

Terraforming Mars: Cornucopia

Cornucopia gives you more control over project actions by allowing you to build a secondary production engine. *Cornucopia* adds food production to the economy of Mars and is compatible with the base game and all expansions.



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Overview

Cornucopia allows you to build a single type of *food factory*. This factory may be improved using *production modules* that have beneficial actions or effects.



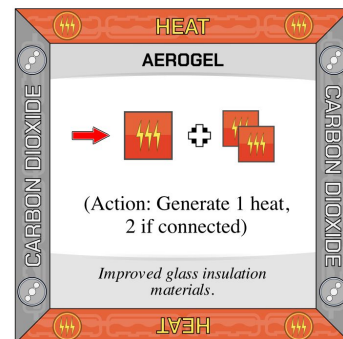
You may build one factory and add up to eight (8) production modules. Your base factory and each module can be purchased for **8 M€** as a **standard project action**.

The food factory is built in a **3x3 grid**, with the food factory tile in the center. For each production module directly connected to your food factory, you may take one action per generation using these production modules.

Components



20 food factory tiles



36 production module tiles

Game Setup

After setting up the base game, shuffle the production module tiles and place them face-down next to the game board. Draw four (4) production modules from the top of this deck and place them face up next to the deck to create the initial **marketplace**.



Set aside the food factory tiles, keeping them nearby for purchase.

The Module Marketplace

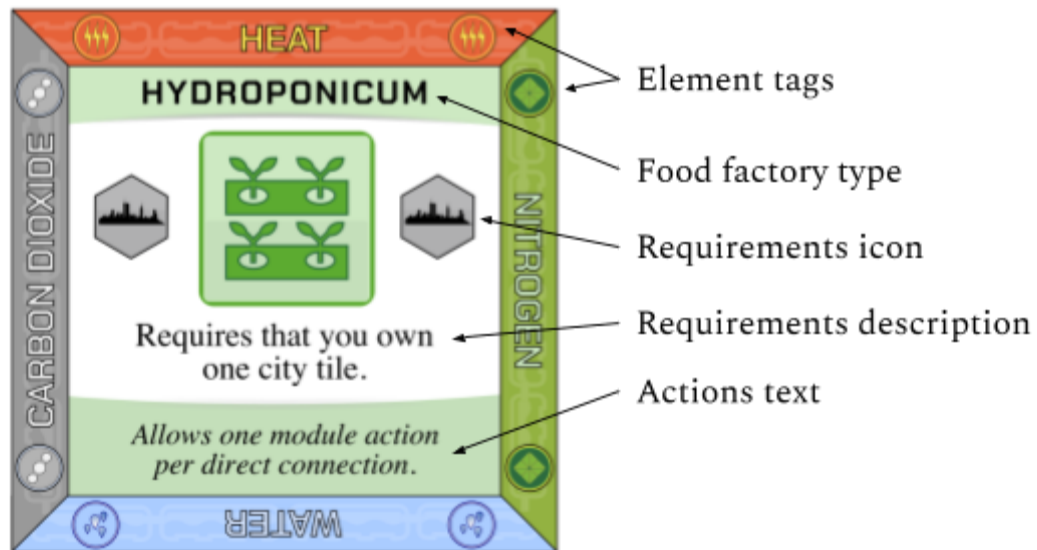
Modules in the marketplace can be purchased. To purchase a module, you must first own a **food factory**. Both actions are **standard project actions** costing **8 M€**.

At the beginning of each generation after the first, remove any existing modules in the marketplace and place them face down in a discard pile. Then draw and place four (4) production modules face up to the side of the game board. If fewer than four (4) modules remain in the deck, reshuffle the discard pile to rebuild the deck.

Once purchased, a module is not replaced in the marketplace until the start of the next generation. Rebuild the marketplace after the **production phase**.

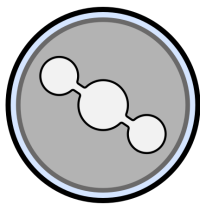
Food Factories

There are four types of food factories in *Cornucopia*. Each has a set of **requirements** and four (4) **elements** that are used to connect **production modules**.



