

A Speedy Breedy Story



We are a small (but perfectly formed) family run business based in the heart of Yorkshire with a simple mission in life - To create the best ice cream this side of Italy!

Our entrepreneurial journey embarked when we realised there was an opportunity in the market for a business that produced freshly made, luxury dairy ice-cream that could be delivered right to the doorsteps of the Rotherham, Barnsley and Doncaster communities.

It all started when we (Alistair and Will), two teenagers from Barnsley set up our business in November 2013 with the support of our family and youth enterprise scheme. We haven't looked back since then! We deliver over 20 delicious flavors of handmade, luxury dairy ice-cream seven days a week.

Our ice creams come with an Italian twist as we were invited to visit the Gelato University in Italy. The natural flavours and secret ingredients make our ice cream delicious and a huge success.

BBC recently featured our story for selling about 120 litres of ice cream a week nonetheless in winter!

It has just been a few months and we are already receiving enquiries from local restaurants, cafes and farm shops, as well as independent retailers who are excited about and very interested in our products and branding, so it is an exciting time for us.



As we are expanding and getting busier, we are committed to deliver quality ice-creams all the time. It is just the two of us at the moment and so we have to work in the business – handle the production process, package and deliver customer delight! It is fun but strenuous!

We were looking for an easy solution to monitor the quality of our processes and products in house rather than adding extra strain on resources by sending the samples to the lab and waiting for the results.

We like using social media as it has been an exceptional marketing tool for us and has helped us grow. As a result, we were spotted by Speedy Breedy on Twitter and started a

conversation. That's it, there it was, we got more information about this innovative tool and decided to use it.

Preeti visited us at the Century Business Centre, provided us with a quick tutorial and we were set to test in 30 minutes!

As part of the case study Speedy Breedy wanted us to test for the levels of *E.coli*, coliforms and TVC present in the Pastures Moo Ice Cream.

We were provided with a simple trial plan and guidelines on how to use Speedy Breedy. TSB (Tryptone Soy broth) and MacConkey's culture vessels, sterile water to dilute ice cream samples, as well as swabs for environmental testing were also provided.

The trial plan was for seven separate tests. Four of these tested TVC levels in 1/10 diluted ice cream, two tests for the water quality and milk and one test to evaluate environmental cleanliness.

We were also advised to collect duplicates of all the samples and swabs for comparative agar plating at BACTEST.

We got the results in few hours and found that Speedy Breedy was very easy to operate! We then provided the Speedy Breedy team with the results to analyse and compare with Agar plating - industry gold standard. All the results matched up very well. (See the analysis of the result section for more information.)

It's fun to work with such a smart technology which is hassle free and saves time and money. We are now producing 6 batches of ice-cream a week and monitor our quality in-house with our Speedy Breedy.

Speedy Breedy is a very useful instrument and Pastures Moo are proud to be pioneers with this new technology.

Analysis of Results

Sample Number	Which Curve? – Ice Cream, Water, Environment	Speedy Breedy Time to Detection (Mins)	BACTEST Agar Plate Count Result
Ice Cream # 1	Day 1, Left Side	426	480 CFU / g ice cream
Ice Cream # 2	Day 1, Right Side	416	520 CFU / g ice cream
Ice Cream # 3	Day 2, Left Side	386	1120 CFU / g ice cream
Ice Cream # 4	Day 2, Right Side	347	1470 CFU / g ice cream
Milk	Day 3, Left Side	680	120 CFU / ml milk
Water	Day 3, Right Side	No Detection *	No Growth
Swab	Day 4, Left Side	542	18 CFU / ml **

There seems to be good correspondence between the samples run in Speedy Breedy and the duplicates plated on agar plates.

The values obtained for ice cream are well within safe standards, according to the EU safety limits which list the limits for total aerobic counts (TVC by another name), in ice cream as <10,000 CFU / g. likewise the milk level is well within standards. ¹

