

## Effects of Dow Shield and Thistlex on Broad-leaved Flora Extracts from Nibblers online discussion group

Does anyone have any experience of the effect of Dow Shield and Thistlex on broad leaved flora?

We have a major thistle problem on a SSSI and having obtained advice from our ESA agronomist and John Bacon, we either have to boom spray with either of these two Clopyralid herbicides or use a wick applicator, which is less effective owing to reduced translocation once there is a height differential between the thistles and grass. The fields concerned could not be regarded as of botanical importance but we do have a significant presence of various legumes - clover, trefoil, vetch and vetchling - which we are loathe to lose. Clopyralid is apparently potentially damaging to broad leaves but I cannot find any specific information regarding whether all species/families are susceptible. I have contacted Dow who say that they "have no information about the flower species you want to protect on your SSSI", although they can give chapter and verse on the "weeds" which it will control.

Any information would be appreciated.

Mike Sandison  
Essex Wildlife Trust

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Mike

I think that you are very wise to be cautious, I was looking to do the same on a NNR grassland in Cumbria some years ago. However, on reading the instructions I did not use the chemical. It suggested that you needed to do thistles twice to achieve a kill and that broad-leaved herbs, etc. would also be killed. I opted to do an aesthetic job and cut them just as they begin to flower.

One answer may be to graze the site quite hard to get the vegetation low and the thistles up and then apply glyphosate with a weed wiper or very carefully spot spray with the Dowshield chemical. The only other solution is to grub them up with a lazydog tool, but creeping thistles do seem to go rather deep in my experience.

Many years ago I read an interesting little booklet called insects on thistles. The gist of it was that thistle flowers are very attractive to several species of insects that eat the flowers and especially the seeds. Therefore if you have the right suite of insects the actual seed production is very low.

If the insects do not sort them out the Goldfinches probably will. There are various problems to letting nature do the job, the first being the perception of the plant amongst the farming community, secondly the insects required to do the job do not seem to exist in large enough numbers these days! However, Goldfinches seem to be doing very nicely at present.

Has anyone thought of harvesting thistle seeds for the bird feeding companies?

Frank Mawby

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Mike

I would say that Chlorpyralid will almost certainly kill the legumes you mention. I would also support Frank Mawby's suggestions of close grazing followed by weed wipe with glyphosate or careful spot spraying with Chlorpyralid. Beware of creating bare patches (e.g. by spot spraying with glyphosate) as this could well allow establishment of thistles from the seed bank - there will be a concentration in the vicinity of existing plants, despite their wind-dispersal properties.

However, I doubt if attracting seed-eating birds will do much to contain creeping thistle as it is not normally dependant upon seed production for regeneration and local spread (although you might reduce the spread further afield).

Francis

Dr F.W. Kirkham  
Senior Research Scientist (Ecology)  
ADAS Sustainable Land Management Group

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We did not have much creeping thistle on the field in Finglandrigg Wood NNR it was either marsh thistle or what I call Scotch Thistle and yes I do recall our Exmoors grubbing out the Scotch thistles.

They have a great ability to find food in roots and will really dig into Molinia (Purple Moor Grass tussocks in late winter. In fact so much so that we had to move them to avoid having the tussock structure being completely destroyed. I think they will find anything nutritious when grazing gets hard these ponies are great survivors.

Frank

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Dear Mike

English Nature's herbicide handbook says that Daisy family (Asteraceae) and pea family (Fabaceae) including clover and vetches are susceptible to clopyralid. The handbook can be downloaded free from <http://www.english-nature.org.uk/pubs/handbooks/upland.asp?id=7>

Nick Sibbett  
EN Suffolk team

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I can't help but reflect on the irony of an organic group focussing on this particular topic so just a couple of comments.

having used clopyralid sprays in the past I remember being struck by the fact that they worked quite well at the time and certainly did reduce the c thistle density v significantly without much detriment to anything else in a fairly diverse limestone grassland. But the impact was only short-lived and 5 years later there was no residual benefit; the thistle was back to its former level of abundance..

So my point is that spraying may only be a palliative if the original cause of the problem has not been dealt with. Which in the case of creeping thistle is most likely to be phosphate enrichment due to past application of manure/slurry/20:10:10 fertilizer. Soil tests can therefore be a good starting place if you want to find the underlying problem. Haycutting is therefore a good way of reducing infestations over the longer term because it not only removes excess P but it forces the thistles to compete with grass and other herbs.

