

## Culicoides (Insect Bite) Hypersensitivity - "Sweet Itch"

### What is Culicoides Hypersensitivity?

Culicoides are a small fly/gnat, also known as biting midges, "no-see-ums," or "punkies." They are most commonly seen in late spring/early summer and most active at dawn and dusk. They tend to bite horses along the mane, tail, saddle area, rump, and ventral midline (underside of the belly).

Horses with Culicoides Hypersensitivity (CH) are allergic to the saliva of the flies. This means that each time the horse is bitten, they get itchy all over. Ideally we could stop the horse from being bitten. All things that prevent bites will decrease itching, but it takes only ONE bite to cause intense pruritus. Horses will use anything they can find to scratch their itch which causes damage to the skin. Most horses with CH develop signs between 2 and 4 years of age, but it can happen at any time.

### Prevention of bites:

#### Fly Sprays/Repellents

- Unfortunately, regular fly sprays and fly blankets impregnated with fly repellent are not effective.
- **Picaridin:** Newly available in the US and effective at deterring the culicoides. This needs to be applied twice a day at dawn and dusk.
- **Ecovet** – Sometimes effective, however horses sometimes do not like the smell, and it has to be reapplied very regularly.
- **Vectra 3D**- approved for dogs- is a spot on insect repellent. This appears to be effective against the Culicoides. 2 extra large dog size. One over dorsum, one over ventrum every 30 days.
- **Citronella** may be effective. **Neem oil** is also a better repellent than traditional fly sprays

#### Blanketing

- Early research shows that flies are repelled by zebra print blankets, but this is not researched regarding Culicoides. Therefore wild print sheets with belly bands may be more effective than regular fly sheets.
- Snug bug rug is a nice blanket with sheath and udder covers.

#### Other

- Placing a **fan** where the horse can approach it can be helpful depending on the horse- some may learn to stand in front of fan when bugs are out. Fans can be set on a timer for dawn and dusk. Focus prevention efforts at dawn and dusk when the bugs are out. The Culicoides cannot fly through turbulence.
- Ultrafine mesh is necessary if you want to keep midges from crossing over a window/door opening but maintain ventilation
- Feed-through fly predators do not appear to decrease the Culicoides population, but bats and birds will.

### Treatment of Current Itching:

- Antihistamines are sometimes helpful. Please talk to us about trying different ones if the first one tried is not effective. There are several different options including cetirizine, hydroxyzine, doxepin and chlorpheniramine. Benadryl is not effective in horses, but may be effective in donkeys.
- Apoquel is a drug developed for hypersensitivity in Dogs. It is used off label in horses. We have not had any ill effects reported in our practice, but it is an immunosuppressant. Typically we try to use it at the lowest effective dose. It is relatively expensive.

- Steroids are effective to control flare-ups, but should be avoided if other methods are successful due to potential side effects. Horses with histories of insulin resistance, or GI difficulties are not good candidates for steroids.
- Topical ointments can be mildly helpful- a combination of steroids, +/- repellants and/or antibiotics if open wounds are present. The problem is that this is often not cost or labor effective. The trauma on the abdomen is not from the bites, but rather secondary self-trauma from the intense itching. Our preferred topical treatment is IBH spray or salve twice daily.
- Omega-3 supplements can be helpful such as platinum skin and allergy, SmartOmega 3 & E, EO-3, Purina Omega Match, Aleira by Arenus

### **RETRAINING the immune system for long term management:**

As this hypersensitivity is an overreaction of the immune system, the immune system can be retrained with small doses of exposure to antigens.

Three options:

- **Autoserum Granules** - Sound Equine can process an autoserum to train the immune improves 70% of horses over the course of 7 years. This is not expensive, and does not require shots. It does require you to have a new autoserum made each year.
- **Allergy Shots** – An injectable serum is made based on allergy testing results. These shots are given in the muscle
- **Allergy testing** can be performed by a dermatologist. This is expensive, but intradermal allergy testing is the gold standard of care. After all allergies are determined, a serum can be injected back into the horse approx. weekly. Response to treatment (shots) takes time (months to years) to show improvement. However, allergies are a threshold effect, sometimes there are other allergies that can be removed from contact more easily.
  - Blood testing for allergies is not yet accepted as accurate, but is sometimes helpful, and is much less expensive than having a dermatologist perform testing. You will also be using a serum to "retrain" the immune system.