Board of Adjustment

Case Number: CBOA-3009

Hearing Date: 11/15/2022 1:30 PM

Case Report Prepared by:

Jay Hoyt

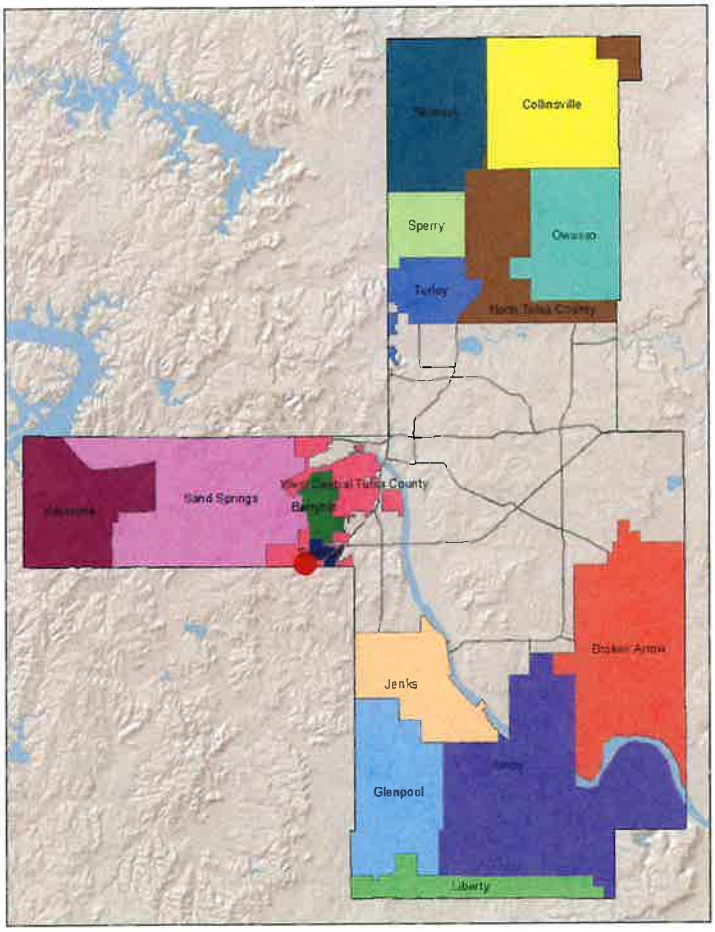
Owner and Applicant Information:

Applicant: Janetta & Bobbi Martin

Property Owner: MARTIN, BOBBI & JANETTA

Action Requested: Variance to allow a horse (Use Unit 3) on RS zoned property (Section 410)

Location Map:



Additional Information:

Present Use: RS

Tract Size: 0.15 acres

Location: 6504 W 60 ST S

Present Zoning: RS

Fenceline/Area: West Central Tulsa County

Land Use Designation: Rural Residential/Agricultural

TULSA COUNTY BOARD OF ADJUSTMENT
CASE REPORT

TRS: 9231
CZM: 45

CASE NUMBER: CBOA-3009
CASE REPORT PREPARED BY: Jay Hoyt

HEARING DATE: 11/15/2022 1:30 PM

APPLICANT: Janetta & Bobbi Martin

ACTION REQUESTED: Variance to allow a horse (Use Unit 3) on RS zoned property (Section 410).

LOCATION: 6504 W 60 ST S

ZONED: RS

FENCELINE: West Central Tulsa County

PRESENT USE: RS

TRACT SIZE: 0.15 acres

LEGAL DESCRIPTION: LTS 1 2 BK 60, TANEHA Tulsa County, State of Oklahoma

RELEVANT PREVIOUS ACTIONS: None Relevant

ANALYSIS OF SURROUNDING AREA: The subject tract is zoned RS and contains a single-family residence. The property is surrounded to the north, south, east and west by RS zoned lots containing single-family residences, with the exception of the lot immediately to the north which contains a church.

STAFF COMMENTS:

The applicant is before the Board to request a Variance to allow a horse (Use Unit 3) on RS zoned property (Section 410).

The keeping of horses on a property is considered a Use Unit 3 – Agriculture use in the Tulsa County Zoning Code. The subject lot is zoned RS, which, per Section 410, Table 1 of the zoning code, does not allow Use Unit 3 uses, therefore the keeping of horses on the subject lot would be require a use variance to allow agriculture uses on the lot.

The applicant provided the statement "I have 2 special needs horses I cannot keep just anywhere. They also serve as therapy horses." In addition they also stated they were requesting the variance "to keep my horses on our property and continue as holding pens for Tulsa County as they request."

