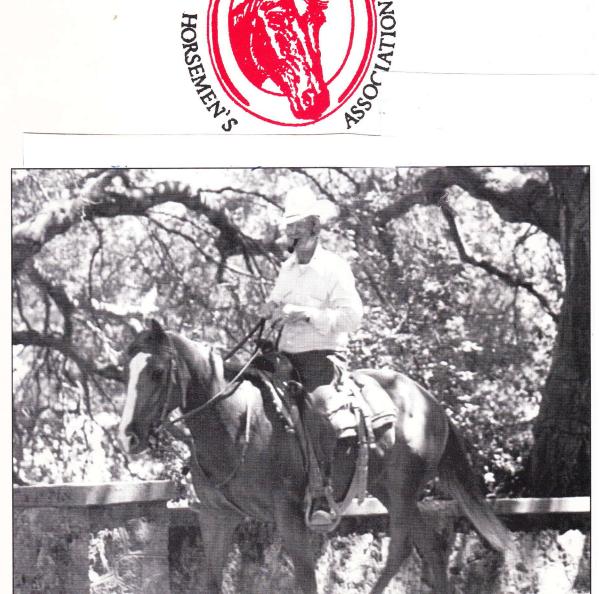
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PRESIDENT'S MESSAGE



Well, let's see . . . There are so many things that I would like to touch base on. First of all, thank you all for your current support this year by simply sending in your membership fee. There are so many aspects of this club to consider that one forgets that merely supporting the club with a membership is important in itself. As one looks at the attendance at our programs, one can see that SMCHA offers such a variety of events and that each individual program draws a different group of members and friends.

That tells me that we are reaching out singularly to each member by offering a variety of chances to join in and have fun. But to you quiet ones, the ones that we don't see at the programs, thank you for your support. With that support comes numbers and this year has been very much a "numbers" game starting with the Watershed campaign to keep our trails accessible and the proposed Presidio option for horse trails. More recently, I've been contacted by the livestock committee to offer suggestions on what should be considered in the new town ordinances coming up. Whenever I speak on behalf of SMCHA, I know that I have you to count on. Thank you for your continued "quiet" support!

Secondly, thank you for reaching out and making a visible statement to the community by supporting the NCEFT Poker Ride. Again, we had the "numbers" going for us and SMCHA won the plaque for fielding the most riders. When push comes to shove, we can sure rally when the cause is right! And yes, for those that want to know, I did ride!

Lastly, we have a few more events coming up so check your calendars and give me a call if you have any questions. *Kid's Day* on August 27th is a chance to bring your kids, grandkids or friends who don't get a chance to be around horses to enjoy the day with them and enjoy Golden Gate Park. *Pat Grady and the mini's* on August 24th are always a hit with the community, and the *Nor-Cal Show* at the Mounted Patrol Ground on August 20th is a tremendous fund-raiser for us. See you there?

Libby Armanino

COVER

Ross Meredith riding Trudlebars

Courtesy of Noel Moody



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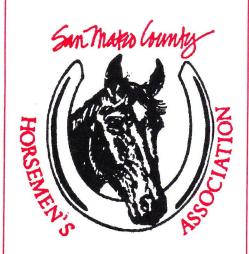
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ROSS MEREDITH • 1916-2000

Noel Moody

Many people ride. Few are horsemen. Ross Meredith was one of the best and SMCHA and Woodside will miss him.

Ross came to Woodside in 1950 with his wife, Ruth, and two children Laurajane and Richard He was Woodside's Mr. Horse. Born in Oklahoma, Ross came from a long line of horse trainers and began his career riding match Quarter Horse races. He later rode thoroughbreds at Hollywood Park, Santa Anita, Agua Caliente, Del Mar, and Bay Meadows. He later became a trainer like his father at all of the major tracks in California only retiring when he felt it was better for his children to be in one place rather than moving around so often. He set up Woodside Stable at 1171 Canada Rd. and ran it for forty - one years.

Ross trained horses of all ages and breeds, specializing in young horses and horses with problems. He showed many horses to championships at the Cow Palace, California State Fair, Santa Barbara Carter Horse Show, Santa Maria Fair, and the Santa Barbara National. He trained Jeri Pabst's Quarter Horses and Bill Howard's Arabians. Among his famous students are Bobby Avila and Carol Rose who took their first lessons from him He taught hundreds of Woodside residents to handle their horses well enough to enjoy Woodside's trails.

