How to Conduct an Effective Rework Operation

INTRODUCTION & OBJECTIVE:

Rework is defined as product that has been recovered or rejected from normal production and has been reprocessed, re-blended, or reformatted into the finished product.

This process is to assist businesses in their daily workflow operations by providing guidance in monitoring how to rework effectively and safely to eliminate the risk of “Product Contamination”. This includes the reasonable expected handling of the product where all facilities are considered and all risks are identified.

The risks are identified in this guideline along with the impacts these have on stores, suppliers, and brand reputation. Mishandling of rework may result in potential withdrawal/recall of products, could affect loss of customers and consequently loss of profit.

Common Sources of Hazards

Table 1: Example only

<table>
<thead>
<tr>
<th>Risks</th>
<th>Types of Issues</th>
<th>Potential Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign Object Contamination</td>
<td>Organic Matter</td>
<td>Vegetable or Stone Fruit stems, seeds, skins etc,</td>
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<tr>
<td></td>
<td></td>
<td>Live or Dead insects</td>
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<tr>
<td></td>
<td>Plastic / Paper</td>
<td>Plant Packaging materials, Pallets, Crates, Tubs,</td>
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<td></td>
<td></td>
<td>Plastic off-cuts e.g. disposable clothing, Shrink wrap,</td>
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<tr>
<td></td>
<td></td>
<td>Paper, WIP packaging/ covers (e.g. Liners), old</td>
</tr>
<tr>
<td></td>
<td></td>
<td>packaging,</td>
</tr>
<tr>
<td>Glass</td>
<td></td>
<td>Bottles, Jars, Lights, Gauge covers,</td>
</tr>
<tr>
<td>Wood</td>
<td></td>
<td>Fields, Pallets, Boxes, Buildings</td>
</tr>
<tr>
<td>Metal</td>
<td></td>
<td>Processing equipment, sieves, facility, people</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(jewellery, pens, watches, maintenance activities),</td>
</tr>
<tr>
<td></td>
<td></td>
<td>crates etc.</td>
</tr>
<tr>
<td>Microbial Contamination and/or Growth</td>
<td>Contamination through Microbial Growth</td>
<td>Poor storage, Poor handling , Ineffective Cleaning Program, carryover WIP</td>
</tr>
</tbody>
</table>
Allergen Contamination  Contamination through Allergen (Solid Particulate)  Protective clothing, Production equipment, Cleaning equipment, Processing aids

Incorrect Raw Material additions
Lack of raw material control during storage
Product handling during re-sorting or inspections

**FREQUENCY & RISK ASSESSMENT:**

Effective rework varies for all manufacturers and it is important that they are regularly reviewed and that all risks are covered within each element the HACCP plan.

A risk assessment must be conducted properly by a competent or trained employee ensuring ongoing monitoring of the risk and corrective action taken where required.

**Table 2: Example only**

*Refer to Codex HACCP Risk Assessment Matrix Tools*

<table>
<thead>
<tr>
<th>Identify process steps and consider risk</th>
<th>Risk Assessment</th>
<th>Frequency</th>
</tr>
</thead>
</table>
|  Reworking of Product - ineffective rework controls resulting in product contamination | **H** **M** **H** Procedure for Rework documented with requirements and responsibilities clearly defined Assess rework risks based on rework scenario - Rework forms developed to capture assessment and controls for rework being completed, including management sign off. | Annual review and training

Annual risk assessment review.

Rework approval form for all rework activities (or as applicable)
### Changes in production scheduling

<table>
<thead>
<tr>
<th><strong>H</strong></th>
<th><strong>H</strong></th>
<th><strong>H</strong></th>
<th>Process in place for the approval of changes to production schedules. Sign-off required by QA &amp; Production teams for schedule changes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Procedure reviewed annually At every change to schedule</td>
</tr>
</tbody>
</table>

### Storage - Unlabelled ingredients/materials

<table>
<thead>
<tr>
<th><strong>H</strong></th>
<th><strong>M</strong></th>
<th><strong>H</strong></th>
<th>Procedures in place for control of raw material handling and storage with requirements clearly defined. Start-up inspections and GMP Audits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Procedure annually reviewed Daily / Monthly</td>
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</tbody>
</table>

### Cleaning - Ineffective process/programs

<table>
<thead>
<tr>
<th><strong>H</strong></th>
<th><strong>M</strong></th>
<th><strong>H</strong></th>
<th>Equipment verification to assess hygiene and risk of contamination Daily at startup and end of shift Monthly verification</th>
</tr>
</thead>
</table>

### Employee training - inadequate training and knowledge of risks

<table>
<thead>
<tr>
<th><strong>H</strong></th>
<th><strong>M</strong></th>
<th><strong>H</strong></th>
<th>Training Program and Matrix defined for the Operational Team Procedures / Work Instructions documented</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Quarterly, 6 monthly, Annual or as deemed necessary</td>
</tr>
</tbody>
</table>

**RESPONSIBILITY:**

The HACCP team is responsible for identifying all risks associated with rework. The Manager or Supervisor responsible for the area/production/packing line is accountable for all rework operation. The QA team is responsible for undertaking audits. All rework operational checks are recorded so that corrective actions and trend analysis can be undertaken.

