

## Food for thought

**Recycling the daily newspaper has, happily, become second nature for most people, as putting rinsed milk bottles out for the milkman was a regular evening task of yesteryear. Since it is expected**

This article is part of the Verdigris series of stories about understanding the environmental impact of print. The Verdigris project is supported by Agfa Graphics, Canon Europe, Digital Dots, drupa, HP, Ricoh, Splash PR, Unity Publishing, EFI, Pragati Offset and Xeikon.

**that newsprint will be disposed of, it is produced from low-grade paper, with bleaching rarely used as in graphic arts and publishing grades. Therefore, recycled newspaper stock is in many ways ideal for producing everyday food packaging, such as breakfast cereal boxes, which are also made to be thrown away after use. And, of course, a grey-coloured finish from remaining ink in the material is hardly an issue when on the inside of a box.**

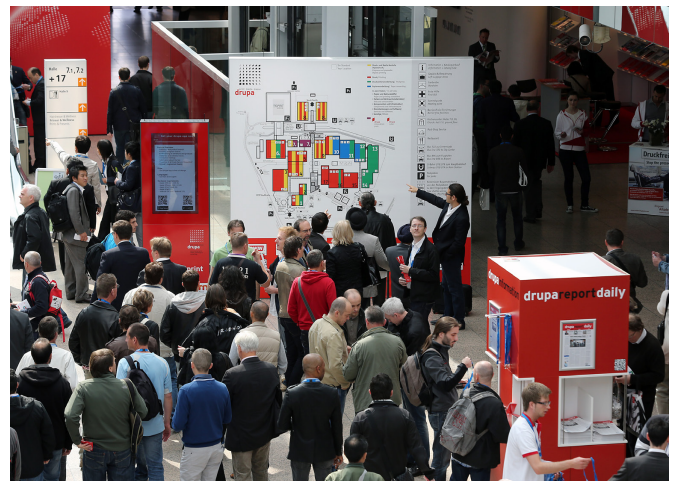
Given the sheer amount of packaging that a modern society gets through, it is important to be as ecologically sound as possible and the use of newsprint as a starting point helps with this. However, the everyday lifecycle of newsprint to recycling plant to packaging printer to supermarket shelf was stopped abruptly and brought to the attention of British shoppers in 2011, when Jordans Ryvita, part of the Associated British Foods group, ceased use of recycled stock for its breakfast cereals due to health concerns.

Jordans Ryvita, which made its name in the UK for its environmental sensitivity and actions to protect wildlife, reacted to a study carried out by the Food Safety Laboratory of the Canton Zurich, Switzerland which found that mineral oils were leaching out of the newsprint ink still contained within the recycled board of cereal cartons and into the food contained within.

According to research leader Dr Koni Grob, around 89 food products from a sample of 119 bought from

a German supermarket exceeded the UN and World Health Organisation agreed safe limit for mineral oil saturated hydrocarbons (MOSH) - 'most' by over ten times. The issue was compounded by expectations of MOSH levels rising to an average of 50 times more than the limit 'and many will exceed it several hundred times' long term – the longer the food was kept in the packaging, the more dangerous it was expected to become. Of the 30 or so samples that didn't exhibit MOSH contaminants, "nearly all" were "because of an inner barrier" said Dr Grob.

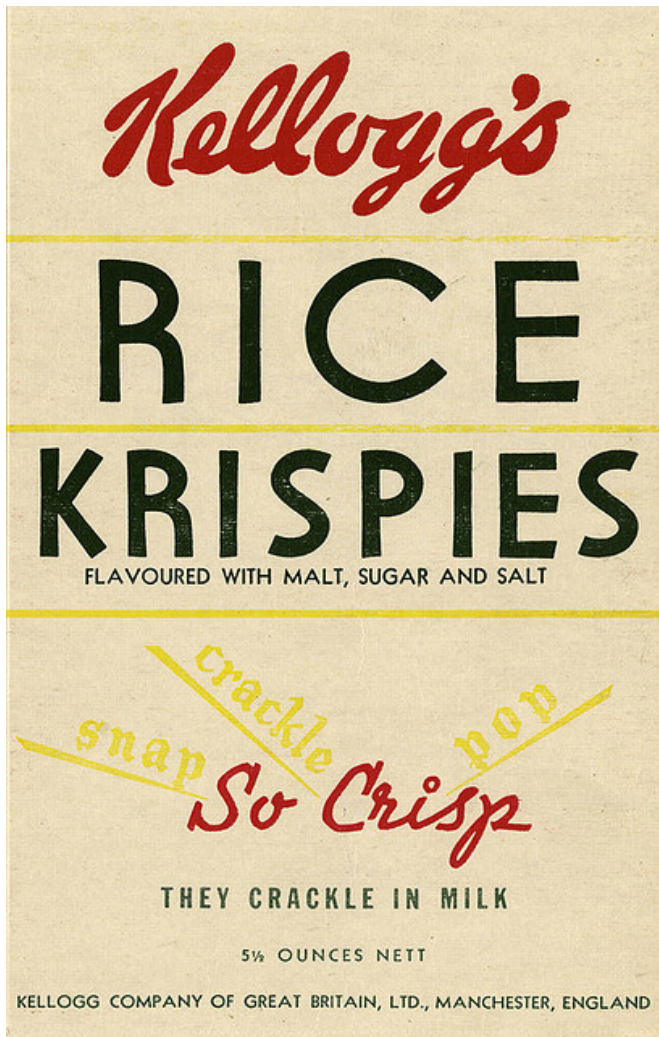
Dr Grob explained that the results of some animal studies on mineral oil contaminants in food had uncovered cancer and chronic inflammation of a number of internal organs, caused by oil mixtures amassing in



*drupa 2012 featured innovations in the recycling process.*

the body over time. Owing to their large surface area, breakfast cereals are especially susceptible to absorption of the gaseous hydrocarbon molecules that make up the mineral oils.

