

**Additional File 3 Scoping searches and benchmark articles to test comprehensiveness of search strategy.**

Table 1. Scoping searches carried out to test search string in Web of Science, Scopus and CAB abstracts and Food Science Source combined

Search ID	Search string	Number of results returned			Notes
		Web of Science (Topic)	Scopus (Title, abstract & keyword)	CAB abstracts & Food Science Source combined (abstracts)	
#1	(*Fish*) AND (stun* OR slaughter*) NOT (stunt* OR pig* OR swine OR pork OR cattle OR cow* OR beef OR chicken* OR poultry OR turkey* OR lamb* OR sheep OR calf OR calves OR bull* OR jellyfish* OR crab* OR trematode*)	943	1096	1,059	Limiters added to filter out irrelevant articles.
#2	(*Fish*) AND (stun* OR slaughter* OR welfare) NOT (stunt* OR pig* OR swine OR pork OR cattle OR cow* OR beef OR chicken* OR poultry OR turkey* OR lamb* OR sheep OR calf OR calves OR bull* OR jellyfish* OR crab* OR trematode*)	3,481	4,449	2,958	Welfare added to search string.
#3	(*Fish*) AND (stun* OR slaughter* OR welfare OR kill*) NOT (stunt* OR pig* OR swine OR pork OR cattle OR cow* OR beef OR chicken* OR poultry OR turkey* OR lamb* OR sheep OR calf OR calves OR bull* OR jellyfish* OR crab* OR trematode*)	11,681	7,198	14,079	Kill added to string but this returns a large number of irrelevant articles (e.g. articles about pollution)
#4	(*Fish*) AND (stun* OR slaughter* OR welfare OR electronarcosis OR euthan* OR "electric shock") NOT (stunt* OR pig* OR swine OR pork OR cattle OR cow* OR beef OR chicken* OR poultry OR turkey*	4,132	5,316	3,432	Added electronarcosis, euthanasia and electric shock. Keep these terms which retrieve relevant hits. Also tried spik* which increases the number of

	OR lamb* OR sheep OR calf OR calves OR bull* OR jellyfish* OR crab* OR trematode*)				hits significantly and those relevant are picked up using the terms we have already included. Therefore, we will not include this term. Also tried ikejime which does not return any more hits and any relevant articles using this term are picked up by the terms already included. Use this search string for the literature searches in English language.
#1b	(Pez OR Peces OR Pescado*) AND (aturdi* OR sacrifica*) NOT (cerd* OR puerco* OR vaca* OR buey* OR pollo* OR caballo* OR pav* OR terner* OR oveja* OR cabra* OR becerr* OR toro OR medusa* OR cangrejo* OR trematodo*)	0	0	3	No results using Spanish language for Web of Science and Scopus, and only 1 relevant result about stunning in CAB & Food Science combined.
#2b	Pez OR Peces OR Pescado*) AND (aturdi* OR sacrifica* OR bienestar) NOT (cerd* OR puerco* OR vaca* OR buey* OR pollo* OR caballo* OR pav* OR terner* OR oveja* OR cabra* OR becerr* OR toro OR medusa* OR cangrejo* OR trematodo*)	0	5	10	Only the same article above about stunning in CAB & Food Science combined. Two articles in Spanish language from Scopus that are potentially relevant.
#3b	(Pez OR Peces OR Pescado*) AND (aturdi* OR sacrifica* OR bienestar OR mata*) NOT (cerd* OR puerco* OR vaca* OR buey* OR pollo* OR caballo* OR pav* OR terner* OR oveja* OR cabra* OR becerr* OR toro OR medusa* OR cangrejo* OR trematodo*)	0	10	11	Same articles found as #2b and no further relevant results. Remove 'mata*' because 'kill*' returns large number of hits in English language searches.
#4b	(Pez OR Peces OR Pescado*) AND (aturdi* OR sacrifica* OR bienestar OR electronarcosis OR eutanasia* OR "descarga eléctrica*") NOT (cerd* OR puerco* OR vaca* OR buey* OR pollo* OR caballo* OR pav* OR terner* OR oveja* OR cabra* OR becerr* OR toro OR	2	5	10	Same results as for #2b returned for Scopus and EBSCO and no relevant results returned for WOS. This search string will be used for the Spanish language searches.

medusa* OR cangrejo* OR tremátodo*)				
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### **Benchmark articles to test the comprehensiveness of search string #2 from Table 1. in Web of Science and Scopus**

With the exception of Daskalova & Pavlov (2015) which was only found in Scopus, all of the other articles were identified in both databases

Anders N., Roth B, Grimsbø E., Breen M. Assessing the effectiveness of an electrical stunning and chilling protocol for the slaughter of Atlantic mackerel (*Scomber scombrus*). 2019. PLoS ONE 14(9): e0222122.

Daskalova & Pavlov 2015 Effect of two stunning methods on postmortem muscle PH and meat quality of common carp (*Cyprinus carpio* L.). Bulgarian Journal of Veterinary Medicine 18(1):83-90.

De Oliveira Filho P. R. C., Girao M.P.J., Lapa-Guimarães J., Natori M. M., Vargas S. C., Viegas E.M.M. Impact of electrical stunning on fish behavior and meat quality of pacu (*Piaractus mesopotamicus*), 2016; Acta Scientiarum-technology 38: 81-86

Lambooij E, Digre H, Reimert HGM, Aursand IG, Grimsmo L, van de Vis JW. Effects of on-board storage and electrical stunning of wild cod (*Gadus morhua*) and haddock (*Melanogrammus aeglefinus*) on brain and heart activity. Fish Res. 2012;127–128

Lambooij B, Digre H, Erikson U, Reimert H, Burggraaf D, van de Vis H. Evaluation of Electrical Stunning of Atlantic Cod (*Gadus morhua*) and Turbot (*Psetta maxima*) in Seawater. J Aquat Food Prod Technol. 2013;22: 371–379.

Papaharisis, L., Tsironi, T., Dimitroglou, A., Taoukis, P., Pavlidis, M. (2019). Stress assessment, quality indicators and shelf life of three aquaculture important marine fish, in relation to harvest practices, water temperature and slaughter method. Aquaculture Research 50(9): 2608-2620.

Nordgreen AH, Slinde E, Møller D, Roth B. Effect of Various Electric Field Strengths and Current Durations on Stunning and Spinal Injuries of Atlantic Herring. J Aquat Anim Health. 2008;20: 110–115. pmid:18783132

Robb, D.H.F., Roth, B. Brain activity of Atlantic salmon (*Salmo salar*) following electrical stunning using various field strengths and pulse durations. Aquaculture 2003; 216: 363-369.

Roth, B., Slinde, E., Robb, D. (2007). Percussive stunning of Atlantic salmon (*Salmo salar*) and the relation between force and stunning. Aquacultural Engineering. 36. 192-197. 10.1016/j.aquaeng.2006.11.001.

Zampacavallo G, Parisi G, Mecatti M, Lupi P, Giorgi G and Poli B M. Evaluation of different methods of stunning/killing sea bass (*Dicentrarchus labrax*) by tissue stress/quality indicators. J Food Sci Technology. 2015;52(5):2585–2597