Ross was awarded the Distinguished Horseman of the Year award in 1973 by SMCHA for his outstanding contribution to the horse community. He was a SMCHA board member from 1950 until 1999.Ross helped establish the Woodside Livestock Committee to help ensure good care of animals in Woodside. Ross was also instrumental in establishing the SMCHA Riding Clinic held each summer at the Mounted Patrol Grounds. He was especially interested in beginners and taught that class for ten years. Ross also helped with shows in the area. He designed the trail horse courses for Tally Ho at the Menlo Circus Club for twenty years and was an important part of SMCHA and Mounted Patrol shows. Ross and his wife Ruth put on the SMCHA Senior Playday for thirty five years. It was an institution held every September.

Ross himself was a Woodside institution. He could be seen every morning starting at nine o'clock going down Canada Road with one horse then another and another until he was finished Then he would ride his arena horses, mostly colts. Ask him a question and one would probably get a yep and nope answer. He spoke with brevity but was always totally honest. He was a man of great character and was respected by everyone.

Ross was a great observer. He could read horses and knew when they needed special care. He treated them as individuals. Ross could also read people. He was a great judge of humanity. He would help people without being asked There would be a new bit or a piece of horse equipment on a person's saddle with a note, "Try this. It should work" All of this made for great loyalty to Ross. His boarders never left once they got in. Chris Olmo, age 94 who still rides almost daily, boarded with Ross from the year Ross opened until Ross had to retire due to a terrible accident in his shower at home. Noel Moody boarded her horses there for twenty-seven years. Bud Gasavoda was a customer for forty-two years. Twenty five years was common.

Woodside Stable was the center of horse life in Woodside because of Ross and all of his knowledge and willingness to help people and their horses. There aren't anymore people like Ross around. He was the end of an era. The horses in heaven are now being cared for properly.

A NOTE FROM THE EDITOR

Tanya Rebarchik

As you flip through the pages of this issue, you'll notice that there's something missing: After many years, Clem Carroll has decided to "retire" her column, Clem's Corner.

I'd like to thank Clem for all the wonderful stories and interesting topics she has come up with over the years. Lots of work, love and research went into her column each time.

Watch for some of her classics in upcoming issues!

WORKDAY AT JACK BROOK HORSE CAMP—APRIL 8, 2000

Over 30 people from various clubs including SMCHA, Volunteer Horse Patrol, and Los Viajeros donated their time and helped get Jack Brook Horse Camp ready for the season. Great job, everyone!



SPRING RIDE AT EDGEWOOD PARK

Nancy Crowley

After an absence of several years, SMCHA returned to the beautiful Edgewood Park for this year's spring ride. The ride was held on Sunday, April 30th under sunny skies and amidst the spring wildflowers.

For those of you who have not been to Edgewood Park in the spring, you don't know what you are missing. This jewel of a park has been saved for hikers and equestrians more than once from becoming a golf course. We are very fortunate to be able to continue to ride and enjoy the beautiful views, butterflies, and most of all the wildflowers here in our own backyard.

On this day we had 25 riders. We left from the staging area at Edgewood road in two groups after a spot of champagne and donuts served by our President, Libby Armanino. One group led by Kathie Goddard on her new horse Quincy joined by myself on Buddy.

Chris Hart led the second group on his horse Leo. I was very happy to see so many new faces.

We had a delightful, easy 90-minute ride to Edgewood where we tied horses to tie lines and lunched under oak trees. Chris Hart arranged a Mexican themed lunch complete with margaritas, chips and guacamole. We were treated to authentic Mexican fare featuring carne asada and ceviche.

Look for more great rides coming up this year!



GENERAL MEETING AT NCEFT

Kathie Goddard

The second general meeting of 2000 was held on April 27 at the National Center for Equine Facilitated Therapy in Woodside. The National Center for Equine

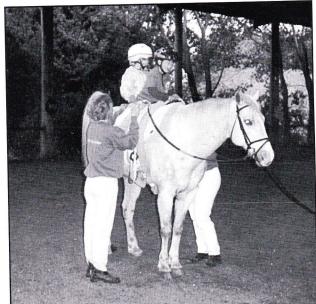
Facilitated Therapy (NCEFT) is a non-profit organization committed to providing a specialized form of therapy, called Hippotherapy to the disabled community. Licensed therapists aided by volunteers conduct 30-minute sessions using a horse as a therapy tool.

On this evening, they put on an impressive demonstration for SMCHA and guests of NCEFT. It was a moving experience to see children who are unable to speak, communicate with the horses and excel at feats of physical challenge that would not have been possible without the therapy provided by this wonderful organization. We were privileged to witness a breakthrough by one

young boy who that night extended beyond previous physical limitations.