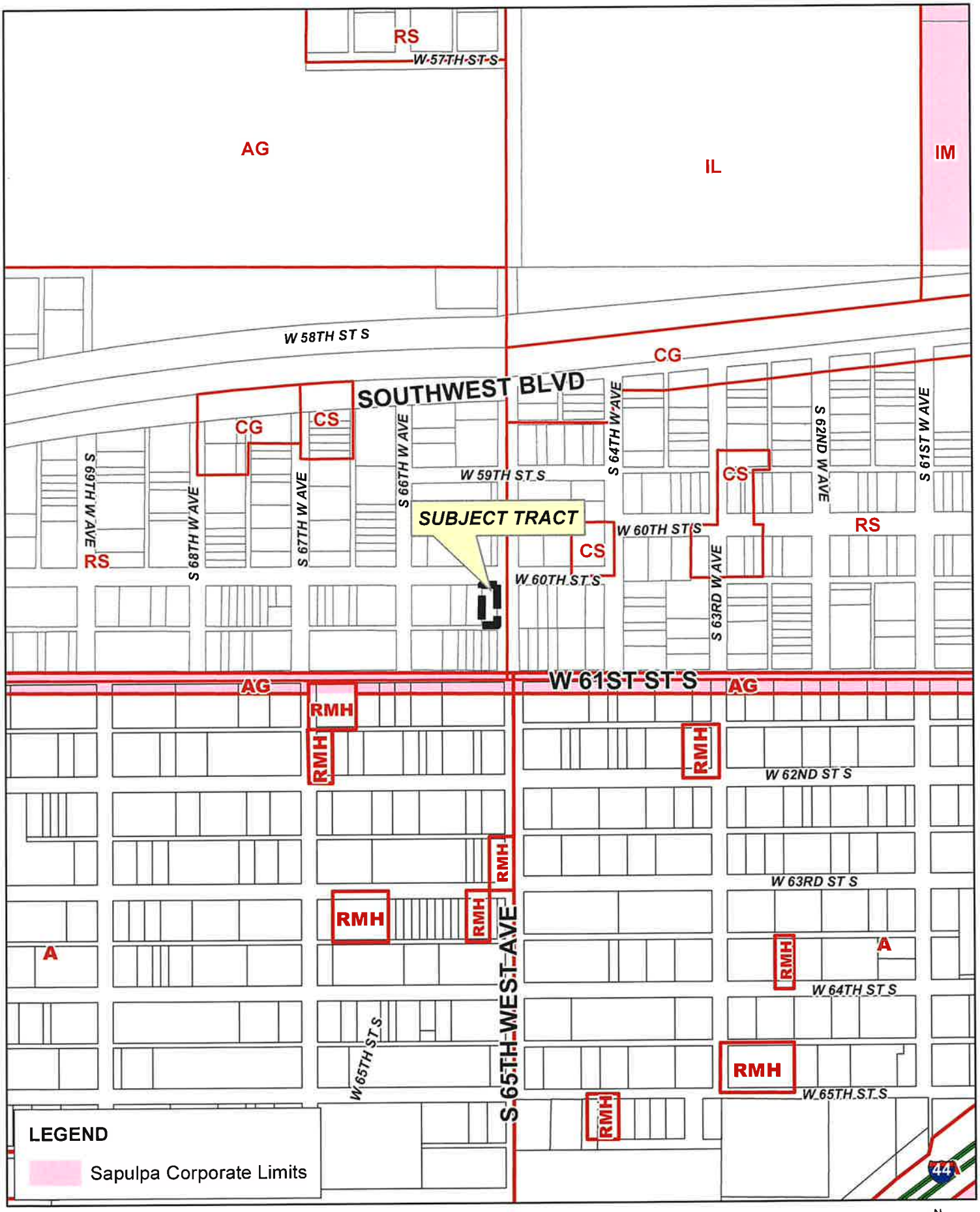
If inclined to approve, the Board may consider any condition it deems necessary and reasonably related to the request to ensure that the proposed variance is compatible with and non-injurious to the surrounding area.

Sample Motion:

"Move to _____ (approve/deny) Use Variance to allow horses (Use Unit 3 - Agriculture) on RS zoned property (Section 410).

Finding the hardship to be _____.

Finding by reason of extraordinary or exceptional conditions or circumstances, which are peculiar to the land, structure or building involved, the literal enforcement of the terms of the Code would result in unnecessary hardship; that such extraordinary or exceptional conditions or circumstances do not apply generally to other property in the same use district; and that the variance to be granted will not cause substantial detriment to the public good or impair the purposes, spirit, and intent of the Code, or the Comprehensive Plan."



Feet
0 200 400

CBOA-3009

19-12 31

N

Feet
0 200 400

Subject Tract

CBOA-3009

19-12 31

Note: Graphic overlays may not precisely align with physical features on the ground.

