national German peculiarity. Hence, an international approach for this is needed, which comes with the NoCheRo (Non Chemical Rodent Control)-Initiative.

The background for the NoCheRo - Initiative are grave environmental concerns over the use of anticoagulant rodenticides since most of them are either PBT or vPvB-substances (Persistent, Bio-accumulative and/or Toxic) and act not-target specific, which results in a high risk for secondary poisoning (e.g. of foxes, martens, and birds of prey). Although the control of

commensal rodents (rats, mice) mainly relies on the use of these anticoagulant rodenticides, they meet the exclusion criteria according to the Biocidal Products Regulation. Nevertheless, in 2017, the approval of all anticoagulant rodenticides was renewed for another five years. This decision mainly relied on the need for rodent management due to infection prevention and the limited availability of alternatives to anticoagulant rodenticides. Traps were not evaluated as an alternative for this decision, as no criteria for assessing their efficacy were available at the time.

Against this background, together with an expert working party from authorities, science and industry and based on their own test procedures, the German Environment Agency has developed a guidance for the evaluation of rodent traps (NoCheRo[4]). The guidance should enable harmonized testing of such rodent traps in the future to foster non-chemical alternatives in general, but also with a view to further authorisation cycles of anticoagulant rodenticides under the Biocides Regulation.

Mr Schmolz briefly presented the guidance. To allow a comparative assessment of traps with rodenticides, the guidance structure as well as testing methods and criteria are as close as possible to the efficacy guidance for biocides rodenticides (PT 14). Besides efficacy, the guidance provides methods and criteria for the assessment of humaneness of traps to ensure social acceptance as well as compliance with animal welfare regulations. Avoidance of unintended effects of traps on non-target organisms (e.g. other small animals like shrews or songbirds) is also addressed in the guidance.

Mr Schmolz advocated that to be regarded as serious alternatives to biocides, non-chemical methods need to be rigorously tested for their efficacy as well as other unintended effects on target as well as non-target organisms (e.g. negative animal welfare impacts and unintended bycatches by traps). Methods and criteria set out in appropriate guidelines will also contribute to the improvement and development of new, better non-chemical products.

3.5 Promotion of alternatives through eco-labelling (Blue Angel) - Stefan Gartiser (Hydrotox)

Mr Gartiser (Hydrotox) gave a presentation on the promotion of biocide-free alternatives through eco-labelling. The background is the demand for a sustainable use of pesticides, including the use of integrated pest management and alternative approaches or techniques such as non-chemical alternatives as required by Directive 2009/128/EC, which so far only encompasses plant protection products, but not biocides. Similarly, Regulation (EU) No 528/2012 requires the proper use of biocides while involving the rational application of a combination of physical, biological, chemical or other measures with the aim to limit the use of biocidal products is limited to the minimum necessary. In this context, the systematic evaluation of alternatives is a key issue, because alternatives often are not subjected to any independent assessment which implies a reduced acceptability of alternatives compared to authorized biocidal products. Here, eco-labelling of alternatives has a high potential for reducing/replacing the use of biocides.

The Blue Angel exists for 40 years and is a type-1 ecolabel according to ISO 14024, meaning that the development of award criteria and compliance with that follows a scientific and independent approach by a third party. It has a broad brand awareness in Germany and is an important decision-making criterion for public procurement. More than 1 200 products and processes have been awarded so far, belonging to 200 award criteria. The development of award criteria is

[4] https://www.umweltbundesamt.de/sites/default/files/medien/5750/publikationen/2021-05-06_texte_74-2021_nochero_0.pdf

realised in feasibility studies, expert consultations and stakeholder hearings. The final decision is taken by the “Jury Ecolabel”. Where considered appropriate, a harmonization with the EU ecolabel is attempted (e.g. for lubricants). New award proposals may be submitted to the UBA Division III 1.3.[5]

A survey of existing eco-label criteria of the Blue Angel revealed that biocides are most often not considered in the criteria for ecolabelling, with the exception of positive lists for in-can preservatives (PT6) e.g. for varnishes and the examples presented below in more detail. For some ecolabels (textiles DE-UZ 154, sanitary additives DE-UZ 84a, mattresses DE-UZ 119), the use of biocides is not allowed. The evaluation of biocide-free methods, including proof of efficacy, is challenging.