Elements and Food Factories

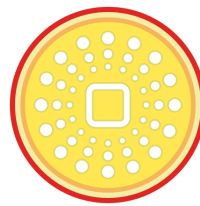
Food factories are supported by **elements**, and each type supports four (4) elements. Production modules with a matching element can be added to your food factory. There are eight (8) elements in *Cornucopia*.



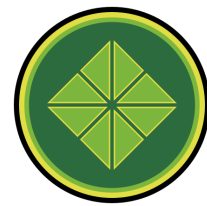
Carbon Dioxide



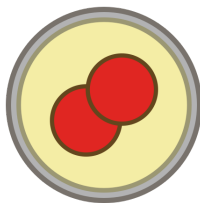
Heat



Light



Nitrogen



Oxygen



Phosphorous


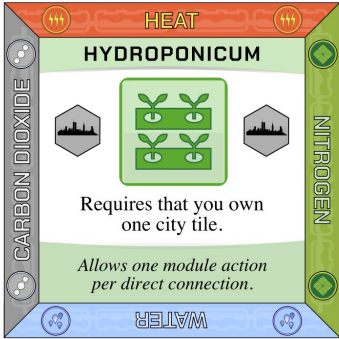



Potassium



Water

Types of Food Factories

Food Factory Tile	Requirements	Elements
 <p>HIBERNACULUM</p> <p>Requires that you own one greenery tile.</p> <p>Allows one module action per direct connection.</p>	<p>You must own a greenery tile and not have another food factory.</p> <p><i>Use a standard project action and pay 8 M€ to construct a hibernaculum.</i></p>	<p>Hibernaculums are outdoor facilities using planetary heat.</p> <ul style="list-style-type: none"> • Heat • Nitrogen • Oxygen • Potassium
 <p>HYDROPONICUM</p> <p>Requires that you own one city tile.</p> <p>Allows one module action per direct connection.</p>	<p>You must own a city tile and not have another food factory.</p> <p><i>Use a standard project action and pay 8 M€ to construct a hydroponicum.</i></p>	<p>Hydroponicums are indoor water-based growth facilities.</p> <ul style="list-style-type: none"> • Carbon Dioxide • Heat • Nitrogen • Water
 <p>MARITOREM</p> <p>Requires one unoccupied ocean tile.</p> <p>Allows one module action per direct connection.</p>	<p>There must be an unoccupied* ocean tile.</p> <p>You may not have another food factory.</p> <p><i>Use a standard project action and pay 8 M€ to construct a hibernaculum.</i></p>	<p>Maritorems are ocean-based aquaculture facilities.</p> <ul style="list-style-type: none"> • Carbon Dioxide • Light • Phosphorous • Water



You must own a **greenery tile** and not have another food factory.

Use a standard project action and pay 8 M€ to construct a terrarium.

