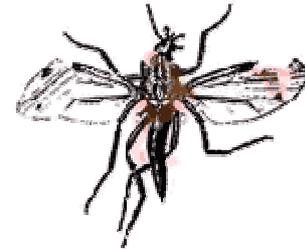


This is the name given to the condition that many horses and ponies unfortunately succumb to during the summer caused by an allergy to the common midge found in the British Isles. This midge is known as *Culicoides* and the allergic response is caused by antigens (proteins) in its saliva, which is injected into the skin during the biting process. The allergic response that the affected horse has is known as a type 1 hypersensitivity reaction (also called an immediate hypersensitivity). The body identifies the *Culicoides* saliva as foreign due to cross links that form with antibodies in the skin (IgE). These specific antibodies are attached to a cell known as the mast cell. Once these antibodies have cross linked with the saliva antigens, the mast cell releases granules (containing histamine) which stimulate the body to release inflammatory products, and this inflammation is what causes the clinical signs.



### **Clinical Signs**

The midge has sharp biting mouthparts, so even in the horse that does not have an allergy to the saliva, the bite is painful and will cause swellings at the site of the bite. However in allergic horses, other classical signs develop secondary to the inflammation produced. These signs are initially an intense itch usually over the mane and tail but can be all over the body. Once the itch is scratched it starts up a vicious cycle which means that the more the itchy area is scratched the itchier it becomes!! Other signs then develop due to the continual scratching and irritation- hair loss/ breakage, scaling and/or crusting of the skin, increase in pigmentation of the skin and skin thickening. It's quite common to see a ridged appearance to the mane if the problem has been going on for a while.

### **Diagnosis**

This is usually based upon history, clinical signs and response to fly therapy in most cases. Further investigations can be carried out by allergy testing the horse (either blood tests or skin tests) or even carrying out skin biopsies.

### **Treatment**

The mainstay of treatment is basically preventing the midge from getting into contact with the horse to bite it. We know that the midge prefers to feed at dawn and dusk, in warm weather with little wind. They also tend to be much more common near trees and still water. Bearing this in mind the recommendations would be to graze horses at times when they are least likely to come into contact with

midges, so the horse should be stabled at dawn and dusk, and ideally when the horse is out grazing it should be away from areas of still water and trees. Obviously this is not always possible so we also have to look at other ways of preventing midge-horse contact. Applying fly sprays/wipes may help particularly if they contain a permethrin based product. There are commercial permethrin based pour on preparations which should be applied 1-3 times per week. Bath oil sprays tend to work quite well e.g. Avon Skin So Soft Bath Oil, diluted 50:50 with water, so as well as your horse being free of midges he/she will smell gorgeous too!! When the horse is stabled, screens can be used to prevent any midges entering into the stable and also fans can be installed in the stable to prevent midges getting in. If these measures don't work then specialised rugs (e.g. Boett rugs) can be used as a complete barrier. They are more expensive but do work well in most horses.

Systemic therapies can also be administered under veterinary guidance. Anti-histamines are commonly used in humans to combat allergic diseases. They block the action of histamines which are released in the inflammatory cascade, and also help stabilise the mast cells involved in the initial allergic response. However, they don't tend to be particularly effective in the horse at controlling the symptoms of allergic diseases, and can make horses slightly drowsy. Steroids will obviously reduce the inflammatory reaction and horses can be put on an initial dose to reduce the inflammation which is then reduced over a period of weeks, and are then maintained on a low dose. However steroids can have serious side effects in horses- inducing laminitis and therefore would only be started on a course after extensive consideration. Another method of trying to control the inflammatory cascade is to supplement the diet with omega 3 fatty acids. Basically these alter the inflammatory cascade and this therefore reduces the itchiness. This can be supplemented using evening primrose oil at 20g/ day, but this does tend to be quite costly.

Hyposensitisation is where the animal is injected with a low level of the antigen that it is allergic to. Over a period of time the animal should become tolerant to this antigen so that when it is encountered for real the body does not mount such a dramatic allergic response. Whilst it can be carried out in horses, there is little published data on its success, but it has had good responses in humans and dogs with similar allergic conditions.

There are also clinical trials being carried out nationwide by the National Sweet Itch Centre. This piece of research is trialling a type of vaccine which has been developed at the centre under the guidance of Professor J.L. Stanford. The trials seem to be going quite well and based on last years results the vaccine has been quite successful, and a larger trial is being carried out this year. This vaccine is injected into the skin on 3 separate occasions 2 weeks apart, and then the horse is fed a supplementary capsule at the beginning of each month over the summer period.

As you can see there are many treatments available for sweet itch in horses and unfortunately none of them have a 100% success rate. This means that the majority of the time we as vets have to decide on an optimal treatment plan for the horse based on the individual situation but also it can be trial and error before the best treatment is found.