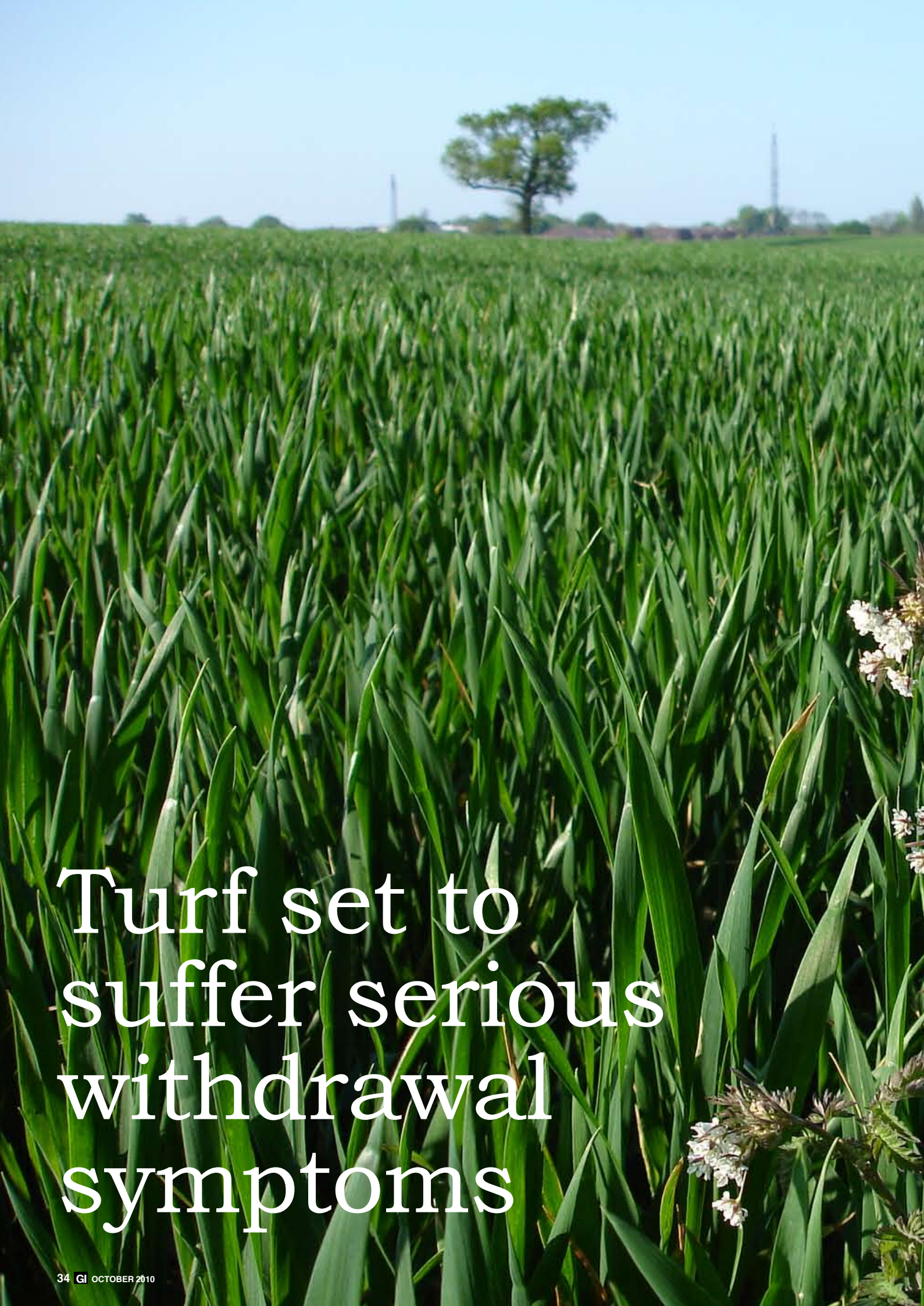

Turf set to suffer serious withdrawal symptoms

Dr Terry Mabbett, shares with us once more, his technical expertise, and predicts some serious suffering for turf...

Herbicides used in small quantities on turf could be dragged down by residues from much greater use of the same actives in agriculture

Without chemical insecticide there is no quick, clean and easy way of dealing with a sudden burst of chafer grubs and the collateral damage caused by badgers, birds and foxes looking for a feed.

"Perhaps the most 'dangerous' aspect of this directive for future use of chemical pesticides, is increasing calls for tighter restrictions on pesticide use"
Dr Terry Mabbett

Chemical pesticides registered for use on managed turf are disappearing at an alarming rate. The same is happening in other sectors but professional turf is most between a 'rock and hard place'. On one side is EU politicians and bureaucrats looking at what they would claim is the bigger picture. On the other is the greenkeeper concerned with more 'bread and butter' issues like maintaining his/her greens, tees and fairways in the pristine condition which the club membership expects and is accustomed. When things go wrong such as a sudden burst of chafer grubs or an unwelcome carpet of Fusarium patch, then the remedy needs to be applied promptly and act fast which only chemical pesticides can achieve.

