Insect Bite Hypersensitivity in Horses
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Insect bite hypersensitivity (IBH) in horses has many common names, such as: sweet itch, summer itch, Queensland itch, and summer eczema. Each name implies the main symptom, pruritus or itchy skin in horses. Unfortunately IBH is a common dermatological ailment in horses, especially those living near rivers and swamps. While some studies suggest that bloodsucking insects, like mosquitos, are the cause of the allergic reaction, the main culprit is thought to be the *Culicoides* midge (Biting midge or No-See-Um gnat). The bite and saliva from the female *Culicoides* midge causes a Type-1 hypersensitivity which is an allergic reaction caused by exposure to a specific type of antigen. The allergic reaction causes inflammation in the affected areas causing itchy skin and hair loss which is commonly found along the chest, shoulders, mane, tail, and midline of the abdomen.

Although a number of treatment options exist, prevention and insect control is the best strategy. Research has shown that the inflammation response to one bite can last up to one hour and a swarm of gnats can deliver up to 3,000 bites within an hour. The recovery from that kind of exposure can take 3-6 weeks. Researchers are working on a vaccination to prevent horses from experiencing the allergic reaction caused by IBH; however until the vaccine becomes available commercially, combining the tips below will help manage and treat IBH.

- **Reduced exposure** - to the *Culicoides* midge requires understanding its habits
  - **Netting** - use around barn doors and window openings to create a physical barrier that cannot be penetrated; Specific ultra-fine netting with a pore size less than 0.9 mm² is available (on-line) for mosquitos and *Culicoides* midges
  - **Fans** - *Culicoides* midges are not effective fliers
  - **Reduce moisture** - *Culicoides* midges are most prevalent in hot, humid, grassy or wooded areas and they breed in standing water; Reducing the amount of standing water in the areas surrounding your pastures and barn will reduce the potential for IBH
  - **Stabling** - from dusk to dawn (1600-0700h) when the gnats are most active also will reduce your horse’s exposure
  - **Physical barriers** - fly masks, fly sheets and leg wraps are available to help reduce exposure
**Insecticide** - minimum of 2% permethrin; Higher concentrations are available for livestock use but care should be taken when using on the sensitive skin of a horse with IBH; For owners seeking a more natural insecticide, products derived from chrysanthemum products are the most successful

**Reduce itching** - multiple options are available to manage pruritus
  - **Topical creams** (corticosteroids) - like cortisone are not labeled specifically for use in horses but can be useful in alleviating some discomfort; Neem oil and sulphur products also are successful in reducing discomfort as well as conditioning dry skin
  - **Shampoos** – with colloidal oatmeal reduces pruritus and moisturizes dry skin also have been shown to provide some relief, but baths should only be given once a week to prevent stripping the coat of natural oils
  - **Systemic steroid treatment**- with corticosteroids will reduce the inflammation but cannot be considered a long term option; Long term use of corticosteroids can suppress the immune system which increases the chance for a secondary infection to occur or can cause increased laminitis risk
  - **Antihistamines** - will only block histamines which limit the success of treating the symptoms of type-1 hypersensitivity due to the variety of physiological responses involved
  - **Feed supplements** - The addition of Omega-3 and Omega-6 fatty acids (Flaxseed) to a horse’s diet has been shown to reduce inflammation; Researchers have found that horses with IBH who were fed crushed flaxseed (1 lb/1000 lb of BW per day) had a significant decrease in allergic skin response

**Control immune response** - with the use of allergy shots that have antibodies specific to *Culicoides* midges; These treatments desensitize the horse to the allergic reaction caused by insects, but typically have a low success rate (20-30%) and can be fairly expensive; Multiple antigens are combined into one vial of allergy shots which should last 3-4 weeks; Each vial costs approximately $175 and the expected treatment time is a minimum of 1 year; Researchers are currently investigating salivary proteins from the *Culicoides* species to create new antibodies which should be more effective

Treating and managing horses with insect bite hypersensitivity requires combining multiple therapies. Current treatments are unsuccessful when horses are over-exposed to insects and other environmental allergens. Thus, success is dictated by early prevention and the owner’s commitment to management practices that reduce exposure and treat symptoms. Research has shown that IBH is an inherited trait and therefore animals affected by the condition should not be selected for breeding purposes.
References:


