



Edible Inkjet Prints: Printing Photographs on Food

FLAAR Fast Facts





Caption for front cover:
Cookies printed with Spectra printheads at DRUPA trade show 2004.

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Introduction

FLAAR Fast Facts offer tips and information on where to learn more about a specific topic. This FLAAR Fast Facts report is about using edible inks to print on food like cookies, birthday cakes, and more. Reports in the Fast Facts series are usually 1 or 2 pages in length.

At the DRUPA 2004 trade show in Germany, it was possible to see - and eat - cookies that were decorated by an inkjet printer; this printer squirts ink on top of pre-baked cookies. However, it is now possible for small businesses - and even home users - to create professionally created birthday cakes using a desktop inkjet printer and a set of edible inks.

Edible Ink Prints

Professor Hellmuth first heard about edible inkjet decoration for birthday cakes and the like four years ago; however, it wasn't until summer 2002 that he found an actual discussion of this on the internet. While doing a search for scan-top-print solutions, Professor Hellmuth found that by coincidence that a leading company in this technology had recently developed a printer and software system that prints directly onto cakes. Their product is called the "PhotoCake" system, and a discussion of this system is found at Vivid Image's website (<http://www.vividimage.com/about.html>).



A sequence of images showing the printing of cookies with edible ink from a Spectra printer (DRUPA 2004).

TOP LEFT: This is the actual Spectra printer. You can see the baked cookies passing through the assembly line.

TOP RIGHT: A plate of printed cookies waits at the end of the assembly line.

BOTTOM LEFT: A German hostess at the Spectra booth proudly overlooks the finished inkjet printing decoration on the cookies.

In other instances I had been told that you printed onto edible rice paper. In some cases, once the rice paper has been printed on with edible ink, the printed rice paper can be placed on top of the cake and frosting can be placed around rice paper to hide the edges, or placed on top of the photo to give it a three-dimensional look.

Edible Inks

The following is a list of companies that currently sell edible inks for use in desktop inkjet printers:

- Kopykake (California), http://www.kopykake.com/pc_edible_ink.html
- Printing Images CtC, Inc. (Philippines), <http://www.iqdurableink.com/page15.html>
- PhotoFrost (Florida), http://www.computercakes.com/edible_ink.html
- Tasty FotoArt Edible Photos and Supplies (Colorado), <http://www.tastyfotoart.com/Machine.html>

In researching these websites, it appears that most companies manufacture inkjet cartridges that are compatible with (primarily) Canon inkjet printers and Hewlett-Packard printers. It is imperative that users must make sure that their printer is compatible with the manufactured ink cartridges before purchasing them.

It is also interesting to note that PhotoFrost does provide frostings that are kosher.

Each of these companies also manufactures a cleaning kit for the desktop inkjet printer, as well as tips on how to clean the printer efficiently so that it can still be used as a normal printer, as well as for cake decorating. However, it would be safer if small bakeries could dedicate a desktop inkjet printer solely to edible inks so that there is less chance of contamination with the print cartridges.

Edible Inkjet Paper

The companies above, as well as David's Inkjet Paper (<http://www.davidsdist.com/papflm.html>) sell an edible inkjet paper that is made out of starch. Most of the time, the edible paper is a form of rice paper. Because it is made out of starch, it will be strong enough to go through a desktop inkjet printer without being damaged. Also, some forms of the edible inkjet printer can also dissolve once it gets in contact with water; for instance, if a sheet of edible paper was printed on and placed on top of the cake, the paper dissolves with the printed image still intact.



A greeting card for dogs created with edible inkjet printing technology.

Several companies provide edible fondant paper as well. Fondant is essentially an icing that is made out of gelatin, confectioner's sugar and water. When fondant is first made, it appears to look like and spreads on a surface just like normal frosting, but when the fondant dries out, the surface of the cake is hard. Most bakers like using fondant as a base for decorations on wedding cakes, or goods that have to undergo a lot of decoration. One of the primary reasons fondant is used is that once it hardens, it actually does keep the cake moist and fresh for several days, especially during the warm summer months. Recipes for fondant can be found very easily on the internet and in many cookbooks. Essentially, this is the edible frosting sheet "paper." When you buy this commercially, you get fondant as the top layer affixed to actual paper. The actual paper makes it possible for the layer of icing to pass through the printer. After you print, you pull the paper backing off as you lay the fondant on top of your cake.



Decorating Cakes the Old-Fashioned Way

Kopykake also makes opaque projectors and airbrush systems for decorating cakes. How this works is that you load a book or image into the projector, and the projector then, in turn, enlarges the image and projects it onto the cake so that you can trace it with different frostings. These projectors range in price from \$200 to \$500.

Possible Applications with the Laser Engraver

It has been recently noted in a February 2005 edition of the New York Times that a chef in Chicago has been using essentially the same techniques that we've mentioned here; the only difference is that the chef is printing pictures of sushi and the pictures taste exactly how they're supposed to taste! This chef is also investigating other ways of making eating fun by levitating food off of the plate, as well as using lasers to prepare food. The following link (<http://www.engadget.com/entry/1234000923030247/#comments>) will take you to an introduction to the New York Times article.

Summary

In order to use edible printing, the user needs to purchase a set of edible inks and printing paper. Most of the edible printer comes to you already bonded to a backing paper so they pass through your printer. After the print emerges from your printer, you can off the backing paper and place the printed image onto the top of the cake.

Sources and Resources on the Internet

All the web pages already cited provided information, as well as:

www.caketoppub.com

www.chocolography.com

www.sensient-tech.com and www.spectra-inc.com have further information on edible ink for cookies.

www.sugarcraft.com/D-pictures.htm feature pictures that can be used on edible paper.

Acknowledgments

We would like to also thank colleagues in the edible inkjet industry for providing us with some research assistance. Since we work and receive information under several non-disclosure agreements, we do not list specific products and/or individuals that we have received under verbal or written NDA.



Advisory

We are not able to provide any certificate of edibility on any of the products mentioned in this report. The reader must be sure that they are not allergic to any of the ingredients in any of the aforementioned products. Accordingly, we are also unable to certify any of the aforementioned products that originate from a company outside of the United States.

As should be obvious, it is safest if you dedicate one printer to edible inks and don't mix by switching inks back and forth.

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