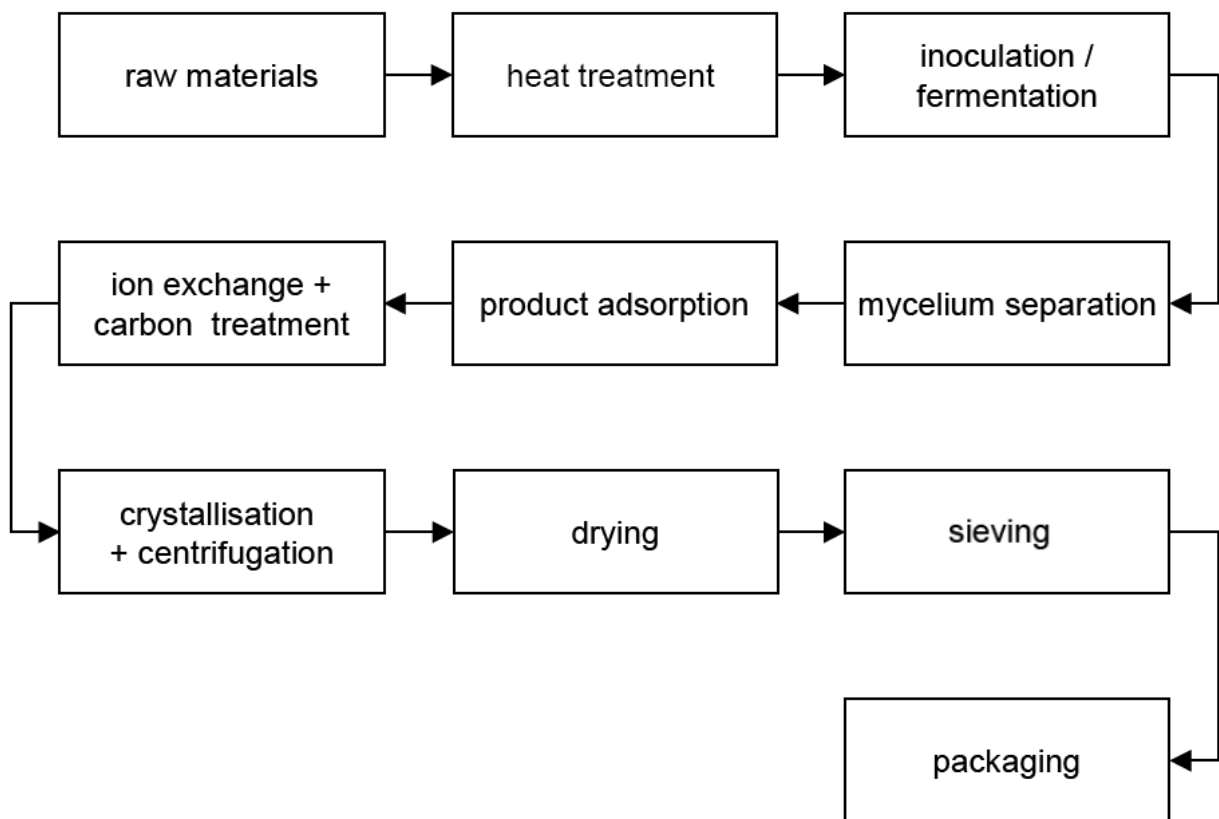


Production of Citric Acid Port Colborne, Canada

Jungbunzlauer citric acid is produced by a submerged fermentation process which employs a strain of the micro-organism *Aspergillus niger* to convert sugar into citric acid. This leaflet describes the manufacturing processes currently operated by Jungbunzlauer.

The following flowchart covers the single steps of our citric acid manufacturing process.



The substrate (glucose syrup) is heat-treated and inoculated with *Aspergillus niger*. After the fermentation the biological solids (mycelium) are removed. Then citric acid is recovered from the remaining broth by an adsorption process. The resulting citric acid solution is purified by ion exchange and carbon treatment. Finally the citric acid solution is evaporated, and citric acid is crystallised, dried, sieved and packaged.