Legislative weapons currently used against chemical pesticides by the EU essentially come in four directives, highly complex when dissected but simply as follows:

- Revision 91/414 Directive
- Sustainable Use Directive
- Machinery Directive
- Water Framework Directive

Revision 91/414 Directive: Brussels' onslaught on the use of chemical pesticides across the 27 member-country EU is a multi-pronged attack with some chemicals targeted and shot down directly by EU legislation on toxicity and environmental safety grounds. Other long established pesticide products which should have years of safe and effective use in front of them are essentially being withdrawn by default, due to pressures piled on manufacturers to provide more and more technical and environmental data to ensure the active ingredient's continued registration and use. There comes a point for the manufacturer when a product's projected financial reward does not square up with the costs involved, and unfortunately this position is usually reached more quickly and easily in a tiny market sector like professional turf.

The Sustainable Use Directive is all about the way pesticides are used. Perhaps the most 'dangerous' aspect of this directive for future use of chemical pesticides in turf and amenity is increasing calls for

Without herbicides there is only one way to deal with this plantain, established in a tee – get on your hands and knees and dig it out!

The EU Machinery Directive targets pesticides via their application machinery

tighter restrictions on pesticide use in public places which is what turf and amenity situations inherently are.

The Machinery Directive deals specifically with the application equipment used to deliver pesticides. It requires every new turf and amenity sprayer to achieve certification to a required level of environmental protection before being released onto the market. This is clearly not a direct hit on pesticides but the potential effect could be the same. Remove the most appropriate application technique and you essentially remove the pesticide.

The Water Framework Directive say inside observers is the one with the largest and widest potential impact on current pesticide use. In many cases the active ingredients under scrutiny in water supplies will originate from agricultural and hard surface applications in the industrial and amenity sectors. An active ingredient could be withdrawn from use in turf, although the offending residues in water were largely due to its greater use in agriculture, and direct run-off of the chemical into ground water supplies from application to hard surfaces.

Pesticide use in agriculture dwarfs that in turf and amenity while applications of pesticides to hard surfaces (pavements, roads, railways, car parks etc.) lack the soil-soaking and soil-holding buffering capacity afforded to those chemicals applied to sports turf and amenity grass. Both factors stand to impact heavily, albeit indirectly, on the future security and availability of chemical pesticides for use on turf, where the same active ingredient is used in agriculture or hard surface applications.

What's more it will be harder to replace chemicals lost from professional turf with its unique specific and stricter chemical use and application requirement and higher demands as a natural grass playing surface. Golf courses with their inherently high proportion of professional turf would suffer more than most.

There are many active ingredients widely used in agriculture that don't come anywhere near professional turf such as IPU previously used as a cereal herbicide, now banned but still causing problems. Unacceptably high residues still appearing in water supplies suggest some farmers held onto stocks and may have still been using them. Of course this has nothing to with either turf or amenity because IPU was never registered for use in these sectors. In the same way residues of aminopyralid (hormone-based herbicide used against deep rooted weeds in pasture) in farmyard manure have no relation to turf weed control.

However, EU eyes are also focussed on water pollution by other herbicide actives like clopyralid and mecoprop, both widely and intensively used in farming but

Industry watchers believe the Water Framework Directive for environmental protection will have the biggest negative impact on future use of chemical pesticides

Well-rounded and experienced greenkeepers can keep the lid on turf disease with good management practice

also in turf. Volumes used in turf compared with agricultural grassland are miniscule but if a problem arises any ban is likely to be blanket. These actives would be hard to replace with alternatives for turf but not so difficult in agriculture.

New turf pesticide products are appearing all the time which could cause greenkeepers to believe there is not too much to worry about. What they probably don't realise, and there's no reason they should, is that all these 'novel' actives appearing in new dedicated turf products are not as 'new' as they seem.

When a hitherto undiscovered active ingredient first shows up as promising on the manufacturer's laboratory screen first focus is on those sectors where biggest returns can be made most quickly. This means cereal crops and other large-scale globally-grown field crops like potatoes, oilseed crops and sugar beet followed by grapevines and high value horticultural crops. Turf and amenity comes way down the list. For instance, imadocloprid introduced several years ago as the undisputed saviour of UK turf from chafer grubs has its roots in the late 1980's. Only last week I was reading a old copy of African Farming giving the insecticide a rave write up for controlling insect pests on rice – that was in 1992.

The UK and indeed the EU is only part of the worldwide market for chemical pesticides and the turf and amenity sector is even smaller than that. Its costs money to bring an active ingredient (even an established one) to full registered use in turf, and if chemical manufacturers think a planned new product may fall foul of EU legislation in just a few years then the incentive to proceed and to pay for the privilege may be lost.

Should the worst happen to the chemical pesticide arsenal then lack of selective weed control is that likely to pose the biggest single problem for professional turf. Turf disease can be avoided or at least managed by good cultural control and more developments in turf grass varieties specifically resistant to diseases like Fusarium and anthracnose. UK turf has relatively few insect pest problems and there is biological control based on entomopathogenic nematodes for use against both chafer grubs and leatherjackets, although it is clearly less versatile and fast-acting as chemical insecticide.

Much is made about likely effects of global warming on the sustainability of UK turf but relatively little is said about its potential effect on turf weeds. As a traditionally cool wet country we tend not think of our native (and introduced) weeds as drought resistant plants, but many turf weeds are. You only have to look around at the moment to see how well white clover, bird's foot trefoil, yellow suckling clover, yarrow and even self-heal are doing in the current South of England drought and therefore how predicted effects of global warming could make the weed situation for UK turf a whole lot worse.

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