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| Title | Propagate seed cultures using electronically controlled fermentation | | |
| Level | 3 | Credits | 4 |

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| Purpose | This unit standard is for people who are currently working, or who intend to work, in jobs which involve the propagation of seed cultures using electronically controlled fermentation. People credited with this unit standard are able to: use safe working practices; prepare for seed culture propagation; propagate seed cultures; and shut down continuous seed culture propagation systems. |
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| Classification | Food and Related Products Processing > Food Production - Beverages |
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| Available grade | Achieved |
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Guidance Information

- 1 Legislation relevant to this unit standard includes but is not limited to the: Health and Safety in Employment Act 1992; Health and Safety in Employment Regulations 1995; Food Act 1981; Food Hygiene Regulations 1974; Food (Safety) Regulations 2002; Resource Management Act 1991; and their associated regulations and subsequent amendments.
- 2 Definitions
Organisational procedures refer to documents that include: worksite rules, codes, and practices; equipment operating instructions; production specifications; documented quality management systems; and health and safety requirements.
Equipment refers to items such as electronically controlled programmable logic controller (PLC) and user interface, temperature control valves, pressure control devices, pumps, flow control devices, stirrers, sterilisers; hold up vessels, cylindrical vessels, cooling jackets; temperature, yeast, dissolved oxygen probes; ultraviolet (UV) lights.
PPE refers to personal protective equipment and may include but is not limited to: protective clothing, gloves, safety glasses/headwear/footwear, hearing protection, safety devices.
- 3 Competence is to be demonstrated on three occasions of propagating seed cultures using electronically controlled fermentation.

Outcomes and performance criteria

Outcome 1

Use safe working practices.

Performance criteria

- 1.1 PPE is used in accordance with organisational procedures.
- 1.2 Work environment is clean and free from hazards in accordance with organisational procedures.
- Range hazards to – personnel, product, plant.
- 1.3 Documentation is referred to and/or completed in accordance with organisational procedures.

Outcome 2

Prepare for seed culture propagation.

Performance criteria

- 2.1 Preparation for seed culture propagation is in accordance with organisational procedures.
- 2.2 Equipment is available, sterile, operational, and fit for purpose in accordance with organisational procedures.
- 2.3 Seed culture for propagation is available, at correct population, and meets required product specifications.
- Range specifications may include but are not limited to – microbiological, analytical.
- 2.4 Wort is available in sufficient quantity for scheduled and anticipated propagation requirements in accordance with production specifications.
- 2.5 Wort meets specifications for propagation.
- 2.6 Gases for seed culture propagation by continuous fermentation are in accordance with organisational procedures and meet purity specifications.
- 2.7 Production downtime due to preparation for seed culture propagation is minimised in accordance with organisational procedures.
- 2.8 Ingredient wastage due to seed culture propagation preparation is minimised in accordance with organisational procedures.
- Range ingredients may include but are not limited to – wort, yeast.

Outcome 3

Propagate seed cultures.

Performance criteria

- 3.1 Propagation of seed culture is in accordance with organisational procedures.
- 3.2 Seed culture and wort are pitched, in correct propagation vessel, and at correct temperature in accordance with production specifications.
- 3.3 Quantity and concentration of mixed seed culture and wort is correct in accordance with production specifications.
- 3.4 Gas level in culture conforms to product specifications.
- 3.5 Seed culture is propagated in sufficient quantity to meet required flow rate and working volume for production in accordance with organisational procedures.
- 3.6 Production downtime due to seed culture propagation is minimised in accordance with organisational procedures.
- 3.7 Ingredient wastage due to yeast propagation is minimised in accordance with organisational procedures.
- 3.8 Out of specification continuous seed culture propagation systems are identified, rectified and/or reported in accordance with organisational procedures.

Outcome 4

Shut down continuous seed culture propagation systems.

Performance criteria

- 4.1 Shut down of continuous seed culture propagation system is in accordance with organisational procedures.
- 4.2 Continuous seed culture propagation system is shut down, clean, and sterile in accordance with organisational and clean-in-place (CIP) procedures.
- 4.3 Plant and equipment requiring maintenance are identified, and corrective action is taken with those responsible for plant and equipment upkeep, in accordance with organisational procedures.

This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

| Process | Version | Date | Last Date for Assessment |
|--------------|---------|-----------------|--------------------------|
| Registration | 1 | 27 August 1996 | 31 December 2022 |
| Revision | 2 | 15 May 1998 | 31 December 2022 |
| Review | 3 | 19 August 2004 | 31 December 2022 |
| Review | 4 | 28 January 2021 | 31 December 2022 |

Consent and Moderation Requirements (CMR) reference

0111

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

This unit standard is expiring