



# AAC Recommendation on the draft factsheets on Good Husbandry Practices for Turbot, Senegalese Sole and Meagre

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## I. Background

On behalf of the European Commission, the EU Aquaculture Assistance Mechanism has been developing draft good husbandry practice documents for three additional aquaculture species: sole, turbot, and meagre. These species-specific guidelines will complement the existing document on Good Husbandry Practices for aquaculture (GHPs)<sup>1</sup>.

The GHPs document provides a non-exhaustive list of general and species-specific good husbandry practices (GHPs) on key topics related to welfare and health in the different production techniques of some European aquaculture species. The selected GHPs aim to help implementing, in a practical way, key legal obligations of operators - and sometimes go beyond the key legal obligations – on animal health and welfare requirements. The GHPs document also tries to distinguish between practices that are currently implemented by the sector and those related to innovative practices that are still under research, mainly coming from scientific literature.

In June 2025, the European Commission consulted the Aquaculture Advisory Council (AAC) to gather feedback on the draft new good husbandry practice documents for sole, turbot, and meagre.

The AAC welcomes these new draft factsheets.

## II. Recommendations

### Recommendation to the European Commission

*For simplicity, we have proposed amendments in a table which includes original text, amended text (amendments in bold) and justification.*

- The AAC asks for the following amendments to be made to the draft factsheets on Good Husbandry Practices for Turbot, Senegalese Sole and Meagre, based on the justification provided:

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<sup>1</sup> [https://aquaculture.ec.europa.eu/system/files/2024-10/good\\_husbandry\\_practices\\_for\\_aquaculture-HZ0124011ENN.pdf](https://aquaculture.ec.europa.eu/system/files/2024-10/good_husbandry_practices_for_aquaculture-HZ0124011ENN.pdf)

Suggested edits to European TURBOT ( <i>Scophthalmus maximus</i> ) - Good husbandry practices		
Text	Proposed amendment	Justification
Feeding 1.c.  Dry feed is distributed 2–4 times per week ad libitum, depending on the stage of the reproductive cycle (Rodriguez, J.L., 2011).	Feeding 1.c.  Dry feed is distributed 2–4 times per week ad libitum, depending on the stage of the reproductive cycle (Rodriguez, J.L., 2011), <b>ensuring feed is made available to the animals daily.</b>	Under <i>Good Husbandry Practices for Brookstock</i> p1. It states that it is common to feed broodstock 2-4 times ad libitum. It is not clear whether the feed remains available. It should be clear that feed should be available to the animals daily.
Handling 5.  Fasting during 24-60 hours before operations is needed to empty the gut and to reduce oxygen requirements (Jia, Yudong. et al., 2018; Andersen, N. G., 2022).	Handling 5.  Fasting during 24-60 hours before operations is needed to empty the gut and to reduce oxygen requirements (Jia, Yudong. et al., 2018; Andersen, N. G., 2022), <b>to avoid stress, fasting periods should never be longer than needed to empty the gut.</b>	Under handling on p3, no 5 fasting. It should be added that to avoid stress, fasting periods should never be longer than is needed to empty the gut.
	Stocking densities. 2. Juvenile – weaning units (land-based culture in flow-through and RAS):  <b>b. (new)</b>  <b>Low stocking densities are reported to improve</b>	According to the fairfish database <sup>2</sup> , low stocking densities are reported to improve growth and welfare in juveniles.

<sup>2</sup> <https://fair-fish-database.net/db/species/scophthalmus-maximus/farm/welfarecheck/>



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	growth and welfare in juveniles (Fair Fish Database, 2024)	
	<p>Environmental enrichment, Good husbandry practices</p> <p><b>3. (new)</b></p> <p><b>As turbot are bottom dwellers and that have a preference for sand as bottom dwellers at all ages (C. R. Sparrevohn<sup>3</sup> &amp; J. G. Støttrup<sup>4</sup>, 2003), Suitable bottom substrate should be provided, consistent with other requirements such as biosecurity and disease prevention.</b></p>	<p>Under environmental enrichment page 6 it should be noted that turbot are bottom dwellers and that have a preference for sand as bottom dwellers at all ages (C. R. Sparrevohn &amp; J. G. Støttrup, 2003)<sup>5</sup>. Suitable bottom substrate should be provided, consistent with other requirements such as biosecurity.</p> <p>As a general principle, the feasibility of providing for ethological needs should be considered as part of the suitability of any system being planned for farming turbot.</p>
	<p>Vaccination and treatments, Good husbandry practices 7. (new)</p> <p><b>It is recommended where possible to consider the use of anaesthetics during handling for vaccination or antiparasitic treatment (if performed by injection) as handling without anaesthesia for invasive procedures increases stress and may compromise welfare.</b></p>	<p>Text: Vaccination and treatment – no mention of anaesthesia during handling for treatment</p> <p>Add a requirement or recommendation to consider the use of anaesthetics during handling for vaccination or anti parasitic treatment (if performed by injection) as handling without anaesthesia for invasive procedures increases</p>