The award criteria for the following ecolabels were presented more in detail:

- Non-toxic pest control and prevention (DE-UZ 34, 87 products certified)
- Thermal processes to control ligniperdous insects (DE-UZ 57a, 2 processes certified)
- Thermal processes for indoor pest control (DE-UZ 57b, 2 processes certified)
- Weather-resistant wood products (Austrian UZ 28, outdoor furniture: 1 company certified)

Currently, new award criteria for underwater coatings and other antifouling systems are developed within a research project (FKZ 3719654150) financed by German Environment Agency. It is expected that the criteria will be adopted in 2022.

Concluding, ecolabel could play an important role in promoting biocide-free alternatives, but few ecolabel criteria specifically address biocides or alternatives so far and there are only few certified products. Within an online expert discussion on "Biological pest control - beneficial organisms as an alternative to biocidal products” in 2020, the producers and users of beneficial organisms were not much interested in developing criteria for ecolabels and referred to the long-term experience with beneficial organisms. The question remains, how ecolabels could better be used as an instrument for communication, information and awareness-raising.

3.6 Discussion

There was some discussion on the details of the testing of animal welfare criteria that were answered. It was clarified that the onset of irreversible unconsciousness of rodents is measured by loss of their eyelid reflex, which must be within 45 seconds. With the development of better traps, the criteria could be even stricter. Risks for non-target animals such as songbirds to be unintentionally trapped cannot be entirely excluded, but can be minimized, e.g. through the use of trap stations analogous to bait stations for rodenticides.

It was questioned whether there indeed exist ecolabels with allowed biocides. It was answered that this concerns the thermal treatment of wood-destroying or indoor pests (DE UZ 57a/b), Here, only non-accessible areas may be treated with biocides to fulfil the requirement of the expunction principle of certain pests, when necessary.

[5] https://www.umweltbundesamt.de/en/the-uba/about-us/organizational-structure-of-the-uba/division-iii, Website Blue Angel https://www.blauer-engel.de/en/blue-angel/actors/german-environment-agency

4 Examples from the EU/international context

4.1 Chemicals in our life - Johanna Salomaa-Valkamo, (ECHA)

Mrs Salomaa-Valkamo, Head of communication at ECHA, presented the challenges and communication channels of an internationally operating authority when the general public is the target group of communication measures. Generally, ECHA as an EU agency has to provide many offers in the languages of the EU Member States (23 languages). In addition, numerous national cultural peculiarities must be considered. This includes approximately 450 million citizens. Currently, the professional stakeholders are still at the centre of the communication processes in order to provide them with important information on REACH implementation, which they have to implement. However, increasingly communication is also taking place for private consumers in order to provide them with better information on chemical risks including those from the use of biocide products and also plant protection products and to inform them about the work of the authority. Currently, more general topics on chemical issues are presented for this target group via a stand-alone website "Chemicals in your Life" (since 2018). In principle, this type of communication led to positive feedback, but the number of accesses to the offers was far below the theoretically realisable potential of a few thousand visitors per month and a relatively low rate of return visitors. For this reason, ECHA has decided to integrate this information offer into the main ECHA site in 2022, while expanding other ways of communication in the future instead.

The aim of future communication should be a "non-expert" communication for citizens, Members of the European Parliament (MEPs) and NGOs. Thematically, ECHA as EU agency has a different mandate than the national authorities in the biocide context, namely the general education on the safe use of chemicals with reference to the life situations of the users. It is necessary to translate complex scientific concepts into simple language. This will in the future be realised using social media channels such as Twitter, Facebook and LinkedIn. Based on the current user numbers of social media channels, it can be said that the reach is currently 20 times higher than it was the case with the old “Chemicals in your Life” website. In addition, the interaction of the readers with the content is significantly higher.

