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10 general principles for a Sustainable Management of Harmful Organisms (SuMaHO)

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10 general principles for a Sustainable Management of Harmful Organisms (SuMaHO)

IOMC

INTER-ORGANIZATION PROGRAMME FOR THE SOUND MANAGEMENT OF CHEMICALS

A cooperative agreement among FAO, ILO, UNDP, UNEP, UNIDO, UNITAR, WHO, World Bank and OECD

Environment Directorate

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

Paris 2023

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10 general principles for a Sustainable Management of Harmful Organisms (SuMaHO)

These general principles of sustainable management of harmful organisms are valid for those organisms posing a potential threat for humans, animals or materials. They pick up the idea of the concept of Integrated Pest Management (IPM) for plant protection products and translate it to biocides[1]. It is a holistic approach that includes a prioritization and combination of available effective measures to minimize harm for humans and the environment.

1. **Take preventive measures**: Beneficial conditions allowing intrusion, settlement, development or reproduction of harmful organisms should be adapted to prevent this, if possible.
2. **Support antagonists**: Especially for rodents and insects, natural antagonists should be supported. If control measures are deemed necessary, unintentional side effects on antagonists need to be considered during choice of measures.
3. **Analyse the situation**: Presence of harmful organisms should be monitored and their potential of doing harm should be identified as required to conduct targeted management measures. The same holds true for all circumstances influencing the infestation or the contamination with germs and its management.
4. **Know the options**: Current state of knowledge in science and technology on the biology and management of the harmful organism needs to be determined. This includes preventive, non-biocidal, and biocidal measures, respectively, for its effective management and the related hazards and risks.
5. **Define the goal**: The goal of management measures needs to be defined to select appropriate measures. It should reflect what is realistic and expedient under the circumstances on site. Legal requirements as well as potential consequences of implementing or waiving any management measures need to be incorporated in the decision.
6. **Decide on necessity**: Based on the knowledge on the targeted harmful organism and the defined goal a decision needs to be taken whether management options are necessary on site at the given time.
7. **Choose the approach**: Priority should be given to those effective measures with the lowest negative impact on humans and the environment, especially non-biocidal options. If biocidal products need to be used, efficacious options posing the lowest risks for humans and the environment should be chosen. Their use needs to be combined with preventive and non-biocidal measures to reduce their use to the minimum necessary. Potential side effects need to be reduced further by using suitable procedures and techniques. With regard to harmful vertebrates, measures should be as humane as possible. The appropriate timing of the measures has to be defined based on the biology of the harmful organism and the relevant circumstances.

[1] The approach is applicable to management concepts of harmful organisms on site, it is not transferable to preventive treatment of articles with biocides. For disinfectants, IPM measures until now have only been compiled for a very limited range of applications (OECD Series on Biocides No. 12: OECD Survey on integrated pest management (IPM) in the field of private area and public health area disinfectants; ENV/JM/MONO(2016)70). For this reason, the discussion for the applicability of the principles to disinfectants should be postponed to a later point in time when more knowledge on their use is available.

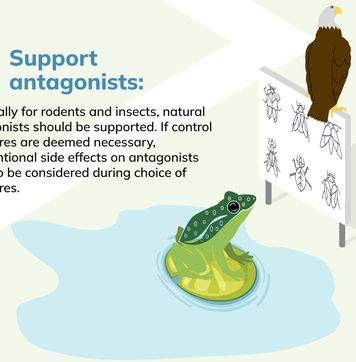
8. **Fight resistance**: If resistance to the biocidal product has already been reported, the active substance is known to act at a single biochemical target site and/or repeated use of the biocidal products is necessary, resistance management strategies need to be applied to maintain efficacy of the products and to avoid cross-resistance. This can include the use of biocidal products with different modes of action or use of non-chemical alternatives, application of the biocidal product at an effective dose, and/or avoidance of release and accumulation in the environment.
9. **Verify and document success**: To ensure a successful operation, achievement of the previously defined goal needs to be checked after measures have been implemented. If the goal has not been reached, the chosen approach and measures need to be adjusted. Achieving or failing to achieve the defined goal as well as measures taken and adjusted need to be documented.
10. **Maintain monitoring**: Continuous monitoring of harmful organism should be implemented to early detect critical reinfestation or germ contamination levels and proceed with appropriate management options. Preventive measures should be re-evaluated and adapted if necessary.

10 general principles for a **Su**stainable **Ma**nagement of **H**armful **O**rganisms **(SuMaHO)**

These general principles of sustainable management of harmful organisms are valid for those organisms posing a potential threat for humans, animals or materials. They pick up the idea of the concept of Integrated Pest Management (IPM) for plant protection products and translate it to biocides [1]. It is a holistic approach that includes a prioritization and combination of available effective measures to minimize harm for humans and the environment.

