

Dynamics 365 implementation

in aquaculture
production control

Guide



Land-based aquaculture executes a very complex production process to grow eggs into ready-to-be-sold full-grown biomass. In this operation, many components must be considered, such as feed amounts, oxygen concentration, and the pH of the water, to name a few.

One of the goals this process must achieve is to perform biomass harvesting in the most efficient way possible. This task can only be accomplished by having complete control over production plans and the execution of planned activities. The Production Control module within Dynamics 365 Supply Chain Management can meet these requirements.

Production Control allows users to prepare all the production processes and keep track of their execution while generating reports with cost information and resources consumed by the different parts of the harvesting process.



02 Elevate your land-based aquaculture's production processes

1. Production Orders for land-based aquaculture:

Production orders are the core of the Production Control module; this is the basic order to produce a specific product on a particular date in a requested quantity. Production orders are based on formulas and routes, and there are other types of orders like Batch Order or Kanban Order.

Production Orders have a status-based lifecycle:

Created

The Production Order has just been created and is in a draft-like state.

Estimated

Estimations for material and resource consumption are calculated.

Scheduled

Schedule production based on operations, individual jobs, or both.

Scheduled

Operations scheduling: Provides a rough, long-term plan. You can assign start and end dates to production orders.

Scheduled

Job scheduling: Each operation is separated into individual jobs, each with its specific dates, times, and assigned resources. If finite capacity is being used, the jobs will be assigned to resources based on availability.

Released

After the schedule is finished and the material is available to be picked or prepared, the Production Order can be released to indicate that the production can begin.

Prepared/Picked

When all materials and resources have been staged at the production location, the production Formula lines are updated to a Picked status.

Started

Material and resource consumption can be reported against the order when a production order starts.

Report progress/Complete jobs

Production journals are used to report the production progress by job or resource.

Reported as finished

The production order has been finished; the quantity of the finished goods produced is updated in inventory.

Ended

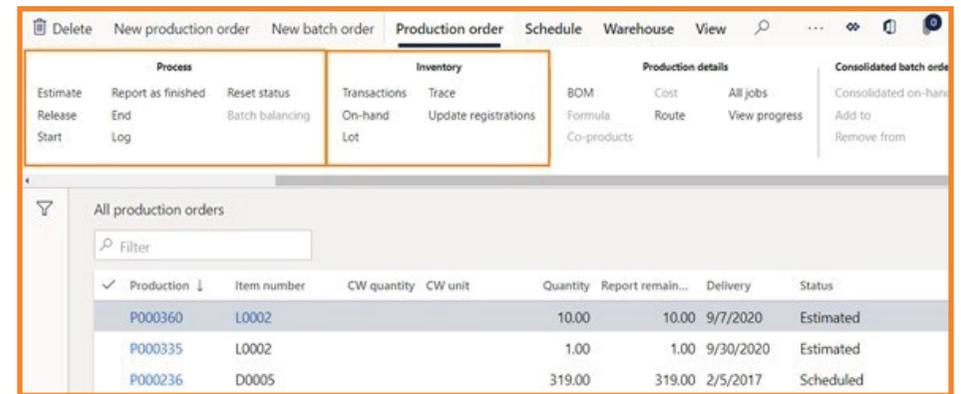
Before a production order ends, actual costs are calculated for the produced quantity. This status prevents additional expenses from being registered or posted to a completed production order.

¹These functionalities apply to not only land-based aquaculture companies but also any company that works with Process Manufacturing.

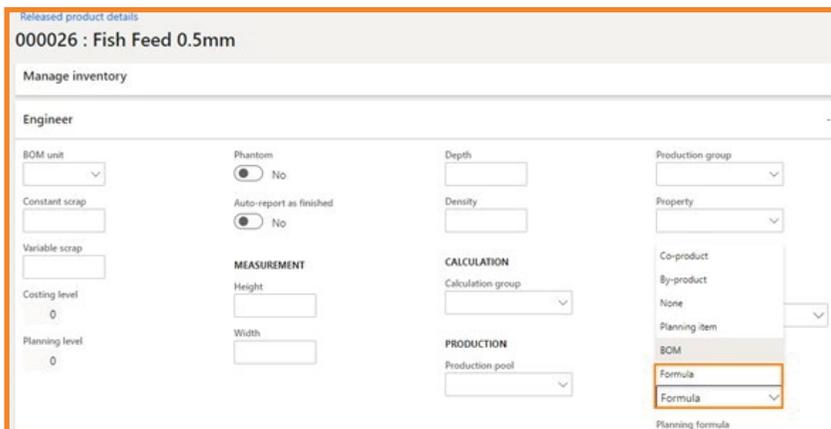
The best way to implement Production Orders into your land-based aquaculture production is by using a Production Order with many jobs, representing various tasks from the raw material (e.g., eggs) to the finished product (a full-grown adult).