On a trip to the Burren in 2003 we met up with an organic farmer who was dealing with this problem using trace elements. His argument was that creeping thistle could tolerate Manganese deficiencies much better than other spp and correcting the imbalance would restore a better equilibrium. He was able to show us areas where significant improvements had occurred following treatment with a soluble Mn salt. but I don't have further detail.

Finally there is an organic weed research group that is looking into control of creeping thistle - Lois can you provide us with the contacts for this?  
Bill Grayson,

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The HDRA site has information on the organic control of creeping thistle.  
[www.hdra.org.uk/organicweeds](http://www.hdra.org.uk/organicweeds)

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Mike,  
Just to clarify -

a). Spraying: I would not advocate 'spraying' either of these herbicides on a site where you have these legumes.

b). Weed-wiping: From my experience when carrying out field trials to develop the second generation of 'weed-wipers' I observed that 'Clopyralid' (in Dow Shield) and 'Glyphosate' (in Roundup Biactive) active ingredients gave the best control of Creeping thistles.

Clopyralid actually gave better control than Glyphosate when looking at the number of emerging stems in the year following treatment. This was thought to be due to Clopyralid translocating better through the plant to the rhizomes and killing next years dormant buds.

c). By reference to the UK Pesticide Guide 2004 (CABI) you will see that:

- Dow Shield contains 200g/l of the active ingredient Clopyralid.

- Thistlex contains 200 g/l of Clopyralid plus 200g/l of triclopyr. (Caution:

I sometimes suspected that the action of triclopyr in thistle mixes reduced the translocation effect of the clopyralid - looked a better control immediately after wiping but not so good the year after treatment).

- Grazon 90 contains only 60 g/l of Clopyralid, plus 240g/l of triclopyr.

d). Apart from the UK Pesticide Guide (which should be essential reference material for all using herbicides) and product labels, the English Nature/FACT Herbicide Handbook provides a summary of information which was available as at September 2003 - see pages 4/23 and 4/24. Then on pages 4/57 and 4/58 detailed information on the species controlled by Clopyralid. This information is set out under headings of susceptible, moderately susceptible, moderately resistant and resistant. This is copied in here for convenience:

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Susceptible:

Daisy family (Asteraceae): Autumn hawkbit, cat's-ears, cocklebur, corn marigold, hawk's-beards, cudweed, dandelion, goat's-beard, greater knapweed, groundsel, hawkweeds, knapweeds, mouse-ear-hawkweeds, ox-eye daisy, oxtongues, pineappleweed, ragworts, scented mayweed, scentless mayweed, smooth sow-thistle, sunflower, yellow star-thistle, thistles, yarrows.

Pea family (Fabaceae): Brooms, gorses, greenweeds, medicks, melilots, peas, vetches, white clover.

Other dicotyledons: Docks (seedlings), ribwort plantain, summer-cypress.

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Moderately susceptible:

Daisy family (Asteraceae): Canadian fleabane, colt's-foot, perennial sow-thistle, prickly lettuce.

Cabbage family (Brassicaceae): London-rocket, shepherd's purse.

Other dicotyledons: Amphibious bistort (young plants), black bindweed, black nightshade, chickweed, docks, Japanese-lantern, knotweeds, leafy-fruited nightshade, stork's-bills, thorn-apples, white clover.

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Moderately resistant:

Grasses: Cock's-foot, upright brome.

Dicotyledons: Black horehound, common dog-violet, common mallow, common toadflax, creeping cinquefoil, dog's mercury, early dog-violet, field bindweed, foxglove, lady's bedstraw, pale persicaria, redshank, primrose, wood avens.

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Resistant:

Pteridophytes: Horsetails.

Grasses: Annual meadow-grass, autumn millet, beetle-grass, Bermuda-grass, canary-grass, cockspur, drooping brome, finger-grasses, Italian rye-grass, Johnson-grass, rescue brome, ripgut brome, sandburs, stink-grass, volunteer cereals, wild oat, yard-grass, yellow bristle-grass.

Other monocotyledons: Galingales.

Cabbage family (Brassicaceae): Cabbage/rape, dittander, swine-cresses, wild radish.

