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Availability of summer bee forage in domestic garden lawns

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Not mowing lawns is promoted to allow suppressed wildflowers to grow and thus provide summer forage. We are examining this more closely by evaluating the effects of not mowing lawns in either May, June or July on flower species growing and insect visitors. In preliminary experiments on three areas of regularly mown amenity lawns, we found that they all contained a wide range of broadleaved plants to attract pollinators. When we compared mowing monthly with mowing more regularly, more insects visited with monthly mowing. We are now analysing the effects of not mowing in different months with a future aim to produce pollinator-friendly lawn management guidance for the spring and summer months.

Background

In recent years there has been growing interest in domestic and amenity lawns as a provider of food for bees and other pollinating insects, and recognition that by not mowing the grass regularly, many plants which would normally be supressed can provide a succession of flowers. This has been demonstrated in earlier studies at the University of Sussex.[1,2]

Most domestic gardens have some kind of lawn, but many currently provide very little for wildlife because they are mown too regularly for wild plants to flower. Although there have been a number of studies of lawns in various countries, there has been a lack of studies carried out under UK conditions.

Some people may set aside areas of lawn to be left deliberately as 'wildflower meadows', which may be cut perhaps once a year. Here, we are talking about simple changes in lawn management that any householder can make using their existing machinery, without sacrificing the amenity of the lawn, but which can encourage greater flowering of broadleaved plants to enhance its value to insect visitors.

In particular, the 'No Mow May' movement has been promoted recently by the charity 'Plantlife' and other organisations. This idea simply involves not mowing lawns for the calendar month of May, but we suspect that, although a good idea in principle, there is little scientific basis for the idea. For example, it might allow rampant grass growth which means that white clover, *Trifolium repens*, probably the most important lawn flower, may actually produce fewer flowers than if mown regularly.

Our aims

We are studying the effects of 'No Mow May' more closely by means of field experiments. Specifically, we will compare the 'No Mow May' treatment with other combinations of mowing regimes to determine their effects on flower production in broadleaved plant species and their effects, in turn, on the variety and quantity of insect visitors.

Preliminary studies

The BBKA provided funding for a study planned for 2020, which would have studied lawns in private gardens in three Sussex towns, but COVID-19 prevented this. Instead, during 2021, preliminary studies were carried out on three areas of amenity lawn on the University of Sussex campus at Falmer. It was found

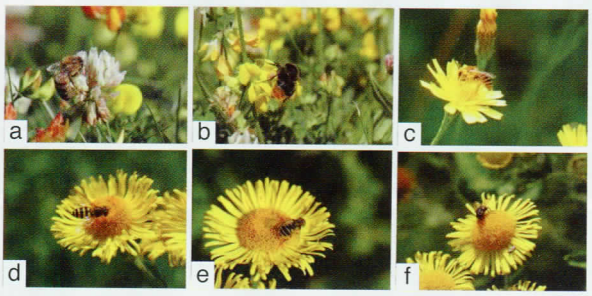

Figure 1. Insects on lawn flowers: a. Honey bee (Apis mellifera) on white clover (Trifolium repens); b. Red tailed bumblebee (Bombus lapidarius) on birdsfoot trefoil (Lotus corniculatus); c. Ivy bee (Colletes hederae) on nipplewort (Lapsana communis); d. Hover fly (Syrphus ribesii) on rough hawksbeard (Crepis biennis); e. Hover fly (Eristalis nemorum) on rough hawksbeard; f. Fly (Mesembrina meridiana) on rough hawksbeard. Photos: Norman Carreck.

that despite regular mowing for many years, they all contained a wide range of broadleaved species to attract pollinators (Figure 1). When we compared mowing monthly (the 'Treatment' group) with mowing more regularly (the 'Control' group) more insects visited under treatment conditions (Figure 2).

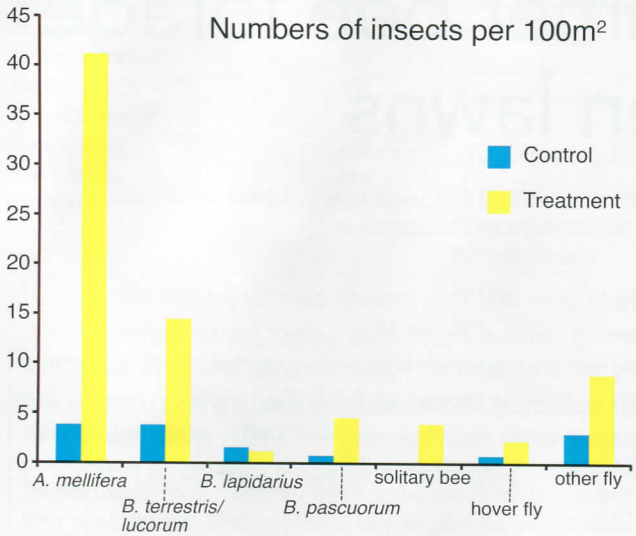

Figure 2. In preliminary experiments in 2020 and 2021. Alternate strips of an ordinary lawn were mown monthly, allowing plants including white clover, Trifolium repens, to flower i.e. 'Treatment', compared to other parts of the same lawn, which were mown more regularly, i.e. 'Control'.

Field experiments in 2022

In summer 2022, a replicated field experiment was carried out at two sites on the university campus (Figures 3 and 4). This consisted of combinations of mowing or not mowing in May, June or July. Regular observations took place to identify and quantify flowering plants, and to identify and record insect visitors and their flower choice on the plots. The lawns contain a wide range of wild flowering plants, all of which are native to Britain, with species such as dandelion, *Taraxacum officinalis*, dominating in the early period, daisy, *Bellis perennis,* and buttercup, *Ranunculus repens*, flowering over a long period, making way for plants such as white clover, self-heal, *Prunella vulgaris*, and various yellow composite plants such as hawkweed, *Hieracium agg.*, later in the season. A wide range of insect visitors were observed on these flowers, including honey bees, bumblebees, solitary bees, hover flies, and other flies.

Figure 3. Field experiment being carried out on the university campus in 2022 with combinations of mowing treatments. Photo: Norman Carreck.

Figure 4. The lawns project team 2022. L to R: Karin Alton, Phoebe Ney, Francis Ratnieks, Rachel Wilkinson and Norman Carreck. Photo: Stuart Robinson.

Preliminary results suggest that although not mowing in May did indeed result in large numbers of daisy flowers, these attracted relatively few insects, while the lush grass growth during that month discouraged flowering of species such as clover later in the season. Plots not mown in May but cut subsequently appeared brown and took a long time to recover. On the other hand, plots cut up to the end of May and not thereafter produced much higher densities of clover flowers. The exceptionally dry summer of 2022 unfortunately meant that there were few flowers or insects on our experiments from early July onwards, so similar studies are planned for the future. Further analysis of the results is continuing, with the aim of ultimately producing improved recommendations for more pollinator-friendly lawn management of domestic gardens. ■

References

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