ECHA has 14 500 Twitter, 10 000 Facebook and 41 200 LinkedIn (latter mostly professionals[6]) followers. ECHA counts about 90 700 visitors of the “Chemicals in your Life” website, but 2 million on social media. As there is a general difficulty to reach new audiences, it was decided to integrate “Chemicals in your Life” to ECHA website and focus on social media from 2022 on. One of the lessons learnt was “be informative but be also creative in distribution of this information”.

In relation to biocide risks, ECHA has, for example, produced and distributed a video on the use of biocides in consumer products, or sent out targeted posts in the context of specific events such as Pollinator Week for the protection of insects, thus linking up with current debates. Further attention was gained through international celebrations, for example on Valentine's Day or the reference to certain themes such as microplastics or the design of living environments (everyday products). ECHA also has repeated posts on concrete chemical risks in the household, such as “do's and don’ts” in everyday life or also within the framework of the introduction of new substance bans. Not only static posts were produced but also the use of videos was

[6] scientists, consultants, job seekers, lawyers and professionals from many different sectors

increased. However, this should always be discussed in terms of the intended users and a suitable length. She pointed out that for important topics, the visibility of content can be significantly increased if sponsored posts are used (currently on Facebook).

4.2 Biocides in everyday products – Non-professional use of antifouling products - Henrik Svenstrup, (Danish Environmental Protection Agency)

Mr Svenstrup presented the activities of the Danish authorities using the example of antifouling applications. Various activities have been carried out here. As an important cornerstone in this context, he described the generation of a list of legally usable antifouling products on the market. Although the biocide registration database, R4BP, restricts the generation of such a list due to functionality and confidentiality reasons, Denmark and other Scandinavian countries have the advantage that additional national product registers exist in which chemical products are recorded. In addition, there is also a certain interest on the part of producers to be listed in these product registers. This provides citizens with a purchasing orientation. However, the list does not and must not go so far as to evaluate the products listed. Although Mr Svenstrup clearly emphasises the advantage of such lists for citizen information, he also admits that this list was comparably easy to generate, as only one product type with a rather narrow application field was considered. For other biocidal products, he sees such work as more challenging (also in terms of the need for updating). The antifouling activities were accompanied by leaflets distributed at appropriate points, e.g. in ports, advertisements in magazines, newsletters or on third party websites. The activities were also coordinated in terms of timing (at the beginning of the season for boat renovations). Here, the information was also provided with emphasis, i.e. the paid use of sponsored content in social media and on the internet was advertised as particularly helpful. However, they were also identified as being quite costly, so that regular use of such approaches appears to be feasible only to a limited extent.

4.3 Closed circuit: lessons and prospects - Vincent Dehon, (Federal Public Service - Health, Food Chain Safety and Environment, Belgium)

In a third example from the international context, Mr Dehon from Belgium presented the establishment of a closed application system to control possible biocidal risks. The scope of the system covers the use of biocide products that are not approved for the general public, i.e. can only be used by professional users. Both traders and users are obliged to become part of the system and to carry out sales only between registered actors. Furthermore, traders are obliged to report annually on the quantities sold so that market trends can be monitored and, if necessary, special features can be identified or targeted reduction measures can be initiated. Furthermore, distributors are also obliged to recommend accompanying measures for biocide use (e.g. the use of suitable PPE for storage and transport). Also, the system offers the possibility to provide targeted information to the actors, as they are all known and can be contacted directly via the registration system (e.g. catering, wood treatment, meat, cleaning, poultry, textile sectors etc.).

