**Table S2.** Summary of studies using stable isotopes to differentiate between wild and captive animals organized by taxon group (fish, amphibian, reptile, bird, and mammal). In “Summary Results” the equal sign (=) indicates the absence of significant differences in inferential tests.

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| --- | --- | --- | --- | --- | --- | --- |
|  | **TAXON (SPECIE)** | **ISOTOPES ANALYZED** | **TISSUE** | **LOCAL (COUNTRY)** | **SUMMARY RESULT** | **REFERENCE** |
|  | *Salmo salar* | *δ*13C, *δ*15N | Muscle | Canada | *δ*13Cwild < *δ*13Ccaptive  *δ*15Nwild > *δ*15Ncaptive | (Dempson & Power, 2004) |
| **FISH** | *Sparus aurata* | *δ*13C, *δ*15N | Muscle | Italy;  France | *δ*13Cwild > *δ*13Ccaptive  (Based on no overlaps between groups) | (Rojas et al., 2007) |
| *Dicentrarchus labrax* | *δ*13C, *δ*15N, *δ*18O | Muscle oil | England; Scotland; Greece | *δ*13Cwild > *δ*13Ccaptive  *δ*15Nwild < *δ*15Ncaptive  *δ*18Owild = *δ*18ONcaptive | (Bell et al., 2007)\* |
| *Salmo salar* | *δ*13C, *δ*15N,  *δ*18O | Muscle | Ireland and Norway | *δ*13Cwild range < *δ*13Ccap-conventional range  *δ*15Nwild variation > *δ*13Ccaptive variation  *δ*15Nwild < *δ*15Ncap-organic  *δ*18Owild = *δ*18Ocap-conventional = *δ*18Ocap-organic | (Molkentin et al., 2007) |
| *Sparus aurata* | *δ*13C, *δ*15N | Muscle (red and white), liver and gills | Spain | *δ*13Cwild > *δ*13Ccaptive  *δ*15Nwild < *δ*15Ncaptive | (Serrano, Blanes & Orero, 2007) |
| *Psetta maxima* | *δ*13C, *δ*15N | Muscle | Denmark, Spain, Netherlands | *δ*13Cwild > *δ*13Ccaptive  *δ*13Cwild-Netherlands > *δ*13Ccaptive  *δ*15Nwild-Netherlands > *δ*15Nwild-Denmark > *δ*15Ncaptive | (Busetto et al., 2008) |
| *Oncorhynchus tshawytscha; O. kisutch; Salmo salar* | *δ*13C, *δ*15N | Muscle | Pacific and Atlantic Ocean | 86 – 100% hits using different multivariate analyses: LDA, QDA, NN, PNN, and NNB | (Anderson, Hobbie & Smith, 2010) |
| *Dicentrarchus labrax* | *δ*13C, *δ*15N | Muscle | FAO zone 37.1 and 27 | *δ*13Cwild > *δ*13Ccaptive  *δ*15Nwild > *δ*15Ncaptive | (Fasolato et al., 2010) |
| *Pseudoplatystoma fasciatum* | *δ*13C, *δ*15N | Muscle | Brazil | *δ*13Cwild < *δ*13Ccaptive  *δ*15Nwild < *δ*15Ncaptive (rainy season) | (Sant’Ana, Ducatti & Ramires, 2010) |
| *Salmo salar; Oncorhynchus mykiss* | *δ*13C, *δ*15N | Muscle | Chile | *δ*13Cwild < *δ*13Ccaptive  *δ*15Nwild < *δ*15Ncaptive  93.9% hits in Discriminant Analysis | (Schröder & Garcia de Leaniz, 2011) |
| *Salmo trutta* | *δ*13C, *δ*34S | Scale | Poland | *δ*13Cwild *<δ*13Ccaptive  *δ*34Scaptive > *δ*34Swild  (Based on no overlaps between groups) | (Trembaczowski, 2011) |
