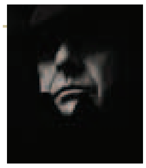

Bioplastics and waste

Bioplastics have a long way to go before they occupy a mainstream position in Australia's packaging industry even though there is a lot of interest in their progress, writes this month's **Insider**.

The term 'bioplastics' has received a lot of press mileage lately. At AUSPACK in June there was a special Bioplastics Pavilion and the Australian Institute of Packaging devoted a large amount of program time to bioplastics in its Packaging MEGA Trends Forum.

But what does 'bioplastics' really mean? The generally accepted view is that the particular plastics in question are not derived from a petrochemical source but, instead, are made from a 'bio' source. The view extends to the expectation that these bioplastics will biodegrade in some way and disappear whereas those 'terrible' plastics derived from petrochemicals will stay around for centuries littering the planet. So, if we make, for instance, all plastic bags from bioplastics the country's litter problem will disappear overnight. The reality is somewhat different.

We're now seeing a considerable number of plastic magazine mailer bags and shopping carry bags which carry a 'degradable' claim. Yes – they will cease to function as a bag in which to carry something as they break down under the influence of light and heat but that doesn't happen for quite some time after their first use. So the litter problem is not solved. In fact, the 'degradable' claims may just tempt people to litter more.

There are bioplastics on offer which are simply oil-derived polyolefins highly filled with inorganic mineral fillers. Additives initiate degradation and one of these bioplastics even carries the claim "degrades in the sun" in marketing material from its manufacturer. Does that mean we should throw it out in the sun? Are these really bioplastics? In the view of this Insider – *no* on both counts.

There's a lot of greenwash around.

One bioplastic is made predominantly from starch, with a few other ingredients added to make it perform better. This material will dissolve in water and press releases frequently show it doing so. If this material were to become mainstream what would dissolving it in waste water do to the BOD (biological oxygen demand) of our water effluent?

True bioplastics should be wholly derived from bio-sources. If made into packaging they should perform their task of protecting the goods and then they should be disposed of responsibly. In some cases this means they can be composted, in others they could be incinerated to release energy, but in many cases they should be recycled. Remember that these are valuable materials which, if possible, should be used again and again. Just like plastics derived from oil.

In *PKN*'s April 2009 issue the *Insider* revealed that nearly 50 per cent of the plastics waste collected in Australia was being shipped overseas but that now those 'export opportunities' were drying up. Around the same time a Visy Recycling spokesman said the company's backlog of unrecycled material was up to three times greater than before the commodity crash.

"Across the industry there is still quite a lot of recyclable material going to landfill," he said. April's *Insider* asked whether it isn't about time Australia's waste collection industry developed applications in this country for the plastics they collect. The same question should be posed for bioplastics. At present waste collectors are opposing the introduction of bioplastics claiming they will contaminate the sorted recyclate streams. Wouldn't a better approach be to embrace the trend, install means for separating bioplastics and develop applications for the sorted materials? A major hurdle to bioplastics becoming mainstream is the recycling issue. Some foresight from the recycling industry would greatly assist the growth of bioplastics uses and lessen our dependence on materials derived from petrochemicals.