In his evaluation, Mr Dehon clearly emphasised the protection of the public, but he also stressed that the establishment and maintenance of the system were associated with a not inconsiderable burden, which can be explained by the large number of actors and sectors. He also points out that the system has brought challenges in terms of implementation and enforcement. In some areas, there is also the situation that it was necessary to remove applications from the closed-

loop or to allow products to be distributed to private individuals (special case of swimming pool disinfection).

4.4 Discussion

In the discussion, the question was raised how much planning is needed to generate content for social media channels. In the case of ECHA, it was shown that some things are determined well in advance (about a year), as some events can be planned. However, about 40% of the posts are reactions to current developments in the daily reporting. It was also asked whether other channels should be used and whether cooperation with other EU agencies could be useful. Ms Salomaa-Valkamo explained that this could possibly be the case for an Instagram channel, but that this is not yet in the concrete planning stage. The question of independent apps was also discussed in order to open up new circles or to present information in a different way, but the development work was assessed as quite high and no added value was seen from ECHA's point of view. The question was also raised as to how high the effort is for maintaining enquiries about social media content. However, this was considered to be manageable, as in many cases only a few queries are received and only in exceptional cases do they have to be answered by specialist colleagues.

With regard to the comments on better information on biocidal products, reference was also made to other product registers. In this context, the Swedish authorities pointed out that, like Denmark, they maintain lists and even take into account regional differences between the east and west coasts. Switzerland also has registers that are accessible to the general public. In Germany, alternatives are made more visible through eco-labelling as no register of alternatives exists.

The question of language versions for content was also raised as this is important to be able to share information offers between member states. It was reported that Belgium is in the situation of having to maintain several national languages (French, Flemish, German) as well as English. In this context, it was stated that at least English versions could be shared, if necessary, since at least certain target groups can use them, and other language versions can be used by several countries. It was also confirmed from the Netherlands that content is usually provided in English and Dutch. Here it was highlighted that sometimes it is difficult to organise the generation of materials in a centralised way as the municipalities have partly own rules for the treatment of pests. The UBA has just recently conducted a research project on the topic of alternatives to biocide use in municipalities.[7] In order to organise a collection of materials on Good Practice Codes, so that there is at least a basis for knowing what already exists in the member countries, the use of an existing collection by the working group on biocides at the OECD level (OECD WGB) is proposed[8]. It was suggested that a further compilation of best practice documents should be realised and shared. In this context, two studies performed on behalf of the European Commission could serve as a basis. [9,10]

[7]Final report: https://www.umweltbundesamt.de/publikationen/umweltfreundliche-beschaffung-einsatz-von-biozid, brochure for municipalities on possible alternatives: https://www.umweltbundesamt.de/publikationen/pestizide-in-kommunen-urbane-schaedlingsbekaempfung (all in German)

[8] https://www.oecd.org/chemicalsafety/pesticides-biocides/biocides.htm

[9] Zamparutti et al. (2010). Study towards the Development and Dissemination of Best Practice on Sustainable Use of Biocidal Products. 070307/2009/546211/ETU/D4 (October 2010)

[10] EC (2015). Analysis of measures geared to the sustainable use of biocidal products. FINAL REPORT 070307/2013/668685/ETU/ENV.A.3 (May 2015). https://op.europa.eu/en/publication-detail/-/publication/4fd36f71-e68a-11e5-8a50-01aa75ed71a1

In a statement, it was suggested to consider biocides in the Chemicals Strategy for Sustainability of the European Green Deal. It was emphasised that reduction strategies are needed for all chemicals, but especially for pesticides. People should be educated to avoid biocides, especially in households. It was further stated that there is a need for more information on biocides sell and use statistics similar as already in place for plant protection products. In Germany, data on the quantities of biocidal products placed on the market will need to be reported once a year to the Competent Authority, starting from 2022.

5 Prerequisites for successful education work on biocides and alternatives

In two statements, Stefanie Wieck, representing the UBA, and Elisabeth Ruffinengo, representing Women Engage for a Common Future (WECF) as a consumer and environmental protection organisation in the non-profit sector, discussed their requirements for targeted risk communication on biocides and alternatives to their use.

