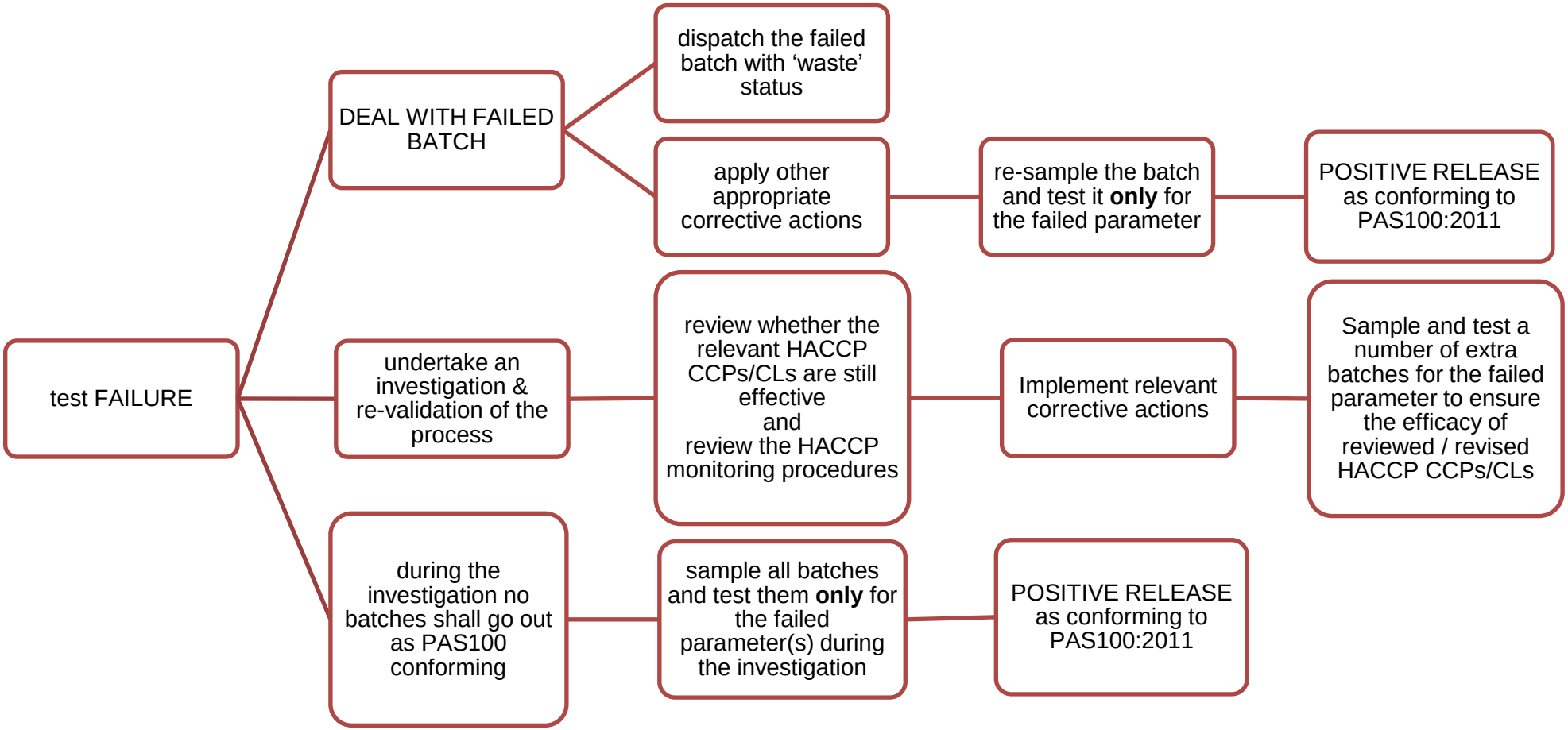
Actions you are expected to take in the event of any test failures

during routine sampling regime for all parameters [as per section 16 of PAS100:2011]



In the event the batch failed on any parameter, the following corrective actions should be carried out by the composter and checked by the CB during the annual inspection.

Description of the diagram, the composter should:

- Deal with the failed batch in one of the following ways:
  - dispatch the failed batch with 'waste' status, OR
  - apply other appropriate corrective actions (e.g. rescreen the failed batch or remove the excessive level of contaminants in the event of a physical contaminant failure). Then re-sample the batch and test it only for the failed parameter(s); only if the re-test passes, the batch can be dispatched as PAS 100 conforming. This is called **positive release**.
    Please do not re-test the archive sample, as the archive sample test results do not count under the current rules.[1]
- Undertake an investigation to establish the reason for the failure/s;
  - Review whether the relevant HACCP CCPs/CLs are still effective;
  - Review the HACCP monitoring procedures to ensure these are effective in flagging when the system is not performing as expected.
- Implement relevant corrective actions to address any concern raised during the review process.
- Sample and test a number of extra batches for the failed parameter/s to prove the efficacy of the relevant CCP/CLs or your HACCP monitoring procedures and the effectiveness of the implemented corrective actions (REAL would recommend testing another two or three extra batches but it does depend on the significance of the failure. See case studies below).
- **Positive release.** During the investigation no batches shall go out as PAS100 conforming, unless they are sampled and tested for the failed parameter/s and the associated test results show a pass.

