



# BLOMMER CHOCOLATE COMPANY

## PRETZEL CRACKING EXPERIMENT

### A STUDY OF PREVENTING CRACKING IN THE OUTER CHOCOLATE SHELL

#### INTRODUCTION

At Blommer Chocolate, we have had different inquiries about suggestions regarding preventing chocolate coating from cracking on the outside of enrobed pretzels. We suspect that pretzel cracking can shorten a product's shelf life as well as ruin the aesthetics of the package. We've conducted two different studies to determine if we could help find a solution. In both studies, we prepared chocolate with different levels of milkfat in various types of chocolate. Milkfat makes chocolate softer and more pliable. Our thoughts were that it would help the chocolate resist cracking as well. We also wanted to test whether sealed ("new") pretzels would yield any different results than opened ("old") pretzels. Some suggest that opening the pretzels the day before they are enrobed might help them to absorb a little moisture and equilibrate to the environment. This early absorption of moisture might help resist cracking since the pretzels have already expanded.

#### EXPERIMENT

We created a milk chocolate formula and a sugar free milk chocolate flavored coating formula with various levels of milkfat. We then enrobed three ring pretzels, both "new" sealed pretzels and previously opened "old" pretzels, in these chocolates as well as peanut butter filled pretzel nuggets. After the pretzels were enrobed and cooled, we packaged them in sealed bags and stored them in a 65° F warehouse. Once a week for nine weeks, the pretzels were evaluated and the number of cracked pretzels were counted.

#### DISCUSSION

Higher milk fat seems to prevent blooming on PB filled pretzels and the peanut butter appears to have a protective effect on cracking. Higher milk fat prevents cracking on three-hole pretzels in both milk chocolate and sugar free coated pretzels; the general trend was the higher the milk fat, the fewer cracks. Allowing the pretzels to equilibrate to the environment does have a protective effect over cracking; "old" pretzels were about half as likely to crack as "new" pretzels. While every customer has specific needs and ingredients, these are a few troubleshooting tactics that we have been able to study to aid with formulations.

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