Aerial Photo Date: 2020/2021

N

Feet
0 50 100

Subject Tract

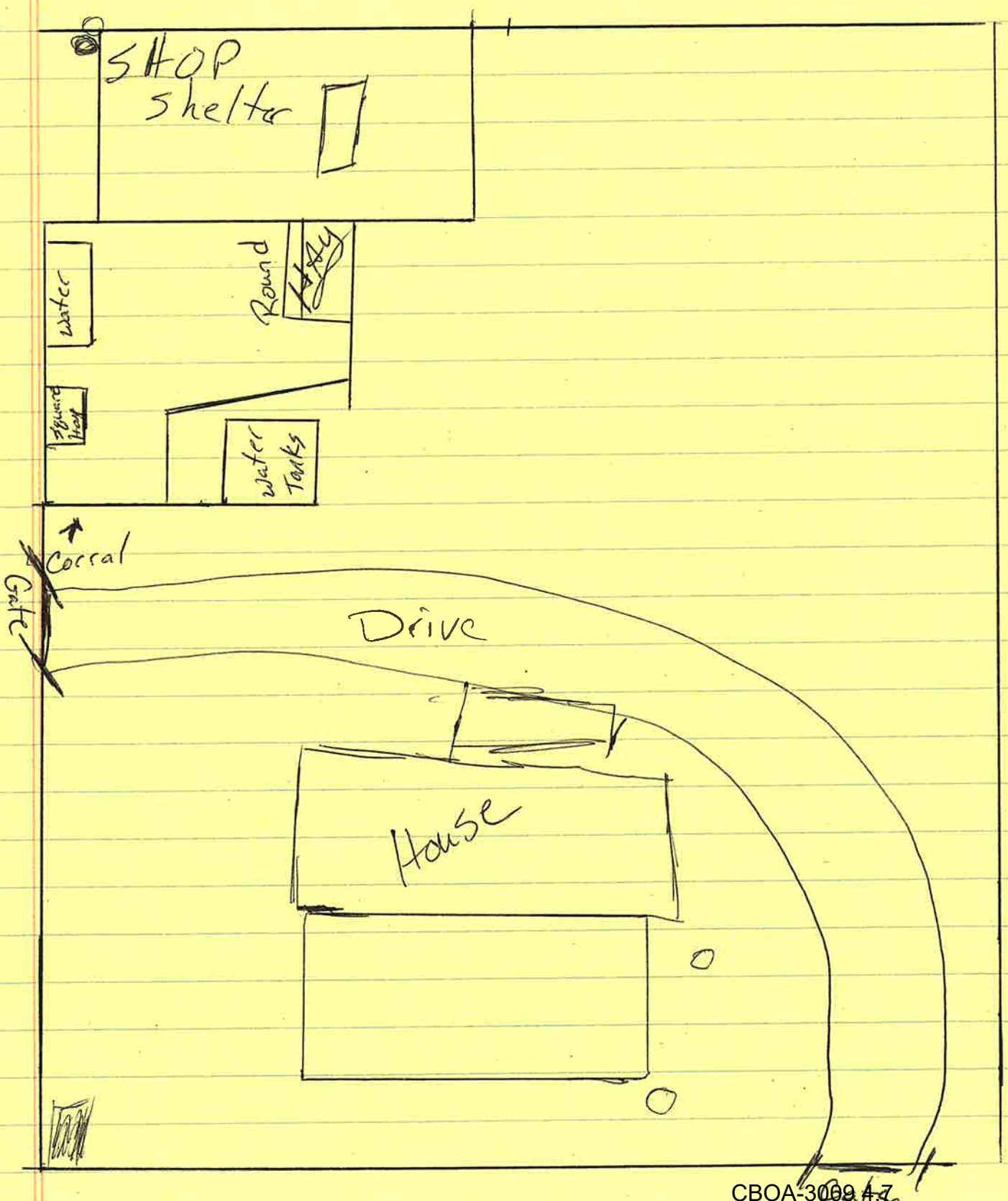
CBOA-3009

19-12 31

Note: Graphic overlays may not precisely align with physical features on the ground.

Aerial Photo Date: 2020/2021

N


SHOP
Shelter
Round
Hay
water
Square Hay
Water Tanks
Corral
Gate
Drive
House

Case Number CBOA-3009

① 6504 W 60th The property is 6500 SQFT Before you take off for the House Foundation the travel trailor the shed + several cars + trailers. O S U Extension Center Calls for 5 to 10 Acres per Horse in Oklahoma that is 217,800 SQFT to 435,600 SQFT Not quite Enough Room.

② The Person to the West Just Put in a New mobil Home and when He comes out His Front Door this lot with all the storage stuff + now a Horse is what He Has to look at.

③ I understand they Have been Told to move the Horse a Few Times Because of Zoning They move it then move it Right Back in a week or so

④ Horses + Livestock Draw a Large Number of Flies Mosquitos Ticks + Rodents

Managing Grazing of Horses

Dr. David W. Freeman
Extension Equine Specialist

Daren D. Redfearn
Extension Forage and Pasture Management Specialist

Oklahoma Cooperative Extension Fact Sheets are also available on our website at:
http://osufacts.okstate.edu

Few horse owners prioritize grazing and forage management. Money is wasted by feeding more supplemental feed, and the appearance of the grazing area is undesirable. Lack of expertise and prioritizing of forage management may be the most frequently occurring mismanagement practice.

How can horse owners control grazing of horses so they get the "best" out of pastures, and keep them from "tearing up" a pasture?

These are simple questions with not so simple answers. In order to maximize utilization of pasture on the farm, owners need a general understanding of how horses utilize forage, factors affecting animal performance on pastures, and knowledge of grazing behavior of horses. Combining these "animal factors" with agronomic factors will allow owners to set realistic goals and design pasture plans that meet them.

Outlined below are several considerations for management of the "animal factors" that can assist in the success of maximizing forage utilization for horses. Additional information, including recommendations on forage types and agronomic practices to enhance forage production, can be obtained from OSU Extension Facts, ANSI-3980 "Forage for Horses."

Intake Limits of Horses on Forage Diets

How much forage a horse **can** eat and how much forage a horse **will** eat are two entirely different items. Mature horses on complete hay diets can consume up to 2.25 percent to 2.75 percent of their body weight in hay on a daily basis. Therefore, in situations where hay is full fed and highly palatable, a mature 1,200 pound horse can consume about 30 pounds of hay per day. The upper limit of dry matter intake on pasture should be similar or slightly less than the dry matter intake expected on all hay diets. Wet forages such as immature winter grains may have less intake of dry matter because large amounts of water are ingested as part of the plant.

Several factors influence voluntary intake, making it difficult to estimate how much pasture forage a horse will eat. Some pastures and grasses are more palatable than others. Lush, immature, growing forages are more readily consumed than tall, weedy, unpalatable forages. Horses introduced to lush pastures from a dry lot or stall will routinely graze aggressively the first few days as compared to their intakes after they are acclimated to the forage. Initial intake can be large enough to cause founder or colic unless owners restrict grazing.

Extremely cold, wet, windy, or hot weather reduces the amount of time horses graze. Supplemental feeding decreases the amount of time horses graze. In addition to the obvious reduction of appetite from the supplemental feed, horses will quit grazing and stand around feeding areas for several hours in anticipation of receiving grain mixes.

