**ANNEX 5 – ADULT FISH NECROPSY DATA**

1. **STANDARD NECROPSY**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **Fish #** | **Gender** | **Groups** | **Eyes** | **Skin** | **Fins** | **Opercula** | **Gills** | **Bile** | **Mesenteric Fat** | **Liver** | **Spleen** | **Hindgut** | **Kidney** | **Parasites** | **Comments** |
| **1** | M | NVP L | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few | Liver is pale |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| **2** | M | NVP L | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No | Liver is pale |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few | Kidney is pale |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| **3** | F | NVP L | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| **4** | F | NVP L | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate | Liver pale |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| **Fish #** | **Gender** | **Groups** | **Eyes** | **Skin** | **Fins** | **Opercula** | **Gills** | **Bile** | **Mesenteric Fat** | **Liver** | **Spleen** | **Hindgut** | **Kidney** | **Parasites** | **Comments** |
| 5 | M | NVP L | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few | Liver pale |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate | Kidney pale |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 6 | M | NVP L | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 7 | M | Contol | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 8 | F | Control | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few | Mushy liver |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |

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| **Fish #** | **Gender** | **Groups** | **Eyes** | **Skin** | **Fins** | **Opercula** | **Gills** | **Bile** | **Mesenteric Fat** | **Liver** | **Spleen** | **Hindgut** | **Kidney** | **Parasites** | **Comments** |
| 9 | M | Solvent | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate | Liver pale |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 10 | F | Solvent | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 11 | M | NVP H | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 12 | F | NVP H | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |

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| **Fish #** | **Gender** | **Groups** | **Eyes** | **Skin** | **Fins** | **Opercula** | **Gills** | **Bile** | **Mesenteric Fat** | **Liver** | **Spleen** | **Hindgut** | **Kidney** | **Parasites** | **Comments** |
| 13 | M | NVP H | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 14 | F | NVP H | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 15 | M | NVP H | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate | Kidney pale |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 16 |  | NVP H | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |

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| **Fish #** | **Gender** | **Groups** | **Eyes** | **Skin** | **Fins** | **Opercula** | **Gills** | **Bile** | **Mesenteric Fat** | **Liver** | **Spleen** | **Hindgut** | **Kidney** | **Parasites** | **Comments** |
| 17 | F | NVP L | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 18 | F | NVP L | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 19 | M | NVP L | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 20 | M | NVP L | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |

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| **Fish #** | **Gender** | **Groups** | **Eyes** | **Skin** | **Fins** | **Opercula** | **Gills** | **Bile** | **Mesenteric Fat** | **Liver** | **Spleen** | **Hindgut** | **Kidney** | **Parasites** | **Comments** |
| 21 | M | NVP L | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 22 | F | NVP L | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate | Bile stones |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 23 | F | Control | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate | Mushy liver |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 24 | M | Control | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate | Mushy liver |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |

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| **Fish #** | **Gender** | **Groups** | **Eyes** | **Skin** | **Fins** | **Opercula** | **Gills** | **Bile** | **Mesenteric Fat** | **Liver** | **Spleen** | **Hindgut** | **Kidney** | **Parasites** | **Comments** |
| 25 | M | Solvent | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few | Bile stones |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 26 | F | Solvent | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 27 | F | Mixture 1 | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 28 | F | Mixture 1 | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |

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| **Fish #** | **Gender** | **Groups** | **Eyes** | **Skin** | **Fins** | **Opercula** | **Gills** | **Bile** | **Mesenteric Fat** | **Liver** | **Spleen** | **Hindgut** | **Kidney** | **Parasites** | **Comments** |
| 29 | M | Mixture 1 | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 30 | F | Mixture 1 | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 31 | M | Mixture 1 | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few | Empty gallbladder |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 32 | F | Mixture 1 | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |

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| **Fish #** | **Gender** | **Groups** | **Eyes** | **Skin** | **Fins** | **Opercula** | **Gills** | **Bile** | **Mesenteric Fat** | **Liver** | **Spleen** | **Hindgut** | **Kidney** | **Parasites** | **Comments** |
| 33 | F | NVP H | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No | Darker liver |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 34 | F | NVP H | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 35 | M | NVP H | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few | Red rash |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 36 | F | NVP H | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No | Red rash |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe | Greenish |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  | swollen |
|  |  |  |  | Other |  |  | Other |  |  | Other |  | ovaries |

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| **Fish #** | **Gender** | **Groups** | **Eyes** | **Skin** | **Fins** | **Opercula** | **Gills** | **Bile** | **Mesenteric Fat** | **Liver** | **Spleen** | **Hindgut** | **Kidney** | **Parasites** | **Comments** |
| 37 | M | NVP H | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 38 | F | NVP H | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 39 | F | Control | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few | Liver pale |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 40 | M | Control | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate | Darker liver |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |

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| **Fish #** | **Gender** | **Groups** | **Eyes** | **Skin** | **Fins** | **Opercula** | **Gills** | **Bile** | **Mesenteric Fat** | **Liver** | **Spleen** | **Hindgut** | **Kidney** | **Parasites** | **Comments** |
| 41 | M | Solvent | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few | Liver pale |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 42 | M | Control | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few | Bile stones |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 43 | M | Control | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 44 | F | Solvent | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few | Kidney pale |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |

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| **Fish #** | **Gender** | **Groups** | **Eyes** | **Skin** | **Fins** | **Opercula** | **Gills** | **Bile** | **Mesenteric Fat** | **Liver** | **Spleen** | **Hindgut** | **Kidney** | **Parasites** | **Comments** |
| 45 | F | Solvent | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few | Kidney pale |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 46 | M | Mixture 1 | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few | Kidney pale |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe | Bile stones |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 47 | F | Mixture 1 | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 48 | M | Mixture 1 | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |

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| **Fish #** | **Gender** | **Groups** | **Eyes** | **Skin** | **Fins** | **Opercula** | **Gills** | **Bile** | **Mesenteric Fat** | **Liver** | **Spleen** | **Hindgut** | **Kidney** | **Parasites** | **Comments** |
| 49 | F | Mixture 1 | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 50 | F | Mixture 1 | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few | Only one |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate | small ovary |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe | Greenish |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  | ovary |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |
| 51 | F | Mixture 1 | Normal | Normal | Normal | Normal | Normal | L Straw | None | Normal | Normal | Normal | Normal | No |  |
| Hemorr | Aberration | Erosion | Shortening | Frayed | D Straw | <50% | Fatty | Granular | Inflam | Swollen | Few |  |
| Missing | Mild | Mild |  | Clubbed | L Green | 50% | Nodules/cysts | Nodular | Mild | Mottled | Moderate |  |
| Other | Moderate | Moderate |  | Discolour | D Green | >50% | Focal disc | Enlarged | Moderate | Granular | Severe |  |
|  | Severe | Severe |  | Pale |  | 100% | Discolouration | Other | Severe | Urolithiasis |  |  |
|  |  |  |  | Other |  |  | Other |  |  | Other |  |  |

**Gender:** M = Male; F = Female; **Eyes:** Hemorr = Hemorrage; **Bile:** L = Light; D = Dark; **Hindgut:** Inflam = Inflammation