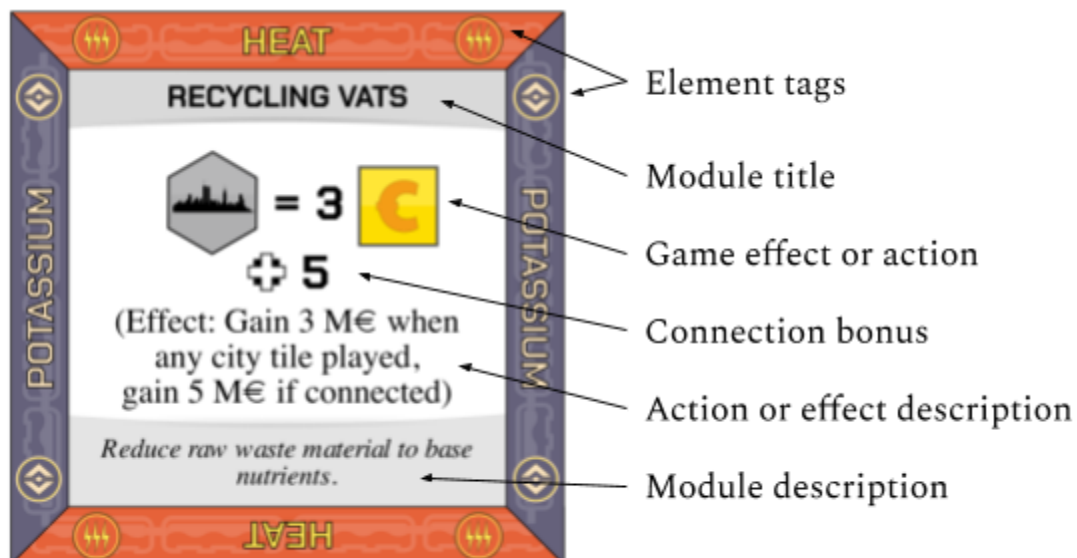
Terrariums are outdoor facilities using sunlight for heat.

- Light
- Oxygen
- Phosphorous
- Potassium

* When purchasing the **Maritorem** food factory, place your marker on the ocean tile. This marker indicates that the ocean is **occupied** by a food factory. The ocean is now counted as a tile owned by you for other game scoring and effects.

Production Modules

Production modules provide actions and effects similar to blue project cards. You may purchase and use up to eight (8) production modules during the game. Each production module has two (2) elements, which are identical on their horizontal and vertical sides.



Buying and Placing Production Modules

When you use a standard project action and spend 8 M€ to purchase a production module, you must immediately place it in your food factory, following these rules:

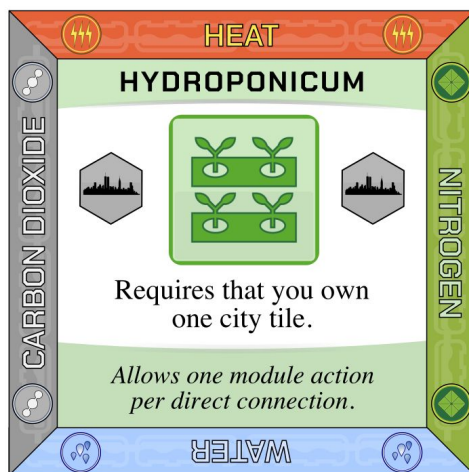
- You must own a food factory before purchasing a production module.
- Your food factory must be built in a 3x3 grid, with the food factory tile in the center position.
- When placing a production module, you must keep the tile text facing up. Neither food factory nor production module tiles may be rotated.
- A production module must directly match at least one adjacent element on an existing tile.
- You may not replace one of your existing production module tiles.

After placement, you may use this new module during this generation. (See **Using Module Actions** for details.)

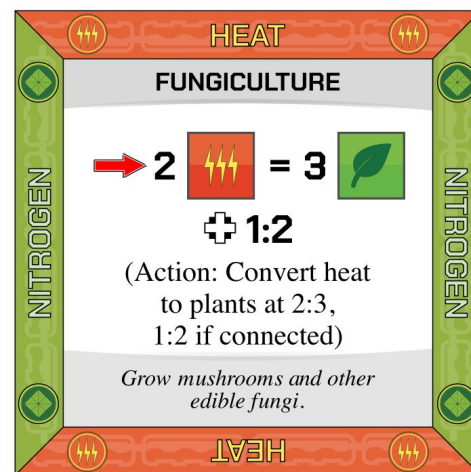
The new module is not required to match *all* directly adjacent elements. However, failing to do so negates the ability to earn a **connection bonus** for that module.

Example: Production Module Placement

You have built a *hydroponicum* and purchased the *Fungiculture* production module.

