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Re-useable Bottles

Brewlab colleagues Dr Keith Thomas and Brian Yorston look at the practicalities and challenges of re-using bottles...



In a recent online course, a few weeks ago, our discussions led to the proposed Deposit Return Scheme which will undoubtedly be implemented in Scotland next year.

Consultations have occurred in England and Wales. So again, we may follow Scotland's lead just as we did with plastic bags and the smoking ban.

Without getting too embroiled in the merits, or not, of the scheme itself, the conversations led to the possibility of re-using returnable glass bottles.

Certainly, cans can never be re-used but bottles were re-used quite commonly in the recent past. The only UK brewer still to use returnable bottles is Harvey's of Lewes who persist in using their bottles at least five times.

Bottle washing machines are expensive to buy and need extensive maintenance as they have many moving parts held in harsh conditions. These machines use hot detergents to effectively remove the labels and clean and sterilise the bottles. The bottle washing machine uses a great deal of energy and water. The labels come off as a messy pulp and must be disposed of. If any of you have tried to remove pressure sensitive labels you know they are a nightmare as they stick to the bottles fast. This means if you begin to reuse bottles you will have to change your labeller to the much more expensive and complicated wet glue type just to remove the labels!

Returnable bottles suffer misuse by the public just like our casks. Crisp packets are a common ingress to a returned bottle never mind some more unmentionable objects. These must be spotted either by humans or machine before they enter the filling system. Again, an expense and something which may well indeed go wrong resulting in a complaint from a customer.

The bottles must be robust to cope with repeated fillings and are prone to wear and tear from numerous knocks it encounters through the distribution system. So, the light weight, cheaper bottle option is not there. The knocks will result in higher bottle bursts rate on the filler and a reduction in bottle line efficiencies with a greater risk of the scary scenario of glass in product.

Empty returnable bottles need to be stored in returnable crates and a good stock held for times of maximum sales, such as Christmas. This will eat into valuable space and increase inventory costs.

You will not be able to fill to order, sell the bottles and forget about them. A whole new distribution system will have to be set up to get your bottles back and sorting out those bottles to get the ones you use will again cost time and so money. All of these add cost and complexity to the operation.

One other aspect will be microbiological control. Most detergents, particularly caustic, will remove routine soil and sanitisers, particularly peracetic acid, will kill remaining microbes. This works very well for new bottles which all have the same origin and condition. Not so for bottles, as mentioned earlier, with variable contents, possibly with materials of food spoilage or personally contaminated items. The concentration of cleaners and sanitisers needs to be high enough to cover these even if most bottles just have beer residues. Higher soil also means chemicals are used up more rapidly and, without regular monitoring, may fall below effective concentrations.

The deposit scheme will undoubtedly be introduced as it is imperative that we, as a society, encourage people to have an incentive to reduce waste. The point I am trying to make is forget about re-using glass bottles as it is better for the environment to have an effective system to re-cycle containers. It will be better for the consumer to get a consistent higher quality, safer product and in the end make life for the brewer a great deal easier.

The milk round

What of dairies, though? Plenty of dairies use returnable bottles and, because of the constraints of recent lockdowns increasing delivery services, have gained trade.

For a start milk has a harder bottle clean than beer having a high protein content and a more stringent hygiene standard being more likely to harbour pathogens. However, many milk bottles are returned soon after use through doorstep collections so limiting microbial growth. Nevertheless, milk bottles still go through a 1.5% caustic

wash, a double rinsing and a peracetic soak - similar to that needed for beer bottles. Aside from the wet label issues a further difficulty is temporary storage of returns to ensure that bottles are warm enough to avoid shattering when plunged into hot caustic. Cardboard won't last long for regular reuse so investment in crates would be needed, most probably plastic.

Another major difference with beer bottles is how to achieve brand distinction and allow wide distribution? Dairies do have branded milk - typically full cream, skimmed and semi-skimmed but these can be distinguished by the colour of the foil cap which can also detail nutritional data.

Considering the labelling and separation problem of different bottle sizes and brewery identity it looks a tall order. There may be possibilities if your distribution is mostly to a tied estate or if a collection system is enacted from independent retailers. And this is without the capital costs involved. of a bottle washing system or the equally undesirable labour cost of menial bottle sorting.

On a broader scale, if bottles are to be re-used a more structural solution to collection is needed possibly based on local collaborative systems to cover capital costs. Ideally these should integrate collection and distribution to national systems such as supermarkets as on the continent. Or perhaps major pub chains could participate - another community role for Wetherspoons perhaps??