**PROCEDURE EXPECTATIONS:**

1. **Identification:**

   All Rework material and containers/tubs used for rework must be clearly labelled and identified. Identification must be legible and at a minimum include:
   
   i. Name of the Product,
   
   ii. Batch Code,
iii. Date of production

2. Records/ Training:
   a. Rework introduction points must be included in HACCP Plan Flow Diagram with Hazard Analyses completed for the respective rework process steps. *as per Codex Section 5: Control of Operation*
   b. Pre-operational records must indicate the amount of rework from each shift
   c. Rework procedure and rework matrix must be defined to clearly detail parameters of rework and responsibilities, parameters may include but not limited to:
      i. Consider type of products being reworked and ensure “like into like” protocol is followed.
      ii. Consider maximum % of rework material permitted per batch
      iii. Consider maximum period for rework storage and use to ensure Quality or Food Safety parameters are not compromised. (Within same run, same day, same week, month). These parameters and maximum times for rework hold must be validated.
      iv. A recording system for rework needs to be robust that includes the date, time, quantity reworked, batch codes impacted by the rework (the original batch and the batch code it was added to)
      v. Consider processing equipment such as any sieves, benches, crates, tubs, storage tanks, which may be used during the rework process
      vi. Consider appropriate labelling and removal of waste (i.e. product, packaging components, etc), including the safe removal of labels/ rework identification.
   d. A rework tracking system needs to be robust to be able to identify final products containing rework materials full traceability that in the situation of a withdrawal/recall rework is clearly identified back to final products.
   e. Conduct traceability exercise on reworked products to demonstrate effective trace of materials.
   f. Cleaning program for the rework system shall be established and documented.
   g. All staff handling product rework must be appropriately trained to ensure risks relating to the mishandling of rework are clearly understood. Procedures, Work Instruction and Policies must be developed and used as training aids. Follow up review of the procedures shall be undertaken to ensure competency of those trained in handling rework.
   h. Non-conforming product is identified, disposed, downgraded or reworked and documented such that the product becomes within specification and quality is not compromised. Records of these activities and actions shall be maintained.

3. Segregation/ Storage:
   a. Robust controls relating to product segregation and storage prevent cross contamination relating to allergens or potential foreign objects. Inappropriate use of re-work may result in undeclared allergens
b. Each batch of reworked product is inspected or analysed as required before release.

c. Store re-work in an appropriate environment that prevents or minimises contamination with potential food hazards and growth of microorganisms, food spoilage e.g. poultry meat should be stored 4°C and below, dry blends must be stored in clean containers with appropriate seals and kept in dry environments.

d. Follow general GMP Practices, cover and protect rework materials to maintain integrity, store product off the floor and away from walls, as these are areas where contamination is possible.

e. Product contact equipment used for storing or handling rework must be inspected to ensure integrity is maintained and risk of contamination is eliminated. Register of all rework containers must be developed and regularly inspected.
GLOSSARY:

| Risk Assessment | HACCP is a recognised risk assessment tool for specific hazards identified by the business at each step of the manufacturing process. Risk assessment principles are also used to consider situations which occur outside of the direct manufacturing or packing process. Risk assessments support the decisions made by the business in the level of control that has been.
| Particulate | A particulate is a separate and distinct particle of material
| “Like into Like” | Same or similar product

References:

1. “Process Control: Produce”, Chapter 3, Page 13, WQA Std V8 Primary Production: Produce
2. “Process Control: Manufactured Foods”, Chapter 3, Page 14, WQA Std V8 Manufactured Food
3. “Control of Product: Product Identification”, Chapter 5.1, Page 19, WQA Std V8 Primary Production: Produce
4. “Control of Product: Product Identification”, Chapter 5.1, Page 20, WQA Std V8 Manufactured Food
5. “Control of Product: Waste, Re-work and Work-in-Progress”, Chapter 5.3, Page 19, WQA Std V8 Primary Production: Produce
8. “Corrective Action”, Chapter 16 Page 52, WQA Std V8 Primary Production: Produce
9. “Corrective Action”, Chapter 16 Page 57, WQA Std V8 Manufactured Food
11. “Food Safety Risk Assessment of NSW Food Safety Schemes”, Page 1, March 2009, NSW Food Authority