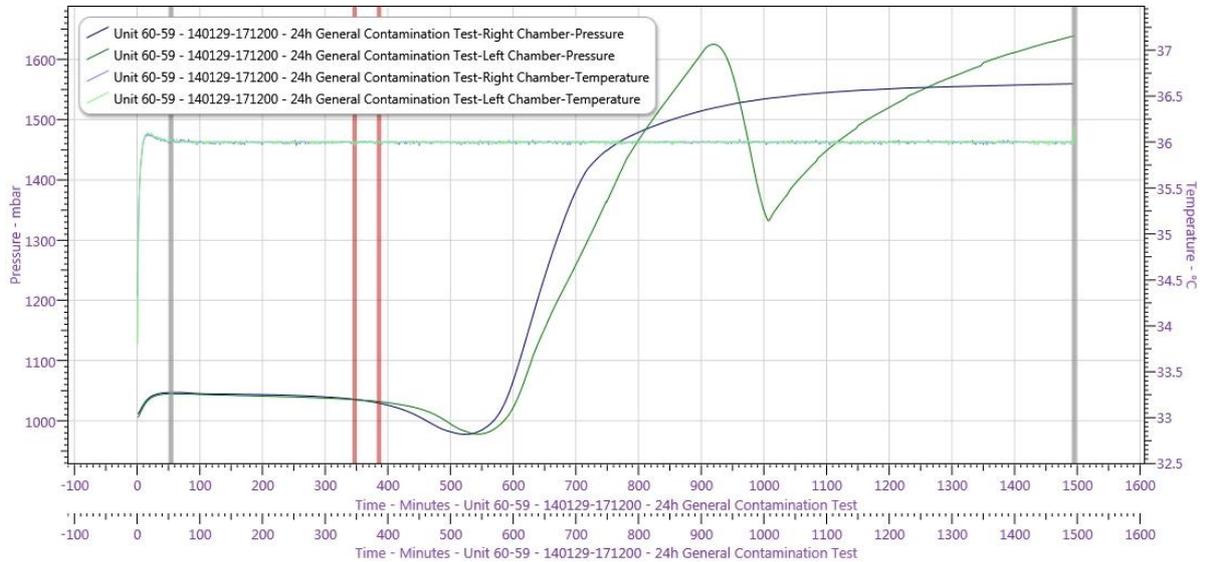
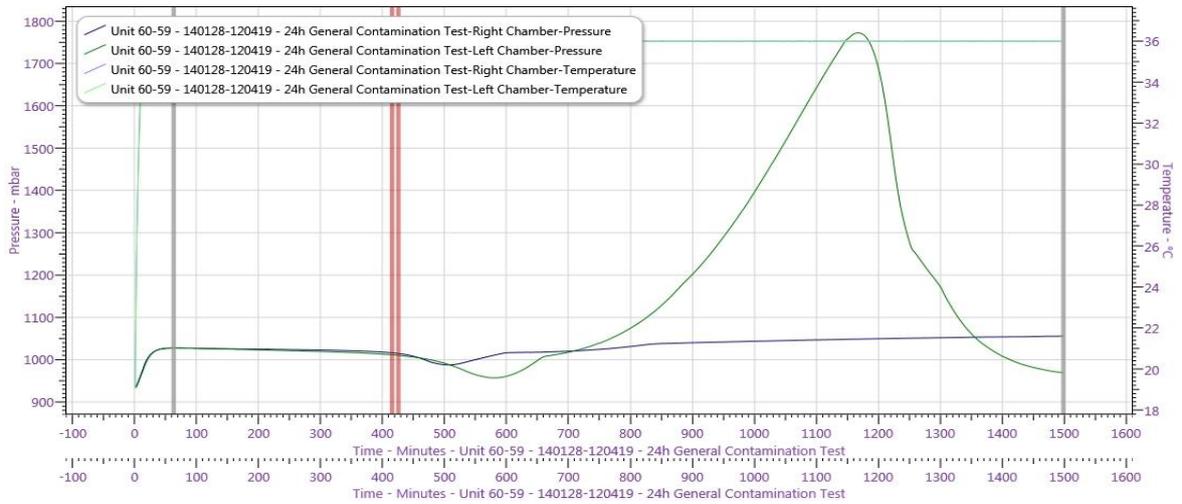
Note * - Even though there is a detection event, it appears to have been caused by opening the lids before the test was cancelled and is therefore considered negative.

Note ** - All swab-related tests were performed by immersing the swab head in a 4ml volume of peptone water (a general nutrient broth) for 30 minutes, agitating at several stages, to release any bacteria from the swab head. A 1ml volume of the peptone water was then transferred to agar plate.

Swab results can vary in how they are reported – sometimes they are reported as CFU / cm² of swab head space, sometimes they are reported as CFU / cm² of area swabbed and in this case, without that information, the swab was simply washed in a volume of liquid and this liquid tested in SB. When looking at swabs results, given the number of uncontrolled variables in testing, the approach is to typically not look at just one result by itself but to use swab results over time for trend analysis.

