

New environmental quality standard (EQS) for emamectin benzoate (EmBz): consultation on the implementation timescales

April 2023

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Purpose

This paper sets out Scottish Government's directions to the Scottish Environmental Protection Agency (SEPA) on the application of a new EQS for EmBz. This ensures that SEPA exercise its regulatory and river basin management planning functions. Emamectin benzoate is widely used in the fish farm industry to control sea lice in marine finfish farming.

Our [policy statement](#), provides general information on how we expect SEPA to use EQS for the water environment and how those standards are developed.

The new EQS for EmBz is lower than the EQS SEPA has used previously to set discharge limits for marine finfish farms. We are seeking views on the timescale SEPA should implement to apply the new EQS reducing the discharge limits for these farms. This will enable consistency of EQS levels across all regulated farms in order to achieve improved environmental quality.

SEPA are already using the new EQS for new finfish farms to protect the water environment from deterioration. However, the impact on finfish farm businesses and the operational timescales to make necessary adaptations are important factors. We need to consider these before deciding when action to reduce discharge limits at existing farms should be taken.

Background and rationale for new EQS standards for EmBz

The Scottish Environment Protection Agency derived the previous standards for the EmBz in 1999. The standard was 763 ng/kg of sediment wet weight.¹

In 2016, SEPA commissioned independent scientific work to [review the original EQS for EmBz](#). The review was prompted by indications from a [study by the Scottish Association for Marine Science](#) that the use of the medicine may be affecting crustaceans.

The review was undertaken by the consultancy, WRc and completed in 2017. It recommended a new, tighter EQS of 12ng/kg of sediment dry weight.

In 2017, SEPA conducted a survey of waters around fish farms to trial improved environmental monitoring strategies. Its subsequent [analysis of the environmental samples](#) collected identified evidence of impact on crustaceans. Analysis of the results showed that EmBz had a negative effect on the crustacean abundance and richness. The impact was proportional to the concentrations of EmBz in the seabed and present at concentrations substantially below the original EQS of 763 ng/kg.

¹ The standard recommended by UKTAG are in ng of EmBz per kilogram of dried sediment rather than wet sediment. This provides for scientific consistency in the measurement of the standard and is now normal practice in setting sediment EQSs.

On the basis of the accumulated evidence, SEPA requested the [UK Technical Advisory Group](#) (UKTAG) to develop recommendations on a new EQS for EmBz. In developing the new EQS, UKTAG used the best available scientific information and followed the latest protocols for deriving EQSs.

UKTAG is a partnership between the UK's environment and conservation agencies. It was set up jointly by the devolved administrations to provide scientific advice on EQSs and other matters relating to the protection of the water environment.

As part of the UKTAG process updating the EQS, the sector and the medicine manufacturer were invited to provide any additional information that they may have. UKTAG consulted on its initial proposals for a new EQS in May 2019.

In November 2019, it published its analysis of responses to its consultation on the proposed EQS for EmBz. It concluded that the evidence provided by the aquaculture sector in response to the consultation needed to be reviewed before final recommendations could be made. Also, based on the evidence so far considered, the new standard would not be lower than 23.5 ng/kg of sediment (dry weight).

SEPA then replaced its October 2017 interim regulatory position with a new interim regulatory position based on an interim standard of 23.5ng/kg of sediment dry weight. As with its previous interim regulatory position, the new position only applied to new fish farm applications, or applications to increase discharges at existing fish farms.

UKTAG published its [recommendations](#) following independent scientific peer review in July 2022, recommending a new EQS for marine sediments of 131 ng/kg sediment (dry weight).

Subsequently, in January 2023, Salmon Scotland contacted UKTAG, to alert them to a possible error in the calculation to derive the EQS for EmBz. At the same time, the Scottish Government paused the launch of the consultation.

This allowed UKTAG to further consider the advice and confirm the outcome of their investigation into the representation by Salmon Scotland.

UKTAG notified the Scottish Government on 22 March that has further considered the advice received from Salmon Scotland and signed off the report and latest recommendation.

The new recalculated recommended EQS for marine sediment therefore changed from 131 ng/kg dry weight to 272 ng/kg dry weight.

The thresholds and times of when EQS changes took place are set out in the table below:

EQS	
	Sediment (ng/kg dwt) EmBz concentration per kilogram of marine sediment (ng)
Existing standard threshold	763 (wet weight) Equivalent to approximately 1,520 (dry weight)
Interim position	12 (dry weight)
Updated interim position	23.5 (dry weight)
UKTAG recommendation, July 2022	131 (dry weight)
UKTAG recalculated recommendation March 2023	272 ng/kg dry weight

Table 1: EQS threshold changes over time

UKTAG process for setting standards

In deriving the EQS for EmBz, UKTAG considered several sources of information and followed internationally-accepted guidance set under the EU Water Framework Directive. UKTAG derived these standards, based mainly on laboratory work on ecotoxicity, supported by field data including data submitted by industry.

EQSs are set by UKTAG to be protective of all species that may be at risk. For example aquatic animals and plants, sediment-dwelling organisms, or predators that feed on aquatic organisms. It then collates information on the effects on aquatic biota, assesses the quality of the data, decides which are critical for the determination of the standards. This process and the outputs are documented in the EQS report.

