

CHEMICALS and the GREENKEEPER

Certain chemicals are now OFF the shopping list, leaving greenkeepers weighing up the alternatives. Greenkeeper International asked experts Graham Paul, Geoffrey Ellis and David Stansfield to take a look at the options, the fungicides and the pesticides which keep YOU in control

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The passing of 1992 saw the withdrawal of approval for the use of the wormkiller chlordane. Later this year a similar fate will befall some of the triazine herbicides – namely atrazine and simazine. Is this 'weeding out' of chemicals going to become a trend for the years to come? GRAHAM PAUL looks at the future for the chemicals we have come to take for granted and suggests measures we might take to preserve their usefulness.

The loss of atrazine and simazine will mean that almost one hundred products will no longer be available to the greenkeeper. This will be quite a devastating blow for users and suppliers alike, for the triazine herbicides provide useful long-term control of weeds and grasses in non-crop areas. They persist in the soil, preventing seeds from germinating, and it is this persistent behaviour which has resulted in the detection of minute amounts of triazines in ground water. One could argue that the popularity of this large group of products has contributed to their demise. Alternative methods of controlling weeds in non-cropped areas are not easy to find. There are chemical alternatives – such as diuron and imazap – which are available, but the process of developing and registering new products based on them is very costly and can involve long delays: three or four years to develop a formulation and carry out laboratory studies and field trials, plus up to two years waiting for the necessary approval from the Ministry of Agriculture.

The wormkiller chlordane has been off the shopping list for some time now, although the approval for its use remained until December 31, 1992 to enable stocks to be used up. In a similar way to the triazine herbicides, the persistence of chlordane in the soil made it an excellent product for achieving long term control. Now that we have to use less persistent products we might need as many as ten applications to do the same job – a fact that will be welcomed by the manufacturers and, I imagine, by the worms!

When mercury based fungicides were withdrawn in 1981 their place was filled by alternative, less persistent fungicides such as iprodione, chlorothalonil, quintozene and the systemic fungicides; thiophanate methyl, carbendazim and thiabendazole. These chemicals were available as substitutes because they had been developed for uses in the much larger agricultural market. However, that happened in the 1980s. Registering new products was easier then and there were more new active ingredients being discovered and developed for uses in agriculture.

Today there is no endless supply of alternatives to replace

those being withdrawn and we have to take great care in the use of the remaining armoury of pesticides, or they too maybe withdrawn. It is not just the recession that has reduced the rate of registration of new products, but more durable causes such as the effect on the farmer's purse of policies to reduce surplus food production. Farmers have been forced to spend less on chemical sprays and so the manufacturers are looking harder at what money they can invest in the search for new active ingredients. Currently it costs about £30 million to bring a totally new active ingredient to the market-place. A large proportion of this is the cost of providing data on the toxicology and environmental impact to support the approval of products containing it.

Clearly, if we wish to continue to benefit from using chemicals to control weeds, pests and diseases, then we must learn to safeguard those we already have. This might be achieved by ensuring that all pesticides are only used when necessary, with the utmost of forethought and care to prevent contamination of ground water supplies. We should take particular care in using the few residual herbicides new to this market, such as those based on diuron, lest these too find their way into ground water and are banned – like the simazine and atrazine products.

Users should avoid under-dosing as well as over-dosing because the former can result in the need to re-apply a product which fails to perform, thereby using in total nearly twice the correct dose. Consideration must also be given to the possibility of pesticides losing effectiveness through resistance developed by the target species. Although this has not been common in the past, cases have occurred in most areas of pesticide use; such as warfarin resistance developed by rodents and fungicide resistance in grey mould and powdery mildew.

In many cases such resistance can be attributed to popularity and sheer over-use of the product. Where there are several alternative products to choose from, as with turf pesticides, sensible rotation will go a long way to help preserve our armoury.

We are all in favour of cleaning up our environment to improve the quality of life on earth, but pesticides can provide a useful benefit to our society without posing a threat to its future. The continued availability of these valuable tools will only be assured by sensible and responsible use.

■ The author, Graham Paul, has over 20 years experience in the chemical industry, having been closely involved in the development of the Rhône-Poulenc range of environmental products for much of that time. Graham is now territory sales manager for Sta-Brite Supplies Limited.



by GRAHAM PAUL