<sup>3</sup> <https://onlinelibrary.wiley.com/authored-by/Sparrevohn/C.+R.>

<sup>4</sup> <https://onlinelibrary.wiley.com/authored-by/St%C3%B8ttrup/J.+G.>

<sup>5</sup> <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1095-8649.2003.216bs.x>

		stress and may compromise welfare. Aligns with EU Platform guidance on fish handling <sup>6</sup> .
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Suggested edits to Senegalese SOLE ( <i>Solea Senagalensis</i> ) - Good husbandry practices		
Text	Proposed amendment	Justification
<p>Feeding 1.</p> <p>Dry feed is distributed 2–4 times per week ad libitum, depending on the stage of the reproductive cycle (Rodriguez, J.L. et al., 2014).</p>	<p>Feeding 1.</p> <p>Dry feed is distributed 2–4 times per week ad libitum, depending on the stage of the reproductive cycle (Rodriguez, J.L. et al., 2014), <b>ensuring feed is made available to the animals daily.</b></p>	<p>Under Good Husbandry Practices for Brookstock p1. It states that it is common to feed broodstock 2-4 times ad libitum. It is not clear whether the feed remains available. It should be clear that feed should be available to the animals daily.</p>
<p>Handling 1. e.</p> <p>Injection of GnRHa, at doses of 5–25 lg kg<sup>-1</sup> body weight (BW), induced a transient elevation of plasma E2 and T (Agulleiro et al. ,2006; Guzman et al., 2009a,b), slightly stimulated final oocyte maturation (Guzman et al., 2009b) and induced egg spawning at 2–3 days after treatment (Agulleiro et al., 2006).</p>	<p>Handling 1. e.</p> <p>Injection of GnRHa, at doses of 5–25 lg kg<sup>-1</sup> body weight (BW), induced a transient elevation of plasma E2 and T (Agulleiro et al. ,2006; Guzman et al., 2009a,b), slightly stimulated final oocyte maturation (Guzman et al., 2009b) and induced egg spawning at 2–3 days after treatment (Agulleiro et al., 2006).</p>	<p>It should be questioned whether the additional stress of handling is justified by a slightly stimulated final maturation of oocytes.</p>

<sup>6</sup> [aw\\_platform\\_plat-conc\\_guide\\_farmed-fish\\_en.pdf](#)



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	However, breeders should consider whether this practice is necessary. Stressful handling should be avoided where possible.	
Handling 4.  Fasting during 8-60 hours before operations is needed to empty the gut and to reduce oxygen requirements (Vinagre, C. et al., 2007).	Handling 4.  Fasting during 8-60 hours before operations is needed to empty the gut and to reduce oxygen requirements (Vinagre, C. et al., 2007), <b>to avoid stress, fasting periods should never be longer than is needed to empty the gut.</b>	Under handling on p3, no 4 fasting. It should be added to avoid stress, that fasting periods should never be longer than is needed to empty the gut.
	Stocking densities 2. c. (new) <b>Low stocking densities are reported to improve growth and welfare in juvenile turbot. It should be investigated whether this also applies to sole (Fair Fish Database, 2024)</b>	According to the fairfish database <sup>7</sup> , low stocking densities are reported to improve growth and welfare in juvenile turbot. It should be investigated whether this also applies to sole.
	(new) Environmental enrichment a. Sole is a benthic species generally inhabiting sandy or muddy bottoms (Fair Fish Database, 2024). Unless proven otherwise, it should be assumed that they are likely as with other flatfish like turbot to have a preference for the provision of suitable bottom substrate.	On page 6, we think there should be a section added on environmental enrichment. According to the fair-fish database <sup>8</sup> , sole is a benthic species generally inhabiting sandy or muddy bottoms. Unless proven otherwise, it should be assumed that they are likely as with other flatfish like turbot to have a preference for the provision of suitable bottom substrate.

<sup>7</sup> <https://fair-fish-database.net/db/species/scophthalmus-maximus/farm/welfarecheck/>

<sup>8</sup> <https://fair-fish-database.net/db/species/solea-senegalensis/farm/welfarecheck/>





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		As a general principle, the feasibility of providing for ethological needs should be considered as part of the suitability of any system being planned for farming sole.
	<b>(new) Exploring alternative feeds</b> Further exploration of high-welfare, low-trophic feed alternatives (e.g., algae-based) is encouraged to reduce reliance on sentient feed animals.	Text: Functional feed – use of animal-based feed inputs (e.g., molluscs, poultry meal).  Place after current no 3 which refers to replacements for fishmeal.  Include a note encouraging exploration of high-welfare, low-trophic feed alternatives (e.g., algae-based) to reduce reliance on sentient feed animals.

**Suggested edits to Meagre (*Agryosomus regius* A.) - Good husbandry practices**

Text	Proposed amendment	Justification
Feeding 1. b.  Successful maturation and spawning can also be achieved by feeding three times per week, twice on a commercial broodstock diet and once on a fresh diet of mussels and cuttlefish (Duncan, N.J. et al., 2013).	Feeding 1. b.  Successful maturation and spawning can also be achieved by feeding three times per week, twice on a commercial broodstock diet and once on a fresh diet of mussels and cuttlefish (Duncan, N.J. et al., 2013), <b>ensuring that feed is available to the animals daily.</b>	Under <i>Good Husbandry Practices for Brookstock</i> p1, 1b. It states that it is common to feed broodstock 3 times on a commercial diet and once on a fresh diet such as mussels. It is not clear whether some feed remains available. It should





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		be clear that feed should be available to the animals daily.
	<b>(new) Environmental enrichment. 1. The feasibility of providing for ethological needs should be considered as part of the suitability of any system being planned for farming meagre.</b>	<p>On page 6, we think there should be a section added on environmental enrichment.</p> <p>As a general principle, the feasibility of providing for ethological needs should be considered as part of the suitability of any system being planned for farming meagre.</p>



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