

Reporting Hairs and Feathers on Filth Analytical Worksheets

1. Recommendations for reporting hairs and feathers on filth analytical worksheets

The reporting of hairs, hair fragments, and feather barbs/barbules requires gathering as much information as possible because it is valuable for regulatory purposes. This includes information such as (but not limited to) the type of hair/feather (this is, identification to the lowest extent possible), number, size, and distribution through the subsamples (or subs), all of which help in the regulatory decision-making process.

1.1. Recommendation 1: Few filth elements

When only a few hairs, hair fragments, feather barbs/barbules are found, report their identification (to the lowest extent possible; if unidentified, state whether striated or nonstriated), number, length (mm) of each hair, hair fragment, feather barb, feather barbule, and the sub number where the finding occurred.

Below are some examples for reporting hairs and feathers. These are just examples, and reporting is not limited to the examples below. Keep in mind that as long as the information provided in the analytical report is comprehensive, any other format can be used.

Example:

After analyzing a sample, a total of 3 rat/mouse hair fragments were found as follows: One rat/mouse hair fragment measuring 0.5 mm long was found in sub 1, and two rat/mouse hair fragments, which were 1 and 8.5 mm long, were found in sub 4.

Recommended options for reporting:

Option 1:

1 rat/mouse hair fragment (0.5 mm) in sub 1, and 2 rat/mouse hair fragments (1 and 8.5 mm) in sub 4.

Option 2:

Sub 1:

Rat/mouse hair fragments (<5 mm): 1 (0.5 mm)

Sub 4:

Rat/mouse hair fragments (<5 mm): 1 (1.0 mm)

Rat/mouse hair fragments (5-10 mm): 2 (8.5 mm)

Option 3: If reporting using a table per sub, an optional recommended reporting is below.

Filth element	Sub 1	Sub 2	Sub 3	Sub 4	Sub 5	Sub 6	Total	Size (mm)
Rat/mouse hair fragments	1	0	0	1	0	0	2	0.5 - 1.0
Rat/mouse hair fragments	0	0	0	1	0	0	1	8.5

Option 4: You also have the option to add the size category to the table as seen below.

Filth element	Sub 1	Sub 2	Sub 3	Sub 4	Sub 5	Sub 6	Total	Size (mm)
Rat/mouse hair fragments (<5 mm)	1	0	0	1	0	0	2	0.5 - 1.0
Rat/mouse hair fragments (5-10 mm)	0	0	0	1	0	0	1	8.5

Please note that all the four reporting options above provide the following information about the findings: identification, number, size, and distribution through the subsamples, which are valuable for the regulatory decision-making process.

1.2. Recommendation 2: Numerous filth elements

When numerous hairs, hair fragments, feather barbs/barbules are found, group them by type (or identification; if unidentified, state whether striated or nonstriated) and by the following size categories: (a) <5 mm long, (b) 5–10 mm long, and (c) >10 mm long. The three size categories are consistent with AOAC Official Method 970.66 Light and Heavy Filth, General. It is also important to include the range of sizes (or actual sizes) found when grouping the hairs in those categories.

Below are some examples for reporting hairs and feathers. These are just examples, and reporting is not limited to the examples below. Keep in mind that as long as the information provided in the analytical report is comprehensive, any other format can be used.

Example 1:

A total of 22 rat/mouse hair fragments were found in several subs; length of the hair fragments ranged from 0.5 mm to 15.8 mm.

Recommended options for reporting:

Option 1:*

Rat/mouse hair fragments <5 mm: 5 (0.5 - 2.5 mm)

Rat/mouse hair fragments 5-10 mm: 14 (5.1 - 6.5 mm).

Rat/mouse hair fragments >10 mm: 3 (11.5 – 15.8 mm). Optionally, report this category as: Rat/mouse hair fragments >10 mm: 3 (11.5, 12.2, 15.8 mm).

*Note that this option does not specify the number of fragments or sizes of those fragments found per sub. This type of reporting may be used in the summary of the analytical report. More detailed information, including the distribution of the findings in the subs should be included as seen in option 2 below.

Option 2: If reporting using a table per sub, an optional recommended reporting is below.

Filth element	Sub 1	Sub 2	Sub 3	Sub 4	Sub 5	Sub 6	Total	Size (mm)
Rat/mouse hair fragments (<5 mm)	0	1	3	0	1	0	5	0.5 - 2.5
Rat/mouse hair fragments (5-10 mm)	0	0	8	3	0	3	14	5.1 - 6.5
Rat/mouse hair fragments (>10 mm)	0	2	0	1	0	0	3	11.5 - 15.8 OR 11.5, 12.2, 15.8

Example 2:

A total of 10 rat/mouse hair fragments (sizes ranging from 0.5 – 6.2 mm), a total of 11 cat/dog hair fragments (sizes ranging from 0.4 – 14.5 mm), and a total of 3 human hairs (sizes ranging from 7.2 – 28.0 mm) were found through several subs in a sample.