[1] REAL Compost Certification Scheme Rules v1r6, Clause 15.2

Case study 1 – Failure on *E.coli*, by a large margin (300,000 CFU/g)

Following the diagram, the composter should:

1. Deal with the failed batch in one of the following ways:
   - dispatch the failed batch with 'waste' status, OR
   - apply other appropriate corrective actions:
     - reprocess the failed batch;
     - re-sample the reprocessed batch and test it only for the failed parameter(s);
     - only if the re-test passes, the batch can be dispatched as PAS 100 conforming.
2. Undertake an investigation to establish the reason for the failure/s:
   - Batch monitoring record shows that at one monitoring point, temperature was not sustained at or above CL for required minimum period.
   - Potential causes:
     - high proportion of grass clippings in batch,
     - C:N was too low,
     - batch slumped and not heated up properly.
     - *E. coli* eradication was patchy.
3. Implement relevant corrective actions: Retrain person responsible for batch evaluation. Retrain person responsible for batch formation. Supervisor to check those persons carrying out activities & checks
4. Extra tests: 3 more batches sampled and tested for *E. coli*. If 3 passes shown, corrective actions can be deemed to be effective
5. Positive release. During the investigation no batches shall go out as PAS100 conforming, unless they are sampled and tested for the failed parameter/s and the associated test results show a pass.

Case study 2 – Failure on *E.coli*, by a small margin (5,000 CFU/g)

Following the diagram, the composter should:

1. Deal with the failed batch in one of the following ways:
    - dispatch the failed batch with 'waste' status, OR
    - apply other appropriate corrective actions:
        - reprocess the failed batch;
        - re-sample the reprocessed batch and test it only for the failed parameter(s);
        - only if the re-test passes, the batch can be dispatched as PAS 100 conforming.
2. Undertake an investigation to establish the reason for the failure/s:
        - Sample has been taken incorrectly e.g. dirty spade was used and caused contamination of the sample
3. Implement relevant corrective actions: Retrain person responsible for taking samples. Next sampling activity is supervised.
4. Extra tests: 2 more batches sampled and tested for *E. coli*. If 2 passes shown, corrective actions can be deemed to be effective.
5. Positive release. During the investigation no batches shall go out as PAS100 conforming, unless they are sampled and tested for the failed parameter/s and the associated test results show a pass.

Case study 3 – Failure on physical contaminants and plastics by a large margin (e.g. 1.5 % PC, 1 % plastics)

Following the diagram, the composter should:

1. Deal with the failed batch in one of the following ways:
    - dispatch the failed batch with 'waste' status, OR
    - apply other appropriate corrective actions:
        - reprocess the failed batch;
        - re-sample the reprocessed batch and test it only for the failed parameter(s);
        - only if the re-test passes, the batch can be dispatched as PAS 100 conforming.
2. Undertake an investigation to establish the reason for the failure/s:
    - The quality of input materials delivered by a specific supplier has become significantly worse; the validated SOPs are no longer sufficient to cope with increased levels of contaminants and ensure the resulting compost is fit for purpose in terms of PC.
3. Implement relevant corrective actions:
    - Inform biowaste supplier that PCs must be reduced in the input materials delivered;
    - Install a picking line (is it practical and cost-effective?);
    - Wind sifter installed on screen;
    - Screen settings changed (e.g. speed, amplitude, incline of drum / plate)
4. Extra tests: 3 more batches sampled and tested for PC and plastics. If 3 passes shown, corrective actions can be deemed to be effective.
5. Positive release. During the investigation no batches shall go out as PAS100 conforming, unless they are sampled and tested for the failed parameter/s and the associated test results show a pass.

Case study 4 – Failure on sharps (e.g. 1 % m/m, against Quality Policy limit of 0.10 % m/m)

Following the diagram, the composter should:

1. Deal with the failed batch in one of the following ways:
    - dispatch the failed batch with 'waste' status, OR
    - apply other appropriate corrective actions:
        - reprocess the failed batch;
        - re-sample the reprocessed batch and test it only for the failed parameter(s);
        - only if the re-test passes, the batch can be dispatched as PAS 100 conforming.
2. Undertake an investigation to establish the reason for the failure/s:
    - HACCP plan only identifies screening as critical control point for sharps;
    - this control point does not sufficiently remove sharps.
3. Implement relevant corrective actions: Change the HACCP plan. An effective CCP and associated CLs need to be identified and validated.
4. Extra tests: 3 more batches sampled and tested for PC and plastics (includes sharps). If 3 passes shown, corrective actions can be deemed to be effective
5. Positive release. During the investigation no batches shall go out as PAS100 conforming, unless they are sampled and tested for the failed parameter/s and the associated test results show a pass.

Case study 5 – Failure on plant response test because of abnormal plant leaves and shoots (curled leaves, bent shoots)

Following the diagram, the composter should:

1. Deal with the failed batch in one of the following ways:
    - dispatch the failed batch with 'waste' status, OR
    - apply other appropriate corrective actions:
        - reprocess the failed batch;
        - re-sample the reprocessed batch and test it only for the failed parameter(s);
        - only if the re-test passes, the batch can be dispatched as PAS 100 conforming.
2. Undertake an investigation to establish the reason for the failure/s:
    - EC values normal; possible presence of herbicide residues (e.g. clopyralid, aminopyralid or picloram).
    - Composter has not signed contractual agreements with waste suppliers (e.g. landscapers, farmers) with declaration plant tissue waste was not treated with aminopyralid, clopyralid or picloram
3. Implement relevant corrective actions:
    - Composter to set up Input Material Supply Agreements with each supplier of plant tissue waste (except for LAs).
    - Composter to ask LA to flag to householders the importance of following instructions on herbicide product labels.
4. Extra tests: 3 more batches sampled and tested for plant response test. If 3 passes shown, corrective actions can be deemed to be effective.
5. Positive release. During the investigation no batches shall go out as PAS100 conforming, unless they are sampled and tested for the failed parameter/s and the associated test results show a pass.