UBA statement

It was emphasised by the UBA that education on biocides and their alternatives is a prerequisite for a sustainable use of biocides. This is due to their nature of being able to exert a harmful effect on living organisms and thus also for organisms other than the target organisms. The labelling and use instructions required by chemical legislation are not sufficient regarding a truly sustainable use of the products. Additional information on preventive measures and non-chemical alternatives must be made available in a form that is suitable for the target group. This leads to a not inconsiderable expenditure of resources for the actors involved, especially the authorities in the member states and organisations that feel responsible for educating civil society in this field. Here synergies between member states should better be used to reduce the effort. The prerequisite for this is that member states are aware of what has already been developed in other countries and that documents are available not only in national languages but also in English. But for many alternatives, knowledge is still missing that would be needed for education offers. An assessment scheme or process is missing but eco-labels could play a bigger role in this.

The UBA summed up that the prerequisites of a successful education work on biocides seem to be:

1. Resources to be able to keep up the work parallel to other tasks
2. Closing the knowledge gaps, especially on alternatives and making them communicable
3. Using synergies by an exchange on activities with other agencies to find out what is already there and discuss how to make use of existing approaches in other member states
4. Identify approaches from out of the biocides world to bring the information to the user groups that are not actively looking for information.

WECF statement

Ms Ruffinengo then broadened the perspective, stating that the sustainable use of biocides is only a small part of the issue and that there is a fundamental problem of exposure to chemicals from products. She sees a general lack of awareness of biocide risks as well as other chemical risks as a problem in society. However, she also emphasises that consumer information is not sufficient to adequately manage the risks of chemicals, as this places the entire responsibility for their control on the consumer. She claims a wider social responsibility of companies and authorities to take their share of responsibility and to contribute to making products safer. Currently, she sees the consumer as the loser in a system where risks are not visible. She mentions, for example, biocidal treated articles in the current Corona pandemic, where the use of silver particles in masks was advertised as positive but concealed risks. She referred to the

“Pesti’home” study realised in France where 1 500 interviews were performed.[11] In 2014, more than 4 300 products (insecticides and related actives) were used.

It was mentioned that the EU's Green deal also provides for a more sustainable use of chemicals in principle. This includes the development of alternatives to the use of chemicals, but also the improvement of current application practices.

[11] https://www.anses.fr/en/content/anses-publishing-results-pesti%E2%80%99home-study-use-pesticides-home

6 Conclusions

The workshop and a preceding questionnaire to the member states showed that many participants already provide general information on biocidal products within their national information offers. The assessment of the biocidal active substances and the product authorisations provide plenty of data for this. The prerequisite for additional information offers on biocide-free alternatives would be comparable knowledge regarding alternatives, including their advantages and disadvantages. However, the availability of data for biocidal products is currently unbalanced compared to the knowledge available for alternatives. For this reason, information offers regarding biocide-free alternatives are often patchy or missing completely.

Regarding the channels to provide information, it became clear during the discussions that websites alone are not sufficient to attain broad attention. Especially younger groups are reached better if (sponsored) social media posts are used to direct their attention to websites providing in-depth information. The topics of posts should be adapted to seasons or specific topics currently discussed in the media. Good infographics or videos can also be used to attract attention.

The event was welcomed by the participants and it was concluded that it should be the starting point of a more intense exchange of experiences in the future. This could save resources at member state level while at the same time enhancing availability of information offers for users of biocidal products.

The first step towards this would be the compilation of basic information regarding the information materials that have already been created by member states and that could serve as examples for other member states. Within this first step of compiling the status quo, a translation of all materials into English would not be necessary. If other member states would then be interested in a specific information offer, translation into English or directly into other national languages could be organised individually by the member states concerned as deemed appropriate in a second step.[12] The UBA offered to support the first step via the SCOTTY initiative.[13] All participants were asked to provide examples of their information work to be included in this workshop documentation as a start (see annex B).