Forage palatability. Palatability refers to a horse's preference for different forages. Typically, small grains, annual and perennial ryegrass, bluestems, and bermudagrass are highly palatable for most horses. Ryegrass, wheat, oat, rye and triticale forages are acceptable to horses. Of these, ryegrass, wheat, and oats are the most preferred. Palatability studies on legumes suggest that horses readily accept crimson, berseem and subterranean clovers. Arrowleaf clovers and vetch have significantly lower palatability.

Palatability is relative between different horses and the previous forages they have eaten. Forage types that are the sole source of pasture may show high palatability, whereas the same forage in a multi-forage pasture may go ungrazed. Given time, horses will pick and choose one forage over others in pastures with several forage species. Spot grazing occurs in horse pastures because of forage preference.

The order of palatability of different forages changes as the pasture changes with the seasons that affect growth of different forages in the pasture. Also, horses raised on a particular forage accept forage more than horses without previous exposure to the forage.

Forage Nutrient Utilization

A limited amount of research and a large amount of casual observation indicates forage diets can supply the nutrient needs of several classes of horses. Availability of sufficient amounts of high quality forage is usually the limiting factor.

Compared to cattle, horses have less ability to digest energy of high quality forages. When consuming high quality forage, horses will compensate for slightly lower digestion rates and faster passage rates by higher voluntary intakes ofdry matter. Horses digest highly lignified forage (mature, stemmy forage) poorly. Energy digestibility coefficients for forages decrease from more than 50 percent to less than 30 percent as quality of forages decreases. Similar ranges of forage quality may affect energy digestibility in cattle 2 or 3 percent compared with the 10 to 20 percent in horses.

Protein digestibility in hays typically range from 50 to 70 percent. Protein digestibility of forages in pastures would be

expected to be similar to hays of similar maturities. As with energy, digestibility of protein in forages can be expected to vary between forage species and within species at different stages of growth. One research trial comparing different hays calculated the protein digestibility of high quality bermudagrass at 57 percent, low quality alfalfa at 66 percent, and high quality alfalfa at 73 percent.

Protein digestion within the horse's digestive tract is also significant. Feed not absorbed in the small intestine travels to the hind gut. Protein in forage is better utilized when digested in the small intestine rather than the hind gut. Horses digest protein in low quality forage (stemmy, mature) mainly in the hind gut. Protein in low quality alfalfa is digested mainly in the hindgut, whereas almost $^1/_3$ of the protein in high quality is digested in the small intestine. Maximizing protein digestion in the small intestine is especially important when meeting needs of growing horses and broodmares.

Forages are also a good source of minerals and vitamins. Mineral content of forages vary between different forage species and in similar forages at different stages of growth and pasture locations. Agronomic practices such as fertilization alter mineral profiles of forages. As a general rule, balance calcium to phosphorus in forages for all classes of horses. However, the amounts of the two minerals may be deficient, especially for growth, exercise, and broodmare production. Additional minerals should be fed as a supplement at regulated intakes. Mineral supplement with equal parts of calcium and phosphorus can be supplied free choice, however, large variations of intake will occur nonrespective of a horse's nutrient needs. Forages also are an important source of many vitamins, especially vitamin A containing compounds.

Estimating Correct Stocking Rates

Proper stocking rates, or the number of horses per unit of land area, are affected by several factors such as size of horses, forage species, soil type, season of the year, environmental moisture, fertilization, and length of time horses have access to a pasture. These factors make it difficult to provide stocking rate recommendations at rates of number of head per land area. To avoid variability, research trials quantify stocking rates as amounts of forage per amounts of animal weight, e.g. pounds of forage dry matter per 100 pounds of live animal weight.

In one study of yearling horses grazing high quality, well-managed bermudagrass pasture, forage allowance of 60 pounds of forage dry matter per 100 pounds of live weight provided the maximum average of daily gain. Denser stocking rates greatly reduce average daily gain. At proper stocking rates, thick stands of bermudagrass of 4 to 6 inches in height are grazed to a minimum of 2 to 3 inches, and managed so the grass does not become in short supply or too mature. Under optimal conditions, non-supplemented yearlings on well-managed, high quality bermudagrass can gain 1 to 1.2 pounds of body weight per day. Yearling gains on well managed cool season, small grain pastures (rye, wheat) may be slightly less (.8 to 1 pound per day), probably due to the intake of large amounts of water in small grains. Water fill may not allow for enough dry matter intake to facilitate moderate growth rate.

The availability of supplemental grain has been shown to affect yearling growth both positively and negatively in several grazing trials. Yearling gains on properly stocked, well- managed bermudagrass pasture have been improved by supplementing grain at 1 percent (6 to 8 pounds grain per day) of body weight per day. However, yearling gain was decreased in another group in which half this amount of grain was fed daily. The probable cause was the grazing behavior was altered by them spending more time waiting around feed troughs. Apparently, the benefit of the supplemented grain did not offset the lower forage intake from less time spent grazing.

Supplemental feeding of yearlings on small grain pastures appears to be of more value for increasing performance compared with bermudagrass pastures. One trial reported yearling gains on small grain pastures increased from 0.8 pounds per day to over 1.5 pounds per day when grain was fed at 1 percent of body weight per day.

Considerable management accompanied the previously mentioned research to manage forage quantity and quality. Bermudagrass was managed so horses grazed thick stands that were 4 to 6 inches in height. Small grains should be managed so forage growth is 6 to 8 inches tall. This will result in maximum quantity and quality of forage. Animal performance will be extremely limited at high stocking densities, seasons of the year when grasses are dormant, and in pastures with poor quality forage.