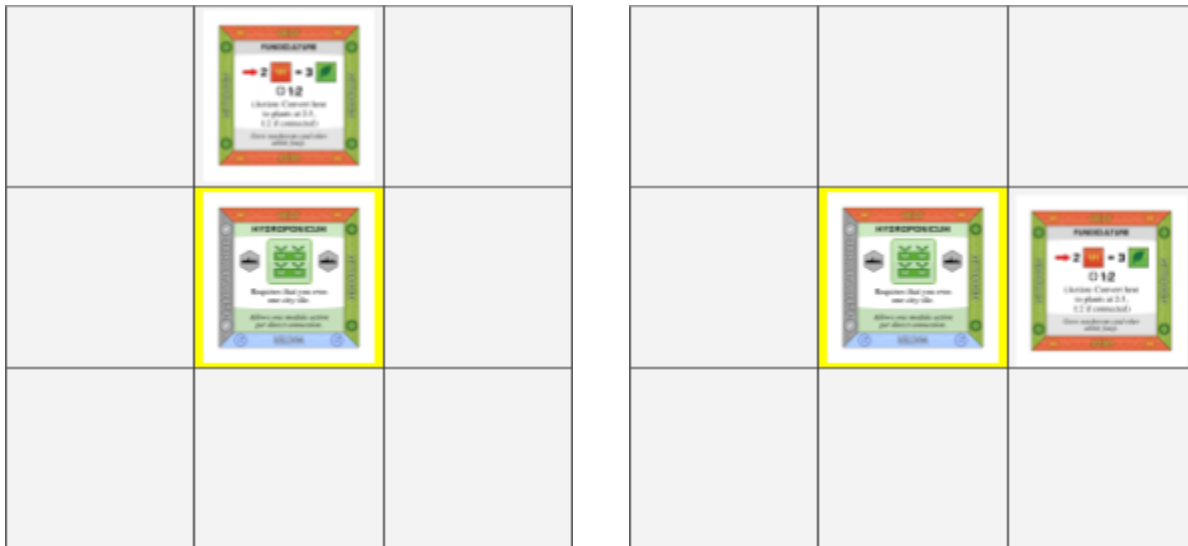


The hydroponicum supports Carbon Dioxide, Heat, Nitrogen, and Water production modules.



The Fungiculture production module requires Heat or Nitrogen.

In this example, you have the following placement options.



Illegal Production Module Placement

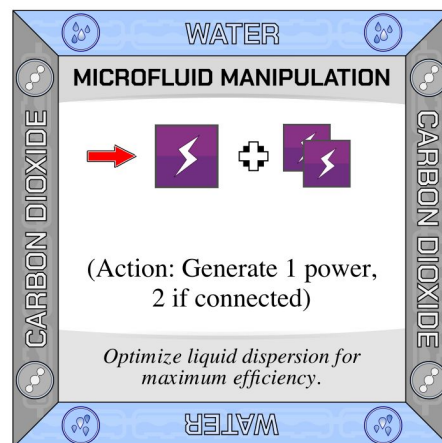
In the example above, we cannot place the *Fungiculture* tile facing the Water or Carbon Dioxide elements of the food factory. The directly adjacent sides must match elements.

Example: Advanced Production Module Placement

As the game progresses, you may add multiple production modules. Each new module must match at least one directly adjacent element.



Current food factory



New tile: *Microfluid Manipulation*

In this example, there are two legal moves:



In each case, the new production module matches an existing element. (Water on the left example; Carbon Dioxide on the right example.)

Using Module Actions

Unlike blue project cards, production module actions are determined by the size of your factory.

- For each production module directly connected to your food factory, you may take one production module action per generation.
- You have a maximum of four (4) production module actions per generation.
- These actions can be used on **any** of your production modules but not on other cards or projects.
- Using these actions count as one of your two normal *turn actions*.

Resources – such as microbes – placed on production modules are subject to the effects of other project actions and effects, such as the *Ants* ability to steal microbes.



This food factory has three (3) directly connected modules.