| *Oncorhynchus nerka; O. kisutch; Salmo salar; S. trutta* | *δ*13C, *δ*15N | Muscle | United States, Ireland, Scotland, Norway, Germany | Bulk: *δ*13Cwild, *δ*13Corganic > *δ*13Cconventional  *δ*15Nwild, *δ*15Norganic > *δ*15Nconventional  Lipids: *δ*13Corganic > *δ*13Cwild, *δ*13Cconventional  (Based on no overlaps between groups) | (Molkentin et al., 2015) |
| *Argyrosomus regius* | *δ*13C, *δ*15N | Muscle | Portugal | *δ*13Cwild > *δ*13Ccaptive  *δ*15Nwild > *δ*15Ncaptive | (Chaguri et al., 2017) |
| **FISH** | *Dicentrarchus labrax* | *δ*13C, *δ*15N | Muscle | Europe | 91% hits in the Discriminant Analysis | (Farabegoli et al., 2018) |
| *Oncorhynchus gorbuscha,*  *Oncorhynchus nerka*  *Salmo salar* | *δ*13C, *δ*15N | Muscle | United States, Norway, Ireland | *δ*13Cbulk: differences between all groups (except wild *vs.* Irish organic *S. salar*; wild *O. gorbuscha vs.* wild *O. nerka* salmon)  *δ*15Nbulk:differences between wild and conventionally farmed  SCIA allowed more accurate results | (Wang et al., 2018) |
| *Lates calcarifer* | *δ*13C e *δ*15N | Muscle | Australia; Malaysia | *δ*13Cwild > *δ*13Ccaptive  (except for Northern Territory – AU: no difference was found)  *δ*15Nwild > *δ*15Ncaptive | (Gopi et al., 2019) |
| *Arapaima spp.* | *δ*13C | Otolith | Brazil | *δ*13Cwild < *δ*13Ccaptive  (Madeira, Solimões and Lower Amazon)  *δ*13Cwild > *δ*13Ccaptive  (Central Amazon basin)  58% hits in the Discriminant Analysis | (Pereira et al., 2019) |
| *Anguilla anguilla* | *δ*13C, *δ*15N | Muscle | Italy, Denmark, Netherlands | Italy, Denmark, and Netherlands:  *δ*13Cwild-sea < *δ*13Ccap-int.-males <*δ*13Cwild-lagoon =*δ*13Ccap-ext = *δ*13Ccap-int-females  *δ*15Nwild-sea =*δ*15Ncap-ext. =*δ*15Ncap-int-female > *δ*15Nwild-lagoon = *δ*15Ncap-int-males  Italy:  *δ*13Cwild-sea < *δ*13Cwild-lagoon =*δ*13Ccap-ext.  *δ*15Nwild-sea =*δ*15Ncap-ext. > *δ*15Nwild-lagoon | (Vasconi et al., 2019) |
| *Oncorhynchus mykiss* | *δ*13C, *δ*15N | Muscle | Argentina | *δ*13Cwild < *δ*13Ccaptive  *δ*15Ncaptive-farmC *> δ*15Nwild = *δ*15Ncaptive-farmB > *δ*15Ncaptive-farmA | (Nabaes Jodar, Cussac & Becker, 2020) |
| *C. carpio; C. idella; H. molitrix; M. piceus* | *δ*13C, *δ*15N | Muscle, scale | China | *δ*13Cwild < *δ*13Clake-farmed = *δ*13Cpond-farmed  *δ*15Nwild < *δ*15Npond farmed  Discriminant model using isotopic and elemental data: 95-100% hits | (Liu et al., 2020) |
| **AMPHIBIAN** | *Hoplobatrachus rugulosus*,  *Fejervarya cancrivora; Limnonectes macrodon* | *δ*13C, *δ*15N, *δ*18O | Muscle, bone | Vietnam; Indonesia | Muscle: differences in *δ*13C, *δ*15N;  SD*δ*15Nwild > SD*δ*15Nfarmed  Bone: differences in *δ*13C and *δ*18O (Vietnam x Indonesia) | (Dittrich, Struck & Rödel, 2017) |