Recommended options for reporting:

Option 1:*

Rat/mouse hair fragments <5 mm: 9 (0.5 – 3.5 mm)

Rat/mouse hair fragment: 1 (6.2 mm); **OR** Rat/mouse hair fragment (5-10 mm): 1 (6.2 mm); **OR** 1 Rat/mouse hair fragment 6.2 mm

Cat/dog hair fragments <5 mm: 8 (0.4 – 2.2 mm)

Cat/dog hair fragment 7.5 mm: 1; **OR** Cat/dog hair fragment (5-10 mm): 1 (7.5 mm); **OR** Cat/dog hair fragment 7.5 mm: 1

Cat/dog hair fragments >10 mm: 2 (10.8, 14.5 mm); **OR** 2 cat/dog hair fragments 10.8 and 14.5 mm long

Human hairs: 2 (7.2, 8.3 mm)

Human hair: 1 (28.0 mm)

*Note that this option does not specify the number of fragments or sizes of those fragments found per sub. This type of reporting may be used in the summary of the analytical report. More detailed information, including the distribution of the findings in the subs should be included as seen in option 2 below.

Option 2: If reporting using a table per sub, an optional recommended reporting is below.

Filth element	Sub 1	Sub 2	Sub 3	Sub 4	Sub 5	Sub 6	Total	Size (mm)
Rat/mouse hair fragments (<5 mm)	0	1	3	0	1	0	5	0.5 - 2.5
Rat/mouse hair fragments (5-10 mm)	0	0	8	3	0	3	14	5.1 - 6.5
Rat/mouse hair fragments (>10 mm)	0	2	0	1	0	0	3	11.5 - 15.8 OR 11.5, 12.2, 15.8
Cat/dog hair fragments (<5 mm)	2	1	0	1	2	2	8	0.4 - 2.2
Cat/dog hair fragments (5-10 mm)	0	0	1	0	0	0	1	7.5
Cat/dog hair fragments (>10 mm)	1	0	1	0	0	0	2	10.8, 14.5
Human hairs (5-10 mm)	0	1	0	0	1	0	2	7.2, 8.3
Human hair (>10 mm)	0	0	0	0	0	1	1	28.0

Option 3: Additional recommended reporting is below.

Sub 1:

Cat/dog hair fragments (<5 mm): 2 (0.4 - 2.2 mm)

Cat/dog hair fragments (>10 mm): 1 (10.8 mm)

Sub 2:

Rat/mouse hair fragments (<5 mm): 1 (0.5 mm)

Rat/mouse hair fragments (>10 mm): 2 (11.5, 12.2 mm)

Cat/dog hair fragments (<5 mm): 1 (0.4 mm)

Human hairs (5-10 mm): 1 (7.2 mm)

Sub 3:

Rat/mouse hair fragments (<5 mm): 3 (0.5 - 2.5 mm)

Rat/mouse hair fragments (5-10 mm): 8 (5.5 - 6.5)

Cat/dog hair fragments (5-10 mm): 1 (7.5 mm)

Cat/dog hair fragments (>10 mm): 1 (14.5 mm)

Sub 4:

Rat/mouse hair fragments (5-10 mm): 3 (5.1 – 5.9)

Rat/mouse hair fragments (>10 mm): 1 (15.8 mm)

Sub 5:

Rat/mouse hair fragments (<5 mm): 1 (0.8 mm)

Cat/dog hair fragments (<5 mm): 2 (1.1, 2.2 mm)

Human hairs (5-10 mm): (8.3 mm)

Sub 6:

Rat/mouse hair fragments (<5 mm): 5 (0.8 – 2.4 mm)

Cat/dog hair fragments (<5 mm): 2 (0.5, 1.1 mm)

Human hair (>10 mm): 1 (28 mm)

1.3. Additional Information:

The type of recommendations above can be applicable to other filth elements such as fibers.

2. Supporting Documents

- A. ORA Laboratory Manual, Volume IV Orientation and Training, Section 4, [Microanalytical and Filth Analysis](#)
- B. Olsen, A. R., Sidebottom, T. H. and Knight, S. A. (1996). *Fundamentals of Microanalytical Entomology, a practical guide to detecting and identifying filth in foods*. Boca Raton, FL: CRC Press.
- C. ORA Laboratory Manual Volume III Section 3, [Recording of Results Analyst Worksheet](#)
- D. AOAC Official Method 970.66 Light and Heavy Filth

For additional information, see [Additional Chemistry and Microbiology Resources Used by the Foods Program](#).