



Top 5 Questions You Should Ask When Considering Contract Fermentation Suppliers

A Message From Michael King, Ph.D, MDG CEO & Founder

A successful microbial product commercialization rests on many different variables. One major component in the success equation is the role of the contract fermentation manufacturer. The manufacturing, R&D, and operational decisions they make will affect your business; it is up to you to choose the contract fermentation supplier that best fits your needs and commercialization plans. Over the years I have seen the wrong choice in suppliers create anywhere from a one to two year delay in development to putting a company out of business. The damage can be far more substantial than one may initially realize. In order to prevent this type of damage, a good place to start is by asking the right questions.



1) Does the supplier grow the type of bacteria I need?

Many fermentation companies have a select expertise and may not be willing to grow your type of microorganism, so save yourself some time upfront by making this your first question. In fact, the earlier you ask in your development process, the better, as you may not be able to find anyone who wants to grow your unique organism at the volume and price you require. In our case, we grow primarily *Bacillus*. Most often we grow *Bacillus licheniformis*, *Bacillus subtilis*, *Bacillus amyloliquefaciens*, *Bacillus pumilus* and other closely related *Bacillus* species. By focusing on *Bacillus* species we have developed an expertise delivering some of the highest yields per liter in the industry.

2) Can the custom fermentation supplier grow pure culture, how is it tested, and who pays for it if it is contaminated?

Many of the bigger global conglomerates require DNA based testing methods to insure purity. You should request the same. We suggest this because if you are using DNA based purity tests, you will quickly find out a lot of companies with fermentation vessels struggle to produce a pure strain. We welcome you to request this test on our products. We tend to be the ones you call when you need it to be pure.

Follow-Up Question: If the supplier sends you a contaminated product, who is going to pay for it? Ask this prior to choosing a supplier as you don't want to get charged for a contaminated product. Your policy should be no purity, no pay.

3) How long will the process take? Quick vs Economical.

It is important to understand your timelines well before you will need the product. A company can quickly take a pure strain and throw it in their fermenter, but insuring proper yields to meet your economics takes time. At MDG, we allocate the proper time to provide economical yields and work out the oddities of your strain. Please contact us for a flow chart of the steps required to bring your strain through scale up and manufacturing.





4) Can this supplier match the economics and amount of end product I need to be successful?

Customers commonly start by asking for price per liter. That often isn't the right question to be asking. Here's a better question to ask; how much end product (units) will I obtain in your various fermenter sizes? Each fermentation company has differing yield outputs per liter. It is common that a smaller fermenter can produce much better oxygen transfer rates, or kLa's, which results in a higher yield per liter of medium. Additionally, by asking how much end product is produced, a supplier should be able to determine if the volume is a match for your needs.

Here are a few examples:

Customer 1: A customer came to MDG requesting a 10,000 liter fermentation order. However, upon end-product calculations using our expertise in *Bacillus* and higher kLa's, we estimated this customer only needed a five (5) liter run to fulfill their needs.

Customer 2: An inquiry was submitted requesting our price per liter on a 5000 liter run. The customer decided to go with a competitor whose price was slightly lower than our quote. About 18 months later, the same customer came back to MDG. As it turns out, the yield of the other supplier was so low; they had to run 30,000 liters worth of fermentation to equal the yields of our 5000 liter run. The net meant they spent 4.5X our original quoted price.

5) Is the manufacturer going to grow this strain in-house or will they be brokering this out to someone else?

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At MDG, we understand choosing a contract fermentation supplier takes time and consideration. If you have any additional questions regarding the MDG fermentation process please contact us at 414-235-3767 or info@mdgbio.com.