| **REPTILE** | *Shinisaurus crocodilurus* | *δ*13C, *δ*15N | Skin | Vietnam | *δ*13Cwild < *δ*13Ccaptive; *δ*15Nwild < *δ*15Ncaptive  Assignment testwild x captive: 100% hits | (van Schingen et al., 2016) |
| *Python reticulatus*;  *Python bivittatus* | *δ*13C, *δ*15N, *δ*2H | Skin | Vietnam; Indonesia | *P. bivitattus:*  *δ*13Cwild < *δ*13Ccaptive; *δ*15Nwild > *δ*15Ncaptive; *δ*2Hwild =*δ*2HCaptive  100% hits in the Discriminant Analysis  *P. reticulatus*:  *δ*13Cwild-Vietnam<*δ*13Cwild-Indonesia=*δ*13Ccaptive-Vietnam  *δ*2Hwild-Vietnam<*δ*2Hwild-Indonesia = *δ*2Hcaptive-Vietnam  *δ*15Nwild-Vietnam= *δ*15Nwild-Indonesia = *δ*15Ncaptive-Vietnam | (Natusch et al., 2017) |
| *Trachemys scripta elegans* | *δ*13C e *δ*15N | Carapace | Australia | *δ*15Nwild < *δ*15Ncaptive  Assignment test: minimum accuracy of 96% | (Hill et al., 2020) |
| **BIRD** | *Carduelis carduelis* | *δ*2H | Feather | England | *δ*2HC.c. major < *δ*2HC.c. brittanica =*δ*2HCaptive | (Kelly, Thompson & Newton, 2008) |
| *Colinus virginianus* | *δ*13C, *δ*15N, *δ*34S, *δ*2H | Feather | United States | 100% hits in the Discriminant Analysis (wild *vs.* captive); 99% hits in the Discriminant Analysis (different farms)  Isotopes used: *δ*13C, *δ*15N, *δ*34S, | (Castelli & Reed, 2017) |
| *Psittacus erithacus* | *δ*13C*, δ*15N, *δ*2H | Feather | South Africa | *δ*13Cwild < *δ*13Ccaptive  *δ*2Hwild < *δ*2Hcaptive | (Alexander et al., 2019) |
| *Emberiza hortulana* | *δ*2H | Feather | France | *δ*2Hwild > δ2Hcaptive | (Jiguet, Kardynal & Hobson, 2019) |
|  | *Cacatua sulphurea, Cacatua sp.* | *δ*13C, *δ*15N | Feather | China | *δ*13Cwild < *δ*13Ccaptive; *δ*15Nwild > *δ*15Ncaptive  LDAwild vs. captive: Accuracy = 0.91 | (Andersson et al., 2021) |
| **MAMMAL** | *Mustela vison* | *δ*13C | Teeth; claw | Denmark | *δ*13Cwild < *δ*13Ccaptive  95.9% correct classification to the supposed origin group | (Hammershøj et al., 2005) |
| *Canis lupus* | *δ*13C, *δ*15N | Hair; bone | USA | *δ*13Cwild < *δ*13Ccaptive; *δ*15Nwild = *δ*15Ncaptive  (Based on no overlaps between groups) | (Kays & Feranec, 2011) |
| *Tachyglossus aculeatus* | *δ*13C, *δ*15N | Quills | Australia | *δ*13Cwild < *δ*13Ccaptive; *δ*15Nwild < *δ*15Ncaptive  91.31% correct classification | (Brandis et al., 2018) |
| *Panthera leo* | *δ*13C e *δ*15N | Hair | Australia | *δ*15Nwild > *δ*15Ncaptive  Predictive modelwild vs. captive: Accuracy = 0.7 | (Hutchinson & Roberts, 2020) |

\*Not included in the database (.xlsx file) because isotopic data were not available