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About New Bottle for Milk and Not Only

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Abstract

We perfectly know well the standard shape of bottle and carboy. They usually have their form which has two parts, namely: cylindrical (below) and conical (above) [1-3]. And we got used to it. Evidently, this is rather convenient form to drink (water, milk, cream, mayonnaise, beer, juice, oil, kefir and so on). I don't want to argue about it. But…Practically each thing has both positive and negative aspects [4]. By my opinion, there are minimum two important unfavorable factors. First of all, we lose useful space which cannot utilize in practice because of the conical shape of bottles. We cannot place one bottle to the other one tightly along the altitude of bottle (conical part disturbs us). And the second negative and important moment is the next. Because of the conical part in a bottle there is a space usually in the narrow part where good products can be leaved without their application as food. In this paper one new way how to surmount foregoing challenges will be described.

Keywords: Bottle; Cream; Empty Space; Problem; Shape

Introduction

What are the main negative aspects which we find after made investigation connected with the package for milk, cream and soured (cultured) cream? Here they are:

If these products were placed into the glass or thick paper/plastic/pasteboard bottle, we have no possibility to take them out (or pour out) in full because of adhesion these products to the inner walls. Especially, it takes place with cream, fat milk and soured cream. There is from 8 till 14 grams on average (sometimes essentially more) of definite product inside of the bottle. This useful amount we constantly lose irrevocably. All over the world these senseless losses are many million tons! That's why we have to keep such necessary products as our food.

Now some words about the bottle shape. I believe that such form which has practically two parts (cylindrical and conical) isn't good. We don't utilize free space which is around of the conical bottle part. There is only fresh air around. Consequently, if we put many bottles into the box, very much free space we don't use for our products at all. We cannot set one bottle to the nearest one tightly in their upper parts (where there is a neck). In this case the only right decision can be a new shape for bottle, namely: rectangular or square. In this situation we don't draw except bottles the fresh air yet. At last, it is rather difficult to wash bottles inside because of their traditional shapes. We must use hot water, soap, shampoo or special liquids. After this procedure without fail it is needed to use clean water too. Below it will be explained how to delete practically all of these actions.

Text 1

More traditional shapes for bottles are given below (Figure. 1 and Figure. 2).

Figure 1: Bottles for milk.

Figure 2: Bottles for oil.

These pictures clearly show that the narrow neck is the main obstacle to take cream from the bottle completely especially if the cream (or milk) is rather fat/thick. Large part of them will be on the inner wall of such bottles (or flasks and retorts).

At the present time producers don't make such vessels/packaging for the inner walls which have the smallest adhesion for creams and oil. That's why it is too difficult to withdraw these products in full. Moreover, the definite problem is to clean qualitative such shapes. Hence, many products we cannot use as our food and must waste constantly many hours to delete the stuck products from the inner walls of bottles.

Text 2

Now our speech will be about "empty space" which is round the conical neck part in the bottle. It was as the afore-mentioned factor, but here using the computer programme MathCAD we'll show the air space which isn't use because of the narrow or/and conical shape of a bottle (Figure 3).

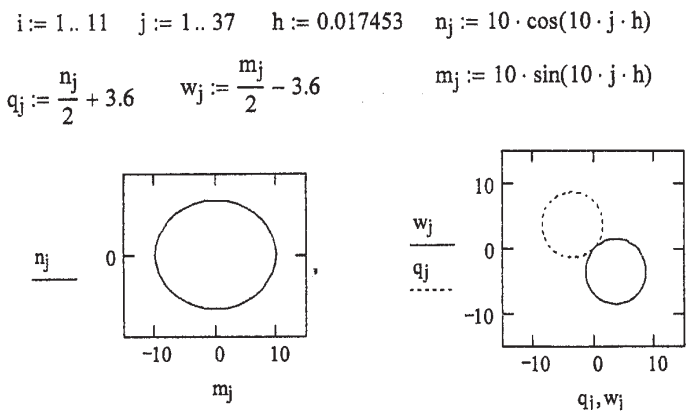

Figure 3: One circumference (to the left); contact for two circles (to the right).

Figure 4 shows us how many empty/free space we can usually waste even for the cylindrical form of bottles. But for the narrow neck of bottle we will waste much more.

Therefore, the shape for milk/oil bottle must have rectangular or square form. It seems to me, that I have just proved it correctly.

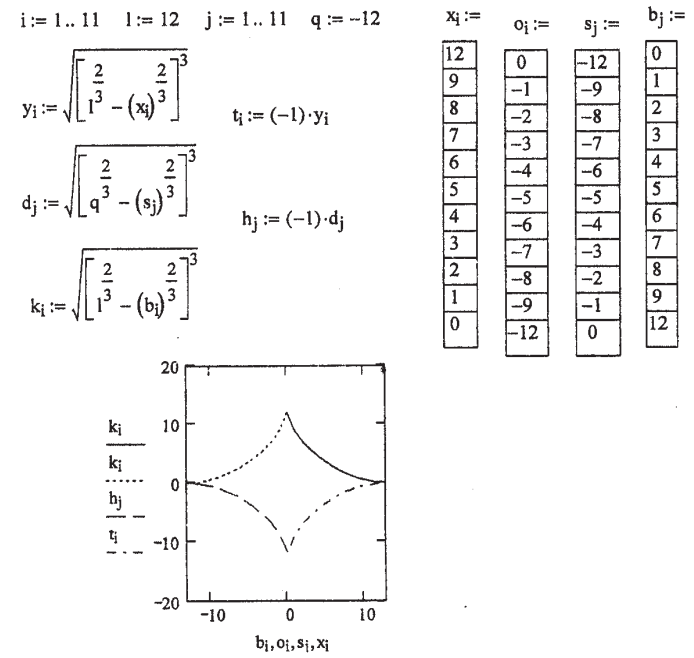

Figure 4: Fragments of contact among the four parts of bottles.

Text 3

Now let's try to solve the next problem which is connected with adhesion process for different products (for example, cream, milk, oil, mayonnaise, beer, juice, soured cream. and so forth.

Really, it's might easy to overcome this problem. Namely, here it is the next version. The producer must make both rectangular or square shape of bottle and the thin edible film which they have to insert/put it into the bottle. This film will be fastened firmly (by means of glue or elastic ring) in the upper part of the bottle.

In this case one can eat this thin edible tasty film with the remainder of food. Sometimes this film can be dissolved in the warm or hot water to drink it after that.

At last, we can make this film with the small nipple at the upper part. In this case we can drink the product not only with open lid but through rather small opening. And one additional important moment: we can wash this film, but the inner wall of bottle will be clean because of our product didn't have any contact with it.

Conclusion

All tasks and problem are solved just now. We can save different good products to eat in full. The adhesion for products doesn't play any negative role at all. Thin edible film helps us to save both products in full and keep the inner wall of bottle having rectangular or square shape clean too. Moreover, we'll transport not bottles with air but mainly bottles only.

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