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*A preliminary approach on the stress assessment through harmless procedures in farmed seabream (*Sparus aurata*)*

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Abstract

*Fish welfare is a key factor in ensuring successful cultures. Farmed fish that are stressed have been shown to be susceptible to pathologies and present lower growth rates. The present work seeks to check the efficacy of faecal cortisol as a non-invasive method of assessing acute stress in a commercial cultured fish, the gilthead seabream (*Sparus aurata*). Typical stress markers (plasma cortisol, glucose and lactate) and faecal cortisol were measured in basal and post-stress (air exposure) state. Plasma and faecal cortisol, and plasma lactate after acute stress varied significantly compared to basal levels. Moreover, faecal cortisol showed a significant correlation with plasma cortisol and lactate. In conclusion, this work describes an easy, non-invasive and practical technique to assess acute stress in farmed fish. Further studies are needed to focus on other practical procedures for chronic stress measurements in sea-farms in order to improve the welfare of these animals.*

Keywords: *animal welfare, aquaculture, faecal cortisol, gilthead seabream, sea-farm, stress*