[12] Example: This Dutch brochure on oak processionary moth control was translated from Dutch to German at a time when little information on this was available in German: https://www.umweltbundesamt.de/sites/default/files/medien/417/dokumente/leitfaden_eps_nl_deutsch.pdf.

[13] https://www.umweltbundesamt.de/en/topics/chemicals/biocides/sustainable-control-of-harmful-organisms-in-the

A List of participating organisations

#	Organisation	Country
1	Administration de l'environnement	Luxembourg
2	Bundesamt für Gesundheit (BAG),	Switzerland
3	Bundesanstalt für Arbeitsschutz und Arbeitsmedizin,	Germany
4	Bundesanstalt für Materialforschung und -prüfung (*BAM*)	Germany
5	Bundesinstitut für Risikobewertung	Germany
6	Büro für Umweltmedizin (project team)	Germany
7	Danish EPA/ Miljøstyrelsen	Denmark
8	Danish Ministry of Environment	Denmark
9	DGAV, Portugal	Portugal
10	Environment Agency Germany (UBA)	Germany
11	European Chemicals Agency (ECHA)	EU
12	Federal Office for the Environment FOEN	Switzerland
13	Federal public service health, food chain safety, and environment	Belgium
14	Federal Public Service Public Health, Food Chain Safety and Environment	Belgium
15	French Ministry of the Environment	France
16	Health Board Estonia	Estonia
17	Hydrotox (Project Team)	Germany
18	Julius Kühn Institut (JKI)	Germany
19	Latvian Environment, Geology and Meteorology Centre (LEGMC)	Latvia
20	Ministerie van Infrastructuur en Waterstaat	The Netherlands
21	Ministry of Economy of the Slovak Republic	Slovakia
22	Ministry of Economy SR, Centre for chemical substances and preparations	Slovakia

#	Organisation	Country
23	Ministry of Environment of Denmark	Denmark
24	Ministry of Health and Environment Belgium	Belgium
25	Ministry of Health Croatia	Croatia
26	Ökopol (project team)	Germany
27	Österreichisches Umweltbundesamt	Austria
28	Pestizid Aktions-Netzwerk e.V. (PAN Germany, project team)	Germany
29	Republic of Austria Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology	Austria
30	Swedish Chemical Agency	Sweden
31	Swiss Federal office of public health, Switzerland	Switzerland
32	Tukes, Finnland	Finnland
33	WECF (Women Engage for a Common Future)	international

B Collection of existing information sources / documents

Ressource	Link	Country
Das österreichische Desinfektionsmittelnetzwerk	https://www.biozide.at/top-navi/desnet	Austria
Österreichische Spezifika- Inforrmationen über den Umgang mit Rodentiziden in Österreich	https://www.biozide.at/bp/nationale-info/spezifika	Austria
Stadt Wien; Wiener Desinfektionsmittel-Datenbank (WIDES-Datenbank)	https://www.wien.gv.at/umweltschutz/oekokauf/desinfektionsmittel/	Austria
The Federal Public Service (FPS) Health, Food Chain Safety and Environment	https://www.health.belgium.be/en/closed-circuit	Belgium
Danish EPA -Sustainable Consumption and Production - Chemicals in consumer products	https://mst.dk/kemi/biocider/borger-og-biocider	Denmark
Danish EPA-Think! Before you use everyday products containing poison. (mst.dk)	https://eng.mst.dk/chemicals/biocides/think-before-you-use-everyday-products-containing-poison/	Denmark
EC (2015). Analysis of measures geared to the sustainable use of biocidal products. FINAL REPORT 070307/2013/668685/ETU/ENV.A.3 (May 2015)	https://op.europa.eu/en/publication-detail/-/publication/4fd36f71-e68a-11e5-8a50-01aa75ed71a1	EU
ECHA Website on substitution	https://echa.europa.eu/substitution-to-safer-chemicals	EU
Zamparutti et al. (2010). Study towards the Development and Dissemination of Best Practice on Sustainable Use of Biocidal Products. 070307/2009/546211/ETU/D4 (October 2010)	https://www.hydrotox.de/fileadmin/user_upload/pdfs/forschungen/berichte/Biocides%20best%20pactices%20for%20sustainable%20use.pdf	EU