Now, there's no suggestion that any products from Jordans Ryvita were included in the Swiss test. But the findings were enough to cause the company to rethink its own packaging, and several other food providers followed suit. Global cereal brand Kellogg's also announced plans to reduce the amount of mineral oil in its own recycled cardboard packaging. "While experts tell us there's no immediate health concern, we are looking at our packaging," Kellogg's stated. "We are



*Kellogg's has changed its cereal boxes many times since this Rice Krispies carton from 1938 – including to packaging with a lower mineral oil content in 2011.*

working with our suppliers on new packaging which allows us to meet our environmental commitments but will also contain significantly lower levels of mineral oil. We are also looking at alternative inner liners for our packets.”

Weetabix took a similar tack, specifying newspaper pulp as the problem in a statement to the BBC in the UK: “Weetabix is actively engaged with its packaging suppliers to consider alternative recycled packaging that doesn’t contain recycled newspapers,” it said.

The British media homed in on words like ‘toxic’ and ‘cancerous’, saving the messages of calm from the UK’s food industry representatives – and indeed Dr Grob himself, who stated that consumers would have to ingest contaminated foods over a long period of time to be at

risk – to the end of news reports or giving them little attention. Indeed, it was newsworthy in itself that such major household names as Weetabix and Kellogg’s, and the famously environmentally conscious Jordans Ryvita, were changing their packaging in the face of such advice.

The Food Standards Agency (FSA), the governing authority on food safety in the UK, followed up the Swiss research on contaminated foods with its own studies on recycled packaging and ink ingredients found in it. Its tests detected one or more of the ink components under scrutiny in 84 of its 350 samples of packaging, including amounts of the photoinitiator benzophenone in 37, or 11 percent, of the samples. In a batch of 51 samples, all were found to contain MOSH.

The FSA concluded that there was no cause for public alarm, stating that a risk assessment carried out on the survey’s findings did not identify any specific food safety concerns. “The FSA’s advice is that there is no need for consumers to change their eating habits with respect to food that has been packaged in new or recycled carton-board,” was the message. UK food industry representative group the Food and Drink Federation released a similar statement: “Swiss food safety authorities have concluded that consumers who eat a balanced and varied diet have no need to worry.”

The International Association of the Deinking Industry (INGEDE) has highlighted that deinking newspapers as part of the recycling process can help to reduce mineral oils and thus the health risks associated with them – but emphasises that there are nominal concerns to begin with.

“Clearly, that stuff should not be in our food. But there are many other chemicals that also should not be somewhere and that should be taken care of when you start hunting migrated mineral oils,” comments Axel Fischer, chemist and head of public relations at INGEDE. “Not to [mention] the proven health concerns associated with the fats and oils you deliberately ingest. Anyway, deinking is a way to get some of them out of the system.” There is concern however, that the printing industry will still be perceived publicly to have an environmental

record as muddy-grey as the recycled paper it uses. Much has been done by the sector to improve its practices and its reputation, but a headline-grabber like well-known companies dropping recycled stock could have a negative effect – even if it is followed up by clear messages to its safety from authorised sources. Many food businesses have continued to use recycled material in their packaging but bad news travels further and for longer.

In addition, questions may also be asked about why the cereal brands, packaging producers and printers did not act on the problem earlier, particularly when both Weetabix and Kellogg's announced they would switch



*According to McDonald's, the cardboard packaging used for its foods is comprised of 72 per cent recycled paper.*

to board with lower or zero mineral oil contaminants, possibly suggesting data was available to them to compare safety in this regard. It could be that more printers are now using mineral oil-free inks and therefore switching to these inks was an overdue move.

Fischer's point that deinking paper might reduce the risks of mineral oil contamination even further may be one for the printing sector to consider as part of the wider campaign to raise consciousness of both environmental and safety issues – subjects that should go hand in hand.

During the inaugural EcoPrint show in Berlin in September 2012, print technology developer Ricoh surveyed visitors' opinions on sustainability and the EU Ecolabel, which aims to help consumers

identify products and services with an overall lower environmental impact. This uncovered “an obvious gap in knowledge and understanding” of standards concerning the label's use, according to Gareth Parker, value proposition manager for Production Print at Ricoh UK. The research surveyed respondents from 25 European and Middle Eastern countries, 90 per cent of whom were print service providers.

“PEFC and FSC-sourced paper and food packaging safety certification came out as one of the most important factors for respondents,” explains Parker, but this is in contrast to deinking, also covered in the survey. “Deinking was not highly rated as an area of concern, with four percent of respondents seeing it as critical to sustainability, 28 percent rating it as important, 22 percent not important and 48 percent did not understand its relevance.”

Parker sums up the conclusion of these discrepancies: “Sustainable printing is very much a growing issue and our belief is that a great deal of education is needed to raise the profile of sustainable print. Sustainability still needs clarification in printers' minds.”

It is, therefore, not only a case of promoting print as a sustainable and safe industry to consumers, but within the sector itself. With everyone – from equipment developers to print service providers – on the same page regarding the use and outcome of recycling technologies, end users and the public will be reassured that the everyday products they use are not harmful. Furthermore, with wider knowledge, the print industry will be prepared to answer the public's questions about the safety and environmental impact of their products, before they arise.

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