Understanding Ice-Cream Makers

Ice-cream is seldom far away from the dessert menu of any restaurant and while it is possible to buy it from a frozen food wholesaler, nothing compares to ice-cream made by chefs in the kitchen. The ingredients will be superior and the flavour is chosen by the chef, not the ice-cream factory.

The equipment industry has long recognised the demand for low-volume, but high quality ice-cream and produce machines for small restaurants as well as busy ice-cream parlours. The function of an ice-cream maker is to take a chilled egg custard and churn it slowly under a freeze temperature until it forms the familiar smooth ice-cream.

There are two types of ice-cream, soft and hard, but the production process is very similar. Soft ice-cream gets its light and creamy texture through the introduction of air in the freezing and churning process. The basic ingredient of all ice-cream is custard, which is churned as it is frozen in the ice-cream maker to prevent large ice crystals forming and giving a coarse texture.

The best artisan hard ice-cream is made using fresh eggs cream, sugar and milk with a flavouring to form a hot custard. This needs to be pasteurised for food safety reasons and the correct way to do this is to use a pasteuriser. This is a machine which mixed the custard, cooks it, takes it up to 85 deg C for pasteurisation, then rapidly chills it down to a safe 4 deg C.

The lasting quality of ice-cream improves if the chilled custard mix is matured for a minimum of eight hours to a maximum of 72 hours. This allows any added emulsifiers and stabilisers to work on the mixture. If fresh eggs are used in the mix these also give a stabilising effect which needs time to work. Any stabiliser prevents the ice-cream from crumbling, which is a problem if batches are going to be held for more than 24 hours.

The second process of ice-cream making is the churning and freezing, which is done in a separate machine called a batch freezer in professional language, but to chefs is the ice-cream maker. Most machines have a signal system that indicates when the ice-cream is ready for decanting into storage tubs for hold and freeze.

For restaurants with limited equipment budgets but a desire to produce quality ice-cream it is possible to delay buying a pasteurisation unit by using a blast chiller to safely pull down the temperature of the custard.

An ice-cream maker can also be used to produce iced fruit desserts, such as granitas and sorbets. These are a mix of fruit, water and sugar. There are crossover recipes and in the interpretation of what is a sorbet, a granita and fruit ices, but they provide a sharper, clearer taste to ice-cream due to the absence of dairy products

Cleaning of ice-cream machines is very important because of the use of dairy products. Hard ice-cream machines and pasteurisers should be cleaned between every batch, both for a hygiene point and to prevent flavour transfer when different flavoured ice-creams are in production.

Soft ice-cream machines are either gravity fed or pump action. Pump action units have more internal and dispense parts to clean that gravity-fed units. Small table-top units tend to be gravity-fed while the type of unit seen in fast food outlets and busy takeaway are usually pump action.

While it is tempting for a small restaurant to buy a domestic ice-cream maker, these seldom deliver the quality of ice-cream texture which restaurant customers expect. Domestic ice-cream makers may not have a freezing facility and the output will have a coarse texture that is unacceptable for a restaurant.

Ice-cream making and storage tips

Making ice-cream and sorbets is not a free-thinking form of cookery. To produce a smooth, rich product needs exact recipes. A common mistake is to think that adding lots of pulped fruit will give a better product. Too much fruit will upset the sugar balance and inhibit smooth freezing of the ice crystals. Equally, introducing too much fat in the form of eggs or cream will also cause the ice-cream to miss-form. All suppliers of ice-cream machines offer recipe and ingredient support, many will also give training to chefs.

Home-made ice-cream seldom contains preservatives or stabilisers, so does not keep well. Try to only make that amount which is needed for one-day's service to avoid serving an ice-cream which is starting to break up.

Ice-cream pulls in flavour taint very easily, so keep a lid on it and store it away from any strongly aromatic products.

A professional heavy metal scoop is the best way of dispensing ice-cream, but the scoop can attract bacteria to the fat and sugar during use. Keep the scoop in a pot of sanitised water and change the water every hour.

How to find out more about ice-cream machines

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Web site www.justcatering.com

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