Usually, forage heights are too short on horse farms because of overgrazing. Overgrazing severely limits forage production and forage intake. When the herbage height of bermudagrass decreases below 3 inches in height, it severely reduces the average daily gain of yearlings. This relates to the increased nutrient availability in leaves, compared to the stem portions of the plant. The top layer of pastures have a higher leaf content. **It is important for horse performance as well as forage growth to allow a pasture to develop adequate leaf area before grazing, and provide periodic rest from grazing to allow forages to recuperate and maintain productivity.**

As previously noted, nutrient content and digestibility can be expected to decrease as forage becomes mature. Some species of forages, such as bermudagrass, grow rapidly in optimal environmental conditions. During these times, grazing might need intensified to maintain acceptable maximum plant heights and maturity. Bermudagrass should be managed to remain 3 to 6 inches tall during grazing periods.

Differences in forage growth during different times of the year, the available forage per land area, and horse weight make general recommendations for stocking rates of number of head per land area inaccurate. Under controlled grazing systems which allow optimal quantity and quality of forage, stocking rates as intense as one mature, nonproducing horse to 1 to 1.5 acres of thick, productive bermudagrass at 4 to 6 inches of growth have been successful. The same stocking rates on small grains would require 6 to 7 inches of plant growth. Pastures that have less dense forage, shorter forage heights, or not intensely managed will require more acreage per horse. Unimproved, productive, native grass pastures inOklahoma may require 5 to 10 acres per horse.

Grazing Behavior of Horses

Horses tend to be the hardest type of livestock on pastures. Pastures with cattle are usually more uniformly grazed, weeds are not as large a problem, and overgrazing is not

as immediate. Many of these observations are true because horse pastures tend to be overstocked.

These observations are also true because of the grazing differences between horses and cattle. Horses' biting style allows them to clip plants off close to the ground causing severe problems for plant regrowth. Also, horses tend to group around certain areas, killing the forage in this area and exposing the bare ground to erosion and propagation of weeds. Some horses tend to defecate in localized areas which causes manure buildup and reduced palatability of forage in these areas. The most difficult behavioral trait to overcome in horses is their selective grazing instinct.

Horses selectively graze pasture because of palatability of different types of forages and different stages of maturity of a specific forage. Horses selectively graze immature and less stemmy varieties of forage. This selectivity continues so small areas with short, new growth are continually overgrazed while surrounding areas grow past the point of desired maturity and palatability.

Selectivity results in spot grazing which reduces forage production and intake of high quality forage. As desirable species of forages are grazed out in the spots of overgrazing, less desirable, weedy species tend to increase. Surrounding areas become overly mature, and less digestible and palatable. Horses can quickly turn a pasture into a weed patch or dry lot unless both grazing and agronomic practices are employed.

Use of controlled grazing. Many horse farms, especially those with small acreages, can benefit from some type of controlled grazing system. Controlled grazing can be practiced by limiting the time per day horses have access to a pasture and/or by dividing pastures into smaller areas or "cells" and practicing rotational grazing. These practices will increase total forage production, increase the days that forage is available, and will help sustain higher stocking rates.

Access to pastures can be implemented around other farm routines such as morning and evening feedings. In that plan, horses could graze for 8 to 10 hours between feedings. However, shorter grazing periods, such as 4 hours per day, may provide better results, especially when forage supply or land area is limited.

Rotational grazing plans require the use of more than one pasture, or larger pastures can be subdivided into two or more grazing cells by the use of temporary fencing. Horses are moved as a group from one cell to the next as forage growth and consumption dictate. The time for grazing one cell may vary from one or two days to several weeks depending on stocking rates and forage growth. Although stocking rates are increased because of the reduction of land area, the grazing relief periods that the nongrazed cells receive help to prolong the forage growing season. Also, spot grazing typically will be reduced and horses can have access to forage maturities that are most efficiently digested.

A rotational system for bermudagrass pastures should maintain a minimum of 2 inches of grass in each cell. The pasture should be subdivided so it takes 3 to 4 weeks to move horses through all the cells. Cool season heights should be grazed to maintain a 3- to 4-inch minimum. Small grain cool season forages are especially susceptible to trampling, so restricting animal traffic during wet weather will help maintain forage growth.

Typical fencing alternatives include the use of multi-wire electric fencing or electrified poly-tape. Horses placed behind temporary fencing must be adapted to it. Using temporary fencing in large areas will allow horses to become accustomed to it before confinement in smaller grazing cells. Providing visibility of temporary fencing by using ribbons on wire fencing or by using products such as poly-tape will assist the success of confinement. Also, horse behavior must be understood. Horses cannot be stocked as densely as other species of livestock because of their high level of aggressive behavior. So, use of small cell grazing for large numbers of horses has limitations.

Considerations for Small Acreages

Small acreage horse farms are difficult to manage so that forage is optimized for both esthetic and nutritional value. Horse owners must be realistic about the limitations of land area and stocking rates. Some areas are too small to grow forage and are better defined as dry lots rather than pastures. Nonetheless, some forage species are better at recovering from overgrazing and trampling in smaller areas. Bermudagrass is an example of a tolerant grass species that will stand significant abuse while maintaining significant regrowth. The best recommendation for small areas is to restrict grazing by limiting grazing time. When areas are large enough, divide the pasture into cells and rotate horses around areas during times that forage is productive.

Small acreage horse owners must aggressively practice agronomic measures to promote forage growth. Introducing improved varieties of forage, dragging manure piles, and fertilization are common practices that need implemented. Areas that are subject to erosion and near flowing watersheds may need protected by fencing to prevent overgrazing, loss of soil, and silting of waterways.