Ressource	Link	Country
Boat hull paints - Finnish Safety and Chemicals Agency (Tukes)	https://tukes.fi/en/home-and-leisure-time/hobbies-and-activities/boat-hull-paints	Finland
Insecticides and insect repellents - Finnish Safety and Chemicals Agency (Tukes)	https://tukes.fi/en/home-and-leisure-time/household-and-garden-pests/insecticides-and-insect-repellents	Finland
Rodenticides - Finnish Safety and Chemicals Agency (Tukes)	https://tukes.fi/en/home-and-leisure-time/household-and-garden-pests/rodenticides	Finland
Treated wood - Finnish Safety and Chemicals Agency (Tukes)	https://tukes.fi/en/home-and-leisure-time/restoration-and-renovation/treated-wood	Finland
KEMIDIGI Portal (including Biocidal product registers)	https://www.kemidigi.fi/	Finnland
ANSES is publishing the results of the Pesti'home study on the use of pesticides in the home	https://www.anses.fr/en/content/anses-publishing-results-pesti%E2%80%99home-study-use-pesticides-home	France
Authorisation of Anticoagulant Rodenticides in Germany FAQ on Environmental Risks, Risk Mitigation Measures and Best Practice	https://www.umweltbundesamt.de/en/publikationen/authorisation-of-anticoagulant-rodenticides-in	Germany
Eichenprozessionsspinner Antworten auf häufig gestellte Fragen	https://www.umweltbundesamt.de/publikationen/eichenprozessionsspinner	Germany
NoCheRo-Guidance for the Evaluation of Rodent Traps Part A Break back/Snap traps	https://www.umweltbundesamt.de/en/publikationen/nochero-guidance-for-the-evaluation-of-rodent-traps	Germany
Non-Chemical Alternatives for Rodent Control (NoCheRo)	https://www.umweltbundesamt.de/en/topics/chemicals/biocides/non-chemical-alternatives-for-rodent-control	Germany

Ressource	Link	Country
Pestizide in Kommunen: Urbane Schädlingsbekämpfung, Bautenschutz und Hygiene	https://www.umweltbundesamt.de/publikationen/pestizide-in-kommunen-urbane-schaedlingsbekaempfung	Germany
SCOTTY Sustainable Control of Harmful Organisms in the 21st Century	https://www.umweltbundesamt.de/en/topics/chemicals/biocides/sustainable-control-of-harmful-organisms-in-the	Germany
SUBSPORTplus, the Substitution Support Portal!	https://www.subsportplus.eu/subsportplus/EN/Home/Home_node.html	Germany
UBA Biozid Portal	https://www.umweltbundesamt.de/themen/chemikalien/biozide/biozid-portal-start https://www.biozid.info	Germany
Umweltfreundliche Beschaffung und Einsatz von Biozid-Produkten in Kommunen Weiterentwicklung des Konzepts „Pestizidfreie Kommune" für den Biozidbereich	https://www.umweltbundesamt.de/publikationen/umweltfreundliche-beschaffung-einsatz-von-biozid	Germany
OECD Biocides Website	https://www.oecd.org/chemicalsafety/pesticides-biocides/biocides.htm	international
Anti-fouling paints - Kemikalieinspektionen	https://www.kemi.se/en/chemicals-in-our-everyday-lives/advice-on-chemicals-in-your-home/anti-fouling-paints	Sweden
Bedbugs and cockroaches - Kemikalieinspektionen	https://www.kemi.se/en/chemicals-in-our-everyday-lives/advice-on-chemicals-in-your-home/means-against-pests-and-insects/bedbugs-and-cockroaches	Sweden
Disinfectants and preservatives - Kemikalieinspektionen	https://www.kemi.se/en/chemicals-in-our-everyday-lives/advice-on-chemicals-in-your-home/disinfectants-and-preservatives	Sweden
English | Hallå konsument – Konsumentverket (hallakonsument.se)	https://www.hallakonsument.se/en/engelska/	Sweden