2. Formulas:

The Formula is one of the essential parts of the Production Control module when working with Process Manufacturing. Before a company can start production, the components necessary to create the product and quantity must be defined within Dynamics 365. Then, the Formula identifies the materials, ingredients, and outcomes of a specific process. The Formula defines the whole production process in conjunction with the corresponding production route.



Production	Item number	CW quantity	CW unit	Quantity	Report remain...	Delivery	Status
P000360	L0002			10.00	10.00	9/7/2020	Estimated
P000335	L0002			1.00	1.00	9/30/2020	Estimated
P000236	D0005			319.00	319.00	2/5/2017	Scheduled



Released product details
000026 : Fish Feed 0.5mm

Manage inventory

Engineer

BOM unit: [Dropdown]
Constant scrap: [Input]
Variable scrap: [Input]
Costing level: 0
Planning level: 0

Phantom: No
Auto-report as finished: No

MEASUREMENT
Height: [Input]
Width: [Input]

Depth: [Input]
Density: [Input]

CALCULATION
Calculation group: [Dropdown]

PRODUCTION
Production pool: [Dropdown]

Production group: [Dropdown]
Property: [Dropdown]
Co-product: [Dropdown]
By-product: [Dropdown]
Planning item: [Dropdown]

BOM
Formula
Formula

Planning formula

The way this feature can be applied to land-based aquaculture is the following:

Imagine that every fish phase is a product: the eggs are a product, the Alevins are a product, the Smolts are a product, etc. The Formula for each product would indicate the ingredients; for example, depending on the company's processes, the Formula would show a certain quantity of Alevins and a specific amount of feed, oxygen, etc., to produce a particular amount of Smolts.

The solution will help your company keep in check the number of resources and consumables spent on each part of the process and control the expenses, ensuring the most efficient work method and the most intelligent use of resources.

04 3. Production Routes to determine land-based aquaculture products:

In Dynamics 365 Supply Chain Management, the production route determines the steps needed to produce a finished product. In other words, the route establishes the sequence of events that will take place to create the finished product.

One way to use this tool is to create a route for every part of the land-based aquaculture process; this will determine how to produce a certain quantity of finished products: Alevins, a Full-Grown Adult, or an Adult ready for consumption.

The screenshot displays the Dynamics 365 Supply Chain Management interface for production routes. On the left, a list of routes is shown with a search filter. The selected route is 'ASUS-000001 : Eggs to Alevins'. The main panel shows the details for this route, including a 'General' tab and a 'Versions' table.

Item number ↑	Configuration	Size	Style	Site	From date
10010404				01	1/1/2020

4. Resources:

As its name implies, these are the company's working resources. They can be anything that is used to produce goods or services. In Dynamics 365 Supply Chain Management, resources are classified into the following types.

- **Vendor:** An outside resource or subcontractor that performs an operation or task.

- **Human resources:** Personnel or a group of employees conducting an operation.

- **Machine:** An individual machine or group of machines can be tied with a resource.

- **Tool:** Control and schedule the reservations of a tool when capacity is limited.

- **Location:** Control and schedule the reservations of a specific area.

- **Facility:** A building or fixed structure necessary to carry out an activity.

The screenshot displays the Microsoft Dynamics Production Control interface. On the left, a table lists resources with columns for Resource Name, Description, and Type. The 'Mec Hand T' resource is highlighted. On the right, a detailed view for 'Mec Hand T' is shown, including a 'Type' dropdown menu with options: Vendor, Human resources, Machine, Tool (selected), Location, and Facility.

Resou...	Description	Type
Camera	Inspection Camera	Tool
El Hand To	Electrician Toolkit	Tool
Hand Tools	Hand Tools	Tool
HP Washer	HP Washer	Machine
MaintWorke	Maintenance Worker	Human resources
Mec Hand T	Mechanics Toolkit	Tool
Megger	Resistance Tester	Tool
Multimeter	Multimeter	Tool
Refract	Refractometer	Tool

Resources

Resource: Mec Hand T

Description: Mechanics Toolkit

General

RESOURCE

Vendor: _____

Worker: _____

Type: Tool

- Vendor
- Human resources
- Machine
- Tool
- Location
- Facility

Conclusion

Microsoft Dynamics Production Control is a great tool to monitor and control your production process while tracking and calculating costs and resource expenses. It comes especially handy in a Process Manufacturing type production when your objective is to automate and ease your manufacturing processes.



About Pangea Consultants

Who we are

We are a business software consulting practice laser-focused on Microsoft Dynamics 365 set of solutions and providing services that help you accelerate your business growth.

Our expertise and technical knowledge allow us to implement and integrate Microsoft Dynamics 365 business solutions regardless of the type of industry while delivering a first-class consultant service to our clients.



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