An independent peer review of the EQS report ensures that proposals are valid scientifically, and that the data used to derive them are sound and complete. Independent peer reviewers advise on the adequacy of the data and the extent to which these data should influence the final EQS. The independent peer reviewers also advise on how the UKTAG should interpret the data. Results are discussed between UKTAG members and peer reviewers.

When the UKTAG recommend EQSs to UK administrations, Scottish Ministers decide how to take forward the recommendation. To prevent operational disruption for the sector, we are consulting in order to consider how to phase in the new EQS.

Regulatory approach

After consideration of consultation responses, we will direct SEPA to apply the new EQS for EmBz. Also to establish a timescale for applying the new EQS to previously authorised discharges of EmBz.

SEPA will then work with the operators of marine finfish farms to ensure they have the information they need on the reduction in their licenced discharge limits that will be required in due course so that they can plan accordingly.

Emamectin Benzoate is very persistence in the environment. As such, it is likely to take some time before concentrations resulting from previous discharges decline sufficiently to achieve the new EQS. We expect SEPA to take this into account in planning how operators of marine finfish farms demonstrate progress in delivering environmental improvement.

Consultation

Implementation of the new proposed emamectin benzoate EQS

SEPA has to make decisions on applications for new or increased discharges of EmBz. SEPA also make proposals to change the location at which authorised discharges take place (i.e. proposals to relocate fish pens).

SEPA makes these [decisions](#) based on the best available science on risk to the water environment., As is appropriate, SEPA will apply UKTAG's recommended EQS to protect the water environment against deterioration. SEPA will apply the new EQS to previously authorised discharges once Scottish Ministers provide directions to do so.

Fish production cycles at sea can last up to around 24 months. In identifying the appropriate timescale for applying the new EQS to existing discharges, we consider basing the implementation timescale on a production cycle, or multiple thereof. This is likely to be the best fit with planning and investment horizons across multiple operators.

Taking this approach, we would like your feedback on what would be the appropriate timetable that provides marine finfish farm operators with a reasonable period to make any required adjustments to meet the new EQS standards but that does not unduly delay improvement in the quality of Scotland's coastal waters.

Consultation questions

We would like your views on what timescales you consider to be most appropriate for the implementation of the new EmBz EQS and why, for example, 0, 24 or 48 months.

Please provide any evidence on how long it might take to implement any adjustment to sea lice management which may be required as a result of these changes.

Where appropriate, please provide any available information about the socio-economic impacts of implementing the new EmBz EQS.

Responding to this Consultation

We are inviting responses to this consultation by 24 July 2023.

Please respond to this consultation using the Scottish Government's consultation hub, Citizen Space (<http://consult.gov.scot>). Access and respond to this consultation online at <https://consult.gov.scot/environment-forestry/implementation-timescales-of-new-egs-for-embz>. You can save and return to your responses while the consultation is still open. Please ensure that consultation responses are submitted before the closing date of 24 July 2023.

If you are unable to respond using our consultation hub, please complete the Respondent Information Form to:

Water Environment Team
Scottish Government
3H SOUTH
VICTORIA QUAY
EDINBURGH, EH6 6QQ

Handling your response

If you respond using the consultation hub, you will be directed to the About You page before submitting your response. Please indicate how you wish your response to be handled and, in particular, whether you are content for your response to be published. If you ask for your response not to be published, we will regard it as confidential, and we will treat it accordingly.

All respondents should be aware that the Scottish Government is subject to the provisions of the Freedom of Information (Scotland) Act 2002 and would therefore have to consider any request made to it under the Act for information relating to responses made to this consultation exercise.

If you are unable to respond via Citizen Space, please complete and return the Respondent Information Form included in this document.

To find out how we handle your personal data, please see our privacy policy: <https://www.gov.scot/privacy/>

Next steps in the process

Where respondents have given permission for their response to be made public, and after we have checked that they contain no potentially defamatory material, responses will be made available to the public at <http://consult.gov.scot>. If you use the consultation hub to respond, you will receive a copy of your response via email.

Following the closing date, all responses will be analysed and considered along with any other available evidence to help us. Responses will be published where we have been given permission to do so. An analysis report will also be made available.

Comments and complaints

If you have any comments about how this consultation exercise has been conducted, please send them to the contact address above or at waterenvironment@gov.scot.

Scottish Government consultation process

Consultation is an essential part of the policymaking process. It gives us the opportunity to consider your opinion and expertise on a proposed area of work.

You can find all our consultations online: <http://consult.gov.scot>. Each consultation details the issues under consideration, as well as a way for you to give us your views, either online, by email or by post.

Responses will be analysed and used as part of the decision making process, along with a range of other available information and evidence. We will publish a report of this analysis for every consultation. Depending on the nature of the consultation exercise the responses received may:

- indicate the need for policy development or review
- inform the development of a particular policy
- help decisions to be made between alternative policy proposals
- be used to finalise legislation before it is implemented

While details of particular circumstances described in a response to a consultation exercise may usefully inform the policy process, consultation exercises cannot address individual concerns and comments, which should be directed to the relevant public body.



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