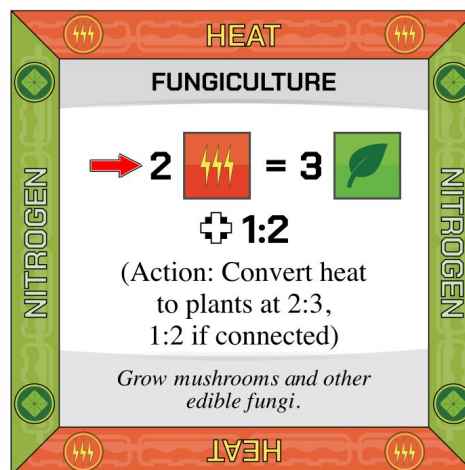
This food factory has two (2) directly connected modules.

Example: Production Module Action

The unconnected *Fungiculture* production module produces 3 plants for a cost of 2 heat.

You may trade in as much heat as you like at this conversion rate, so long as it is a multiple of two.

So you may trade 6 heat for 9 plants as your one action for this module.



When you take a conversion action on a production module, you may use it multiple times as a single action, like when paying steel to reduce the cost of building projects.

Example: Production Module Effect

The *Recycling Vats* production module has the effect: *Gain 3 M€ when any city tile is placed.*

This effect can be triggered multiple times during a generation and does not count as a module production action.


If this module were **connected**, it would generate 5 M€.



As with blue project cards, only production modules with **action arrows** are limited to one use per generation. Cards such as *Recycling Vats* apply every time the effect is triggered.

Connection Bonuses

Production modules can connect to two directly adjacent modules and may be connected to the central food factory. If a production module matches all directly adjacent elements, it is considered **connected** and its action or effect may increase.

	Connection bonuses are indicated by the connection symbol.	Remember: If one pair of directly adjacent elements does not match, the module is not connected .
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Example: Connected Production Modules



In this example, the *Fungicide* tile is **connected** because it matches the *Haber Generators* on its left and *Aquaculture* on its right. All three production tiles have *Nitrogen* as an element.

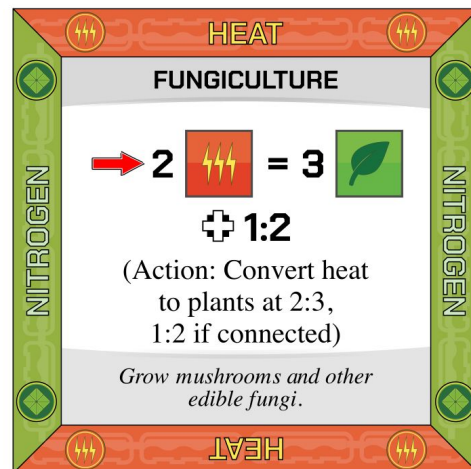
The *Cyanobacteria* tile in the middle-right cannot be connected, since it does not match with the *Aquaculture* tile above it.

In this example, you have two (2) production actions that can be used on these four (4) production modules.

The *Fungiculture* production module produces 3 plants for a cost of 2 heat.

Since this module is **connected**, that action allows conversion of 2 plants for 1 heat.

Tip! Planning your production modules pays off with increased efficiency!



Appendix A: Drafting Variant

If you prefer, you can use a drafting mechanic instead of the Marketplace.

To use this variant, add an *Investment* phase after the *Research* phase. During the Investment phase, shuffle and deal 5 production modules from the stack and hand them face down to the first player.

The first player takes the following actions:

- If the player **does not have a food factory**, they may purchase and place one, provided they meet the requirements for doing so.
- After making this selection, pass the production modules face down to the player to their left.
- If the player **does have a food factory**, they may look at the production modules and choose to purchase one.
- After making this selection, pass the remaining modules face down to the player to their left.

This sequence repeats for each player until each player has had an opportunity to purchase food factories and production modules. When complete, place the unpurchased production modules face down in the discard pile and move to the *Action* phase.

Appendix B: Solo Play Variant Rules

If using *Cornucopia* with the *Terraforming Mars* solo play variant, reduce the number of generations available by one. (13 generations for the base game; 11 generations if using *Prelude*.)