1 Take preventive measures

Beneficial conditions allowing intrusion, settlement, development or reproduction of harmful organisms should be adapted to prevent this, if possible.



2 Support antagonists:

Especially for rodents and insects, natural antagonists should be supported. If control measures are deemed necessary, unintentional side effects on antagonists need to be considered during choice of measures.

4 Know the options:

Current state of knowledge in science and technology on the biology and management of the harmful organism needs to be determined. This includes preventive, non-biocidal, and biocidal measures, respectively, for its effective management and the related hazards and risks.

3 Analyse the situation:

Presence of harmful organisms should be monitored and their potential of doing harm should be identified as required to conduct targeted management measures. The same holds true for all circumstances influencing the infestation or the contamination with germs and its management.

5 Define the goal:

The goal of management measures needs to be defined to select appropriate measures. It should reflect what is realistic and expedient under the circumstances on site. Legal requirements as well as potential consequences of implementing or waiving any management measures need to be incorporated in the decision.

6 Decide on necessity:

Based on the knowledge on the targeted harmful organism and the defined goal a decision needs to be taken whether management options are necessary on site at the given time.

7 Choose the approach:

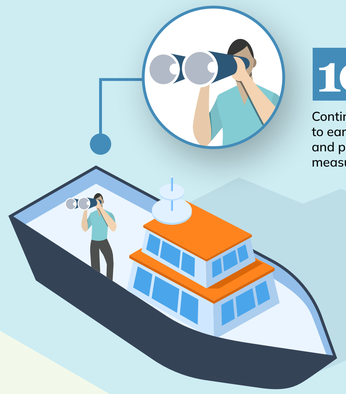
Priority should be given to those effective measures with the lowest negative impact on humans and the environment, especially non-biocidal options. If biocidal products need to be used, efficacious options posing the lowest risks for humans and the environment should be chosen. Their use needs to be combined with preventive and non-biocidal measures to reduce their use to the minimum necessary. Potential side effects need to be reduced further by using suitable procedures and techniques. With regard to harmful vertebrates, measures should be as humane as possible. The appropriate timing of the measures has to be defined based on the biology of the harmful organism and the relevant circumstances.

8 Fight resistance:

If resistance to the biocidal product has already been reported, the active substance is known to act at a single biochemical target site and/or repeated use of the biocidal products is necessary, resistance management strategies need to be applied to maintain efficacy of the products and to avoid cross-resistance. This can include the use of biocidal products with different modes of action or use of non-chemical alternatives, application of the biocidal product at an effective dose, and/or avoidance of release and accumulation in the environment.

9 Verify and document success:

To ensure a successful operation, achievement of the previously defined goal needs to be checked after measures have been implemented. If the goal has not been reached, the chosen approach and measures need to be adjusted. Achieving or failing to achieve the defined goal as well as measures taken and adjusted need to be documented.



10 Maintain monitoring:

Continuous monitoring of harmful organism should be implemented to early detect critical reinfestation or germ contamination levels and proceed with appropriate management options. Preventive measures should be re-evaluated and adapted if necessary.

1 - The approach is applicable to management concepts of harmful organisms on site, it is not transferable to preventive treatment of articles with biocides. For disinfectants, IPM measures until now have only been compiled for a very limited range of applications (OECD Series on Biocides No. 12: OECD Survey on integrated pest management (IPM) in the field of private area and public health area disinfectants; ENV/JM/MONO(2016)70). For this reason, the discussion for the applicability of the principles to disinfectants should be postponed to a later point in time when more knowledge on their use is available.

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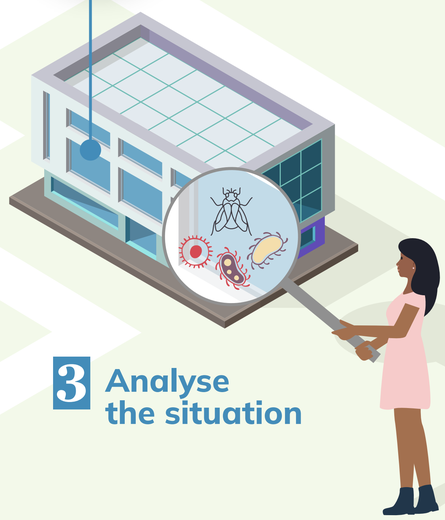
5 Define the goal

1 Take preventive measures

2 Support antagonists

4 Know the options



3 Analyse the situation

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