Some Recommendations to Manage Grazing in Horses

The scope of this article is confined more to grazing considerations than forage management practices such a forage specie selection, fertilization, weed control, and mowing. Oklahoma Cooperative Extension offices provide additional resources on these subjects. Several recommendations for managing grazing of horses are provided below.

- The goal of forage management is to maintain the desired supply of digestible forage to grazing horses. Mature forage and weedy forage types are not efficiently digested.
- Establishing forage depends largely on what plant species are best adapted to the soil type and geographical area, and the types and levels of agronomic inputs owners are willing to employ.
- The length of forage grazing season will depend on use of warm and cool season forages, rainfall, grazing management, and agronomic practices employed.
- Don't overestimate the available forage for stocking ratedetermination. Trees, sacrifice areas, overgrazed areas, and brush must be considered.
- If pastures are of adequate size, decrease sacrifice areas by practices such as frequently relocating feed troughs in pastures.
- Consider time limit grazing and rotational grazing programs, especially when housing horses on small acreages.

- Rotational grazing, companion grazing with other types of livestock, spreading of manure piles, and other management practices will reduce spot grazing.
- Pasture forage should be maintained at minimum optimal heights. Although complete removal of horses from pastures is not possible on many farms, rotational grazing or limited turnout time will help establish initial growth, and allow for regrowth during the active season of forage growth.
- Horses should be gradually introduced to forage types that are high in nutrients such as winter annuals. For example, start turn outs for 30 minutes once or twice per day for a couple of days, followed by a couple of days with access of 4 to 6 hours before continual turnout. Watch the horse's health and behavior to determine how quickly to advance this introductory period. Allowing horses free choice hay while not on pastures during the introductory period will help decrease their appetite when they are turned out.
- Selection of forages to establish needs to be based on desired forage production times and amounts, forage compatibility to the geographical area, the expected grazing and trampling pressure, and the expected grazing and agronomic practices to be followed. In Oklahoma, the most common warm season perennials are bermudagrass and native prairie grasses. More information on specie selections and agronomic practices are found in OSU Extension Facts, ANSI-3980 "Forage for Horses" and from the Oklahoma Cooperative Extension Office in each county.

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Fly Control for Suburban or Small Acreage Horse Owners

Justin Talley
Assistant Professor

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Introduction

Increased horse ownership in or near suburban areas can lead to difficult pest management decisions, especially when dealing with arthropod pests associated with horses. Arthropod pests of horses can range from on-host parasites (e.g., lice, ticks, mites) to flying pests (e.g., mosquitoes, stable flies, horse flies) that are a nuisance to neighbors. There are three basic issues to consider when assessing pest populations in or near horse barns: 1) Is this pest considered a vector of a detrimental disease to horses or humans (e.g., mosquitoes and West Nile Virus)?; 2) What potential areas exist that could serve as breeding habitats for pests?; and 3) What type of control strategy should be implemented to reduce the pest population? These issues are important, especially in areas where your nearest neighbor is just a few feet away instead of a mile or more.

IPM

Integrated Pest Management (IPM) is a "whole-concept" approach to pest management and incorporates several different control strategies to suppress the pest. While most IPM efforts are focused on crops, it is applicable to livestock systems as well. When used properly, a good IPM program can lead to a reduction in the use of pesticides. This is important in suburban areas where improper use of pesticides can lead to environmental contamination and poisoning. The main goal of an IPM program is prevention of pest outbreaks, especially when dealing with arthropods that can transmit diseases. However, prevention does not necessarily mean employing control strategies on a continual basis to discourage pest development. One of the major aspects of a successful IPM program is employing control strategies that are timed to be economically beneficial while maintaining environmental integrity.

Flies

Flies are considered the most important insect pest of horses. The fly complex includes mosquitoes that can carry West Nile Virus (WNV), blood feeders such as horse flies and stable flies, nuisance pests such as house flies, and gastrointestinal parasites such as bot flies.

All flies have the same life stages that include egg, larva, pupa, and the adult (Figure 1). The adult is the pest stage of the life cycle for most flies, but the horse bot fly is one of several exceptions where the larva is the primary pest stage. The specifics of the fly complex will be highlighted below.

Tabanids (Fig. 2)

- More commonly known as deer flies and horse flies (1/2 to 1.5 inch).
- Blood sucking pest.
- Only females feed on horses, they need blood specifically as a nutrient requirement for egg development.
- Larvae develop in aquatic or semi-aquatic areas.
- Usually just one generation per year, but can vary between species.
- Bites are annoying and painful to horses.

Control:

- Frequent use of a pyrethroid insecticide formulated with a repellent.
- Locate animals away from wooded areas during peak tabanid activity (June through September).
- Most tabanid flies do not enter barns, so stabling your horses during peak activity (June through September) can be beneficial.

Biting Midges (Fig. 3)

- More commonly known as "no-see-ums."
- Blood-sucking pests.
- Very small (1/16 to 1/8 inch).
- Only females feed on horses, they need blood specifically as a nutrient requirement for egg development.
- Prefer to feed on calm, windless nights.
- Many different species with diverse larval habitats.
- Usually have multiple generations per year.
- Can cause hypersensitivity in horses.

Control:

- Stabling horses during peak activity (calm nights) provides protection.
- Biting midges are weak-flying insects, so fans can be helpful.
- Insecticide-treated screens can provide a protective barrier.

Stable Flies (Fig. 4)

- Resemble house flies, but have rigid piercing mouthpart, that protrude forward (1/4 to 3/8 inch)
- Blood feeder.
- Optimum habitat for larval development includes areas of hay/feed mixed with manure.
- Multiple generations per year.
- Both males and females feed on horses.

