

AquaVitae project (H2020) CS10 – Comparison of variation in morphogeometrical features of intramuscular bone of tambaqui *Colossoma macropomum* using dissection and X-ray imaging methods

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Resumo do Tema:

One of the main issues in the processing sector of the tambaqui *Colossoma macropomum* is the removal and/or fragmentation of intermuscular bones (IBs), that negatively impact its production chain. In this sense, we quantitatively examined the IB variation on farmed tambaqui ($n=127$) by comparing the direct anatomical dissection with the high-resolution X-ray imaging method. Number of IBs from the anatomical dissection on the fish left side (27.3 ± 5.70 bones) was similar to that of X-ray analysis (26.9 ± 6.03 bones) ($P>0.05$). Also, 76% of deviation between the two studied methods in IB number was 1 to 3 indicating both methods are equally efficient to identify and quantify IBs. We found a strong positive correlation ($R=0.8$, $P<0.001$) between the X-ray and the dissection methods. Our predictive models indicated that more than 50% of variation of IB length can be explained by growth parameters. Our results demonstrated that the X-ray method can provide accurate phenotypic data (in vivo) for IB counting and length measurements by extrapolating from the standard length, body weight and trunk over axis area of tambaqui.