Other dicotyledons: Amaranths, annual morning-glory, common fiddleneck, fat-hen, henbit dead-nettle, knotgrasses, mallows, morning glory, nettle-leaved goosefoot, pigweed, procumbent yellow-sorrel, ribwort plantain, velvetleaf.

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Always refer to the lable!

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e). Pulling - apart from using Lazy Dog Tools early in the season it is worth noting that creeping thistles 'pull' very well - they tend to part company some 10-15 cms below ground at a point where the rhizome turns horizontal. Pulling therefore removes the coppice bud producing part of the stem which is left behind if stems are flailed and which can give rise to numerous re-growths. It also deprives dormant buds on the horizontal rhizomes from nutirents, resulting in weaker growth next year.

Hope this helps.

John

John Bacon, Senior Land Manager, Land Management Unit, English Nature,

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Hi Mike -

Can you not just top it? In my experience, creeping thistle does not like mowing and gradually retreats. It does take a few goes, but it works pretty well in the end. Horses and (some) cattle will often eat the cut thistles too.

I've had best results on small infestations by hand-mowing with a scythe, which allows you to cut very near the ground without having to cut much else (with practice scything is not nearly as hard work as you might think -- just remember to slice not thrash...).

However, topping with a machine works well too, and I would always try this long before herbicide. Hard grazing beforehand does help to isolate the thistles for cutting, if you don't poach and so encourage their spread.

In my view spraying for thistles has caused more damage to (unploughed) ancient grassland than anything else. I've often found fields which have very poor vegetation generally, but which have islands of very diverse vegetation where the sprayer missed or the tractor could not reach. Ironically, these fields are often under long-term management which would have been ideal if the vegetation had still been there -- the damage may have been just one event, with effects apparently lasting for very many years, if not decades. (I'm appalled if the chemical companies do not even know what non-target species their products are hitting!).

I think a lazy-dog is really more for rosette weeds such as spear thistle and ragwort. The rhizomes of creeping thistle spread under the ground in a network (like those of bracken or nettles), so most of them are not directly under the shoots anyway.

I agree with Francis that control of seeding will not help control an infestation at all -- it just stops them spreading to a new site. This is a perennial plant which can grow indefinitely without seeding.

I think the best time for topping is when the thistles are well grown but are not yet flowering (I can't quite remember the traditional rhyme about cutting thistles too soon...). If you cut them as they first appear they will regrow. However, early cutting does give stock a chance to graze through the thistle patches, encouraging a tight grass sward and thus making life tough for the regrowing thistle shoots -- so early cutting can help if combined with a later cut.

Thistles (like docks, nettles and ragwort) are really a problem of poor management, particularly I think on species-poor vegetation, which seems much less robust when poached, flooded, droughted, overgrazed, undergrazed etc. Get the management right and I think the problem will go eventually -- but knock out your other broadleaves and you leave many niches available for weeds to recolonise into.

As an aside, are thistles really so much of a problem? I'd not tolerate great banks of seeding thistles, but I'd not worry too much about the odd clump if it was not spreading. Though I'd never encourage them -- there is rarely a shortage of weeds...

Richard

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Richard. cut in june you cut too soon; cut in july they are sure to die!

Graham

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Graham missed "...cut in May and you waste a day..." Perhaps with climate change we should not rely too heavily on these sound old sayings (which probably are only fully correct in the Julian calendar).

David Hodd  
Countryside Manager  
Purbeck Estate

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Ay, and if you believe that you will also believe that lots of berries predicts a hard winter!

Frank Mawby

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Hello Mike,

Re creeping thistle..We have found that on some sites that where there is pony grazing during winter especially, thistle colonisation gradually decreases. Ponies enjoy eating thistle rosettes in winter as an iron rich supplement. I have seen them 'mash' them up with a front foot and then consume the pulp. Also when the plant is semi-mature in spring they will pull them up, carefully turn them round so the prickles are pointing in a favourable direction and then gingerly chew them up! The plants must have some good nutritious properties, or be very tasty for the ponies to go to all that trouble to eat them. When the plants are fully grown they will only pick off some of the flowers, like sweeties, which helps if seed dispersal is to be limited.

Did you notice the Finglandrig ponies doing anything similar Frank? I like the seed collecting idea.

Margaret.

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