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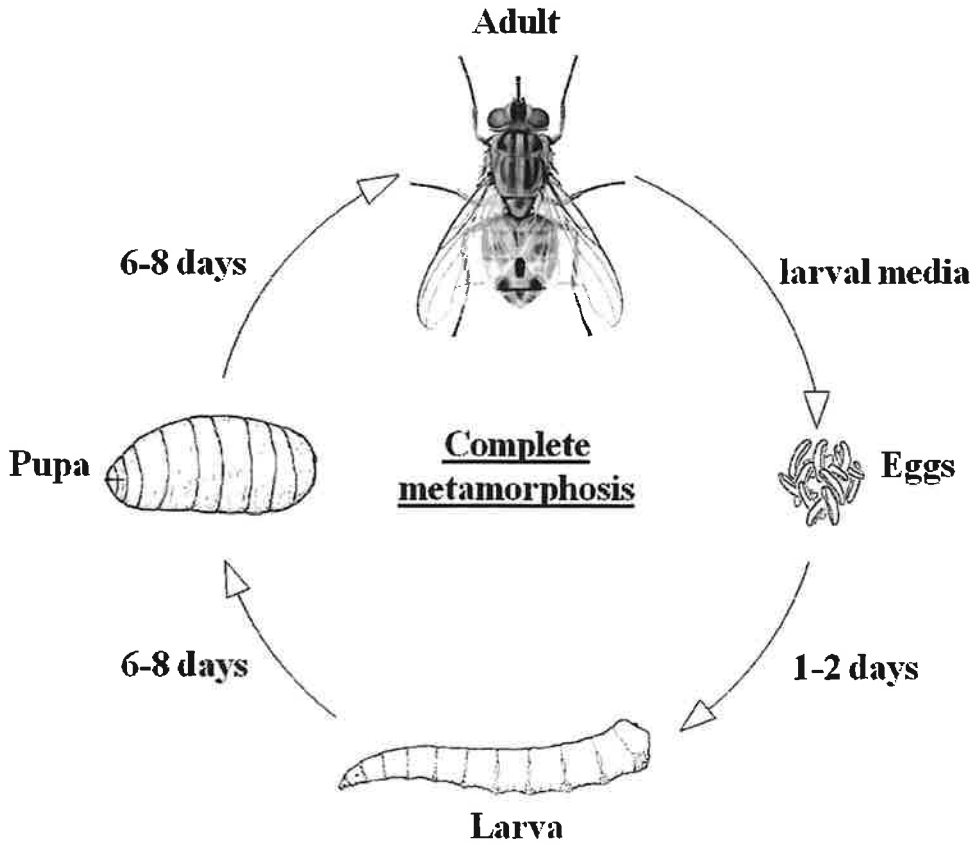

Figure 1: Genral life cycle of flies.
Credit: R. Grantham, Oklahoma State University

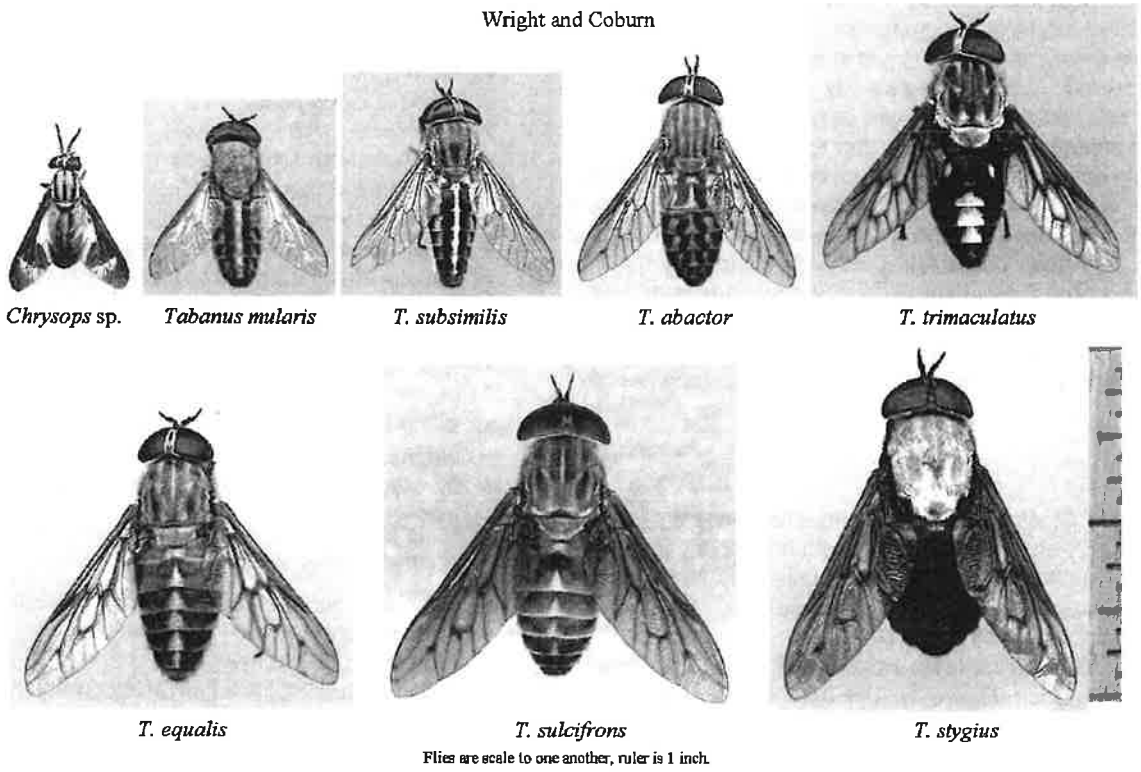

Figure 2: Common horse and deer flies in Oklahoma.
Credit: Wright, Coburn, and Grantham; Oklahoma State University.

