Traceability is the ability to trace the history, application or location of a particular product and may be related to their origin, history, processing, distribution and location after production. Among the different issues related to fish traceability is the need to search for chemical and physical methods that are able to distinguish the different fish species, their geographical origin and production method: farmed or wild. The objective of this work was to evaluate the effect of size and domestication level in the chemical composition and fatty acid profile of wild and farmed Portuguese meagre meat, as tools to trace this specie. Specimens were divided into four groups: farmed large (FL), wild large (WL) (approx 2kg), farmed small (AS) and wild small (WS) (approx 0.6kg). The size and domestication level influenced the fat content and fatty acid profile. Fat values were higher in farmed than wild fish, this variation being closely related to the intake and food availability. Farmed fish showed lower of saturated and polyunsaturated fatty acids (PUFA) and higher content of monounsaturated fatty acids (MUFA) and n-6. The percentage of MUFA were FL>FS>WL>WS, respectively. WL showed a higher content of saturated fatty acids. WS showed higher level of the fatty acids EPA and ±DHA than farmed. Our findings show that fatty acid profile and fat can be used to trace meagre origin and size.

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