Ressource	Link	Country
General advice on pest control - Kemikalieinspektionen	https://www.kemi.se/en/chemicals-in-our-everyday-lives/advice-on-chemicals-in-your-home/means-against-pests-and-insects/general-advice-on-pest-control	Sweden
Insecticides for animals - Kemikalieinspektionen	https://www.kemi.se/en/chemicals-in-our-everyday-lives/advice-on-chemicals-in-your-home/means-against-pests-and-insects/insecticides-for-animals	Sweden
Lyssna på vår podcast Kemikaliepodden – Kemikalieinspektionen English Listen to our Podcaast Kemipodden	https://www.kemi.se/kemikalier-i-vardagen/vara-rad-om-kemikalier/lyssna-pa-var-podcast-kemikaliepodden Podcast about the use of antifouling paints and alternatives (episode 4) Podcast about biocidal treated articles for the general public (episode 12) Podcast about disinfection products for the general public (episode 13)	Sweden
Mosquito and tick repellent - Kemikalieinspektionen	https://www.kemi.se/en/chemicals-in-our-everyday-lives/advice-on-chemicals-in-your-home/means-against-pests-and-insects/mosquito-and-tick-repellent	Sweden
Rats and mice - Kemikalieinspektionen	https://www.kemi.se/en/chemicals-in-our-everyday-lives/advice-on-chemicals-in-your-home/means-against-pests-and-insects/rats-and-mice	Sweden
Remediation in public places - Kemikalieinspektionen	https://www.kemi.se/en/chemicals-in-our-everyday-lives/advice-on-chemicals-in-your-home/means-against-pests-and-insects/remediation-in-public-places	Sweden
Wood - Kemikalieinspektionen	https://www.kemi.se/en/chemicals-in-our-everyday-lives/advice-on-chemicals-in-your-home/construction-products/wood https://www.kemi.se/global/faktablad/faktablad-om-impregnerat-virke.pdf (Swedish)	Sweden
Schweizerische Eidgenossenschaft-Produktregister Chemikalien Swiss Confederation	https://www.gate.bag.admin.ch/rpc/ui/home	Switzerland
Ongediertebestrijding | Milieu Centraal	https://www.milieucentraal.nl/huis-en-tuin/ongediertebestrijding/	The Netherlands

Ressource	Link	Country
Veilig gebruik van biociden | Bestrijdingsmiddelen | Rijksoverheid.nl	https://www.rijksoverheid.nl/onderwerpen/bestrijdingsmiddelen/biociden	The Netherlands
Waarzitwatin.nl - Over chemische stoffen in producten in en om het huis | Waarzitwatin | Rijksoverheid	https://waarzitwatin.nl/	The Netherlands
Workshop conclusions on the ECHA Website (co-host)	https://echa.europa.eu/documents/10162/3079426/substitution_workshops_lessons_antifouling_workshop_5_oct_2018_final.pdf/4fa1c925-ebad-166d-93f5-0dcb09373bd3	The Netherlands /EU
Workshop innovatie antifouling pleziervaart krijgt vervolg	https://www.kennisnetwerkbiociden.nl/nieuws/workshop-innovatie-antifouling-pleziervaart-krijgt-vervolg?utm_source=Spike&utm_medium=email&utm_campaign=Kennisnetwerk+Biocide	The Netherlands /EU
Workshop presentations on the ECHA Website (co-host)	https://webgate.ec.europa.eu/s-circabc/faces/jsp/extension/wai/navigation/container.jsp	The Netherlands /EU