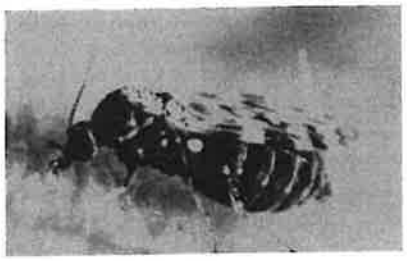

Figure 3: Culicoides midge.
Credit: USDA

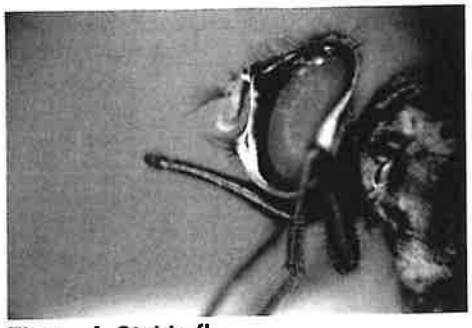

Figure 4: Stable fly.
Credit: A. Broce. Kansas State University.

Figure 5: Adult mosquito.
Credit: R. Wright. Oklahoma State University.

Figure 6: Adult house fly.
Credit: R. Brown. Kansas State University

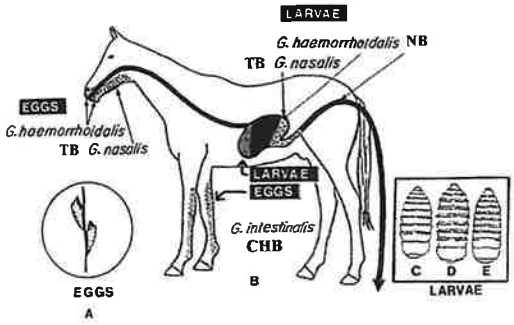

Figure 7: Adult common horse bot fly (left) and a generalized life cycle (TB= throat bot; CHB= common horse bot; NB: nose bot) (right).
Credit: A. Broce. Kansas State University.

- Preferred feeding sites are the legs or underside of the animal.
- Bite is painful and results in leg stomping behavior in horses.

Control:

- Most effective measure is the removal of larval habitats such as spilled feed or hay.
- Residual insecticide applications should be directed toward the legs and underside.
- Stable flies rest on vertical surfaces such as barn walls, so residual insecticide should be directed in those areas.

Mosquitoes (Fig. 5)

- Usually go unnoticed.
- Most active feeding period is two hours after sunset
- Blood feeder (<1/16 to 1/8 inch)
- Only the female feeds, they need blood specifically as a nutrient requirement for egg development.
- Larvae develop in permanent water sources or areas with fluctuating water such as low lying areas, tree holes, old tires, or containers.
- Multiple generations per year.
- Horses located near urban areas are more likely to experience higher mosquito pressures due to artificial habitats that retain water.
- Primary concern is disease transmission (e.g., West Nile Virus, Eastern Equine Encephalitis, Western Equine Encephalitis).

Control:

- Reducing larval habitats is a key component to a successful control program (eliminate standing water).
- Direct insecticide application to the horse can be beneficial, but may not be adequate during heavy mosquito outbreaks.

House Flies (Fig. 6)

- Non-biting fly.
- Medium-sized fly (3/8 inch).
- Larvae develop in many sources, but are most commonly found in decaying organic matter and prefer manure.
- Cause stress to horses by feeding on eye secretions.
- Large populations can create problems with non-agricultural neighbors.

Control:

- Sanitation is a key component to reducing house fly populations.
- Chemical control strategies are helpful, but should always be combined with routine sanitation practices.
- Residual sprays applied to barn walls can also limit house fly populations.
- Fly baits, strips, sticky traps, and electric grids can be helpful in enclosed spaces.
- Fly masks will limit irritation to horses.

Bot Flies (Fig. 7)

- Large flies that are bee-like in appearance (1/2 inch).

- Three main species throat bot, common horse bot, and nose bot.
- Larval stage causes injury in horses.
- Life cycle approximately one year.
- Adult flies attach their eggs to the horse's hair.
- Larvae (bots) burrow into the lips and tongue causing temporary irritation.
- Larvae then migrate to the stomach and remain there for up to 10 months.
- Larvae travel through gut and are excreted with manure.
- Larvae pupate in the ground for one to two months.

Control:

- Many of the currently available endectocides that contain avermectin for the treatment of internal parasites will control horse bots when routinely applied.

Special points should be considered for horse owners in suburban areas:

1. While flies may be perceived as an everyday issue for horse owners, non-agricultural residents around you may perceive flies as an indication of unsanitary conditions.
2. Sanitation is a good overall management technique and reduces the amount of larval habitats where flies can lay eggs.
3. If insecticide applications are warranted, they should be applied when human activity is low, and when environmental conditions are favorable, such as when winds are low and temperatures are moderate.
4. Using property barriers, such as trees to limit dispersal of fly populations onto your neighbor's property.
5. Sometimes flies can originate from non-agricultural settings, but the horse owner unfortunately, is the one who is blamed. For this reason it is important to retain detailed records of your pest control activities.

Source:

Baldwin, J., L. Foil, and C. Foil. 2005. Fly control for horses. Pub. 2913. Louisiana State University Agricultural Center, Baton Rouge, LA.

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