

Hay Fever – not to be sneezed at...

By Tim Yeomans PhD

Hay fever is an allergy to pollen or spores and it causes the inside of your nose to become inflamed. It may also affect the sinuses, throat and eyes. For those with hay fever, the condition can range from mildly irritating to debilitating in its effects. Hay fever normally occurs in spring and summer when there is more pollen in the air. However allergy season has been increasing of late and this further exacerbates the problems that hay fever sufferers face.

The most common plants to which people may be allergic to include trees such as pine and birch, grasses such as ryegrass and timothy grass, and weeds such as ragweed and nettles. Nonetheless, increasing numbers of people have been blaming rapeseed for their allergic responses.

The cultivation of rape seed has increased over the past few years, from 36 million tonnes at the end of 2004 to 46 million tonnes at the end of 2005. You can see its characteristic bright yellow colouring over fields in all parts of the world. It is used as an animal feed but also is being increasingly grown in response to demand for biodiesel (this has also been encouraged through EU subsidies).

Many hay fever sufferers blame their symptoms on exposure to rape seed pollen, but is this entirely accurate?

Most hay fever allergies are to pollens that rely on the wind to disseminate them, and are thus small and light. Rape seed pollen is sticky and heavy and relies on insects for dissemination, therefore its span for wind borne spread is quite limited (likely to be less than 50 metres). It is possible that by being in close proximity to a field of rapeseed, contact with its pollen may occur.

However by moving away from the area, this route of exposure should be nullified. Furthermore, real allergy to rapeseed is quite low, studies by the National Pollen and Aerobiology Research Unit in Worcester showed only 1 in 25 people tested for rapeseed allergy actually reacted to the pollen.

A source of irritation that many people would not be aware of is that of the fumes or volatile organic compounds (VOCs) that rapeseed crops apparently emit. One study at the Scottish Crop Research Institute in Dundee in the mid-Nineties showed that rapeseed emits 22 different VOCs including terpenes, aldehydes and organic disulfides. VOCs can often irritate the mucous membranes. However, whether these VOCs can travel a further distance than the pollen and still remain a potent threat is not clear.

What is interesting is that although people in the UK appear to suffer in some part to exposure to rape seed, the same kind of responses are not seen in other rapeseed-growing countries such as

Germany, France and Denmark. This may be a weather related phenomenon as pollen will remain airborne for longer in areas of high humidity.

Whether it is the pollen or VOCs (or a combination of both) that may cause irritation, the effects can be severe. It is apparent from conflicting information on the source of the irritative potential of rapeseed, that further research is required in this area to clarify the matter (or indeed to show if rapeseed is the culprit at all). As farmers devote more land to the growth of this crop, this need becomes ever more pressing.

Profile

Tim graduated from the Institute of Technology Carlow with a Degree in Industrial Biology, and completed his Ph.D. in Microbiology in UCC which focused on pathogenic fungi. Tim was subsequently employed as a post-doctoral scientist in the Microbiology Research Unit in the Dublin Dental School and Hospital investigating pathogenic yeast species. Tim then joined **airmid healthgroup Ltd**.



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