¹ HPA guidelines for assessing the microbiological safety of ready-to-eat foods 08-09, Pg. 32

Speedy Breedy Graphs



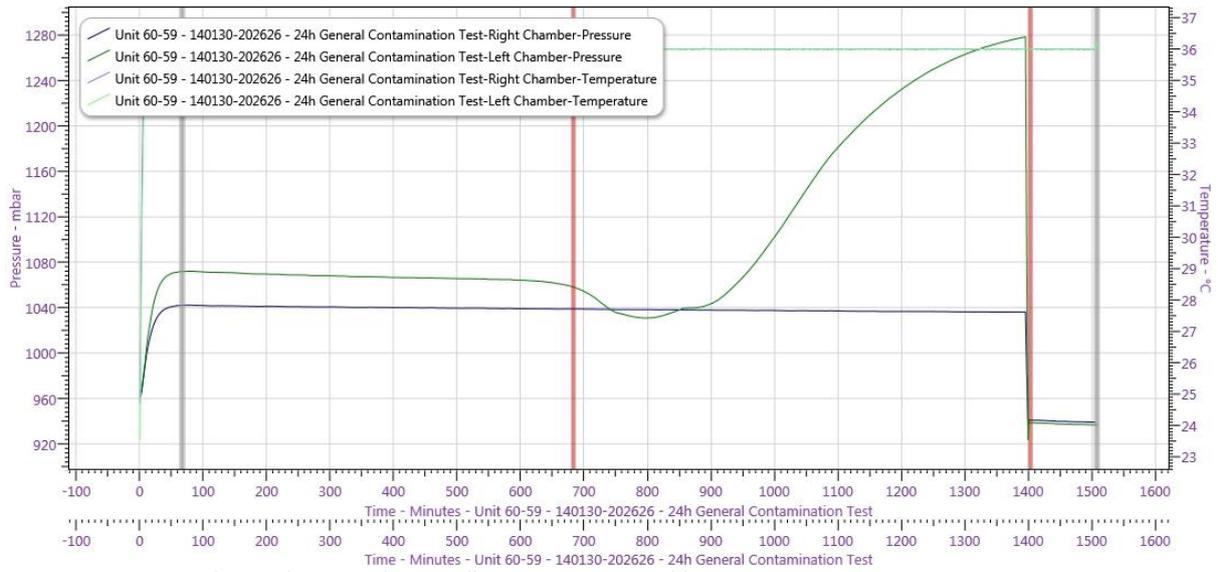


Figure 3. Speedy Breedy curves day 3. Milk in green, Water in blue.

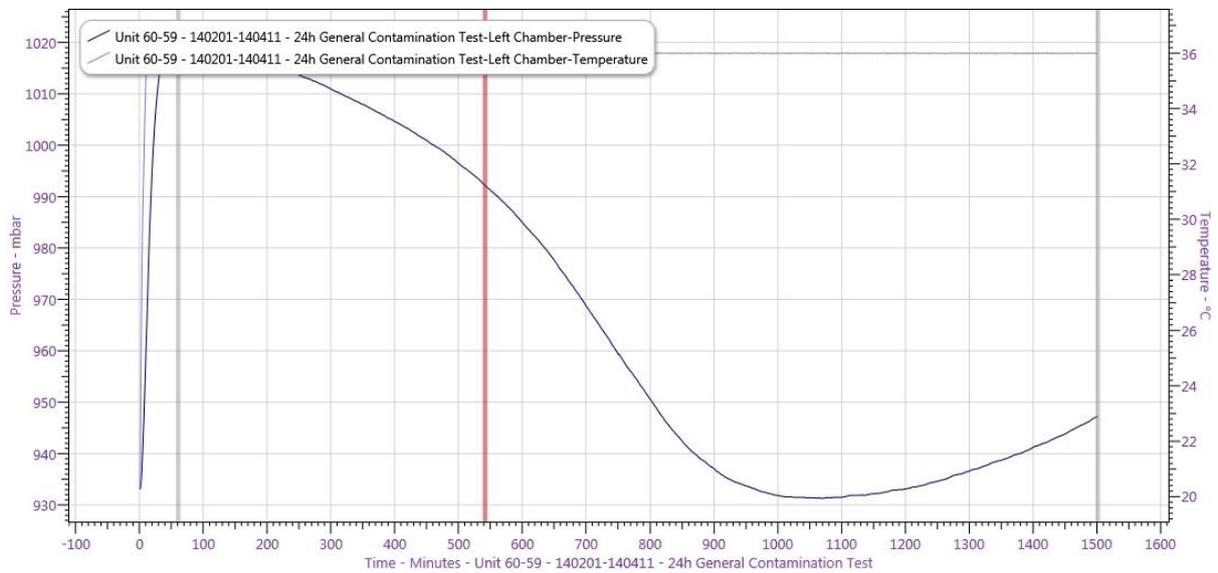


Figure 4. Speedy Breedy curves day 4. Swab in blue.

