

Mussel Quality Assessment

SCOPE:

To ensure that all mussel harvests are visually inspected for quality parameters before dispatching from farm to Scottish Shellfish's processing facility

RESPONSIBILITY:

Farm Manager

RELATED DOCUMENTS:

FM0016 Harvesting Record

METHOD:

Equipment Required:

Bowl
Scoop
Plastic Containers
Ruler
Scales

Sample Collection

1. Using the scoop collect random samples from the top and middle of a number of bins/ bags and transfer to the bowl making a total weight of 5kg.



2. Lay out five plastic containers which will be used to collect the following contained within the original 5kg sample
 - Fouling – tubeworm and barnacles
 - Dead
 - Broken shells
 - Shells <45mm in size
 - Extraneous matter
3. Inspect every shell in the 5kg sample and assign them to the categories shown above and place into the correct container.

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Fouling - Marine fouling can be in the form of tubeworm (which can attach themselves to a mussel shell when swimming in water, once attached they secrete a white mineral tube around its body) and barnacles (which live in tidal waters and can attach themselves permanently to mussel shell). Tubeworm and barnacles are recorded together as percentage fouling.

Examples of light and heavy tubeworm and barnacles are shown below for reference.

Light Tubeworm – One large tubeworm or small pieces, target <3cm of tubeworm on one side of the shell only.



Heavy Tubeworm – Shells with >3cm of tubeworm on either side of the shell.



Light Barnacles – Up to two small barnacles <5mm in diameter each or one barnacle <10mm in diameter on one side of the shell.



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Heavy Barnacles – Three small barnacles <5mm in diameter or barnacles which are >10mm in diameter on one side of the shell.



Dead – Mussel shells which are wide open and do not close when gently tapped.



Broken Shells – Shells that are not fully intact and have pieces of shell missing and/ or have hairline cracks present on the shell.



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Shells <45mm – Any shells <45mm in length when measured with a ruler.



Extraneous Matter – As mussels are grown in water other sea creatures can attach themselves to the mussel shells and ropes and therefore can be found within the bins/ bags delivered. Extraneous matter may include seaweed, sea squirts, starfish, sea anemones and byssus and are all classified in this particular category.



Spawning – the 5kg sample must be inspected for spawning. Spawning can be categorised as absent, signs or spawning.

- Signs of Spawning – a slightly sticky/ slimy film on the mussels shells.
- Spawning - orange coloured liquid present on the shells, and visible on sides of the bins/ bags, examples are shown below. A distinct sweet aroma from this coloured liquid.

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4. Once every shell from the sample has been inspected and assigned to a particular category weigh and record the percentages under the correct section on FM0016.

Light Tubeworm – 1.601kg



Broken Shells – 0.271kg



5. Fill a pot with some water and place on the cooker to boil.
6. Meat Yields – weigh 1kg of mussels from the retained in specification mussels from the original 5kg sample and transfer to the pot, place a lid on the pot and return to boil until all shells are open.

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7. Remove the pot from the cooker and transfer the cooked shells into a colander to allow the any liquid to drain.



8. Separate the cooked meats from the shells and place in plastic containers. Count the number of shells present in the sample and record on FM0016.



9. Weigh the cooked meats and cooked shells and record the percentages on FM0016. Wet meat yield – target >20% and dry meat yield – target >32%.

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10. Spawning – on cooking there may be the presence of water sacks and light veining present on the cooked meats, as shown below. If present record on FM0016.



11. Organoleptic – after weighing the cooked mussel meats taste them to see if there are any taints present or off flavours and any grit present in the meats, record the results in the correct section of 6.
12. Size – relates to meat size within the shell and is categorised as:

- Small – meat is less than a third of the length of its shell
- Medium – meat is between a third and two thirds of the length of its shell
- Large – meat is more than two thirds of the length of its shell

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13. Meat Appearance – are the meats an even colour and properly formed on cooking? If the meats meet these parameters record as acceptable and if they do not record as unacceptable on FM0016.

The parameters for out of specification are:

- Fouling >9%
- Dead – present
- Broken shells – present
- Small >2%
- Extraneous matter >1%
- Shell count >90 shells per kg
- Wet meat yield <20%
- Dry meat yield <32%