A wonderful buffet was provided featuring barbecued chicken and a vegetarian lasagna that was so delicious you may see it again up at horse camp!

See you at the next general meeting on August 24th!



RENAISSANCE FAIRE COMES TO WOODSIDE

Nancy Crowley

This year's May Day Parade came to Woodside in the form of a Renaissance Faire and SMCHA was there to help celebrate the 78th year of this parade.

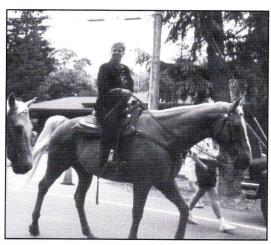
Saturday, May 6 we lucked out again with great weather. The SMCHA color guard

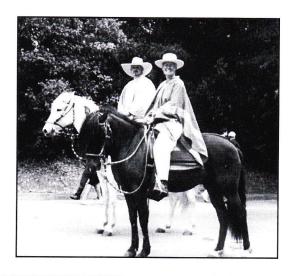
made our first appearance since winning first place in the color guard competition at the Grand National Rodeo in October 1999. We proudly carried the flag we had won at the Cow Palace.

Also making a first appearance in a parade that day was Quincy, Kathie Goddard's new mount. Kathie was not sure how Quincy would take all this. She wasn't too worried as when she practiced with the flag, he tried to eat it. This is always a good sign of a calm

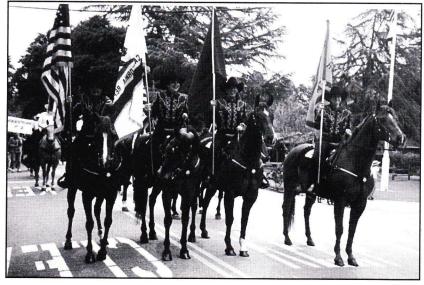
horse! He proved to be an all star and didn't bat an eye even when he had a close encounter with some balloons.

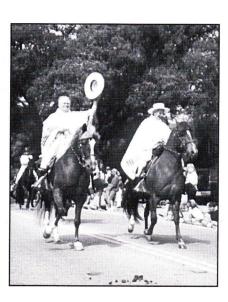
Missing from our usual color guard was Laurie Fieguth who left for Europe that day. She swears she was thinking of









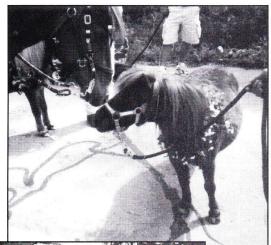


May Day Parade, continued

us but I think her mind was on a glass of wine in a French café! Lisa Dixon and her horse Super did a great job filling in.

The junior color guard joined in with two riders, Annie Armanino and Colleen Daley. Also riding were several members of SMCHA and our thanks to them for making our group complete.







HOW TO TAKE A PICTURE OF YOUR FOAL

From the internet, submitted by John Telucci

- 1. Remove film from box and load camera.
- 2. Remove film box from foal's mouth and throw in corner of lot.
- 3. Remove foal from corner and brush dirt from muzzle.
- 4. Choose a suitable background for photo.
- 5. Mount camera on tripod and focus.
- 6. Coax foal into pre-focused spot and return to camera.
- 7. Find foal again.
- 8. Forget about pre-focused spot and remove camera from tripod.
- 9. Chase around after foal while trying to look nonchalant.
- 10. Focus with one hand and fend off foal with the other hand.

- 11. Get tissue and clean nose print from camera lens.
- 12. Find foal again.
- 13. Unfold tripod from scrambled mess in dirt.
- 14. Find foal again.
- 15. Put cat in tack room and put peroxide on scratch on foal's nose.
- 16. Find foal again.
- 17. Try to get foal's attention by squeaking a toy over your head.
- 18. Replace your glasses and check camera for damage.
- 19. Fix a drink.
- 20. Sit back, relax and sip your drink and resolve to teach foal "whoa" and "stand" first thing in the morning.

STARS, STRIPES AND SMCHA

Nancy Crowley

At 10:30 sharp to the sound of a cannon blast, the SMCHA color guard and six members from the association joined in the biggest 4th of July parade west of the Mississippi. This year's parade was one of the largest ever featuring Miss California, the Stanford and Cal marching bands and of course, horses!

The color guard really got in the spirit this year and changed from our normal sequined "Bob Mackie" look to a star spangled theme. The saddle pads and shirts matched with red, white and blue stars and stripes. The horses wore red, white and blue tail bows with long, flowing ribbons, which looked beautiful but as we discovered, are only good for one use. When a horse does what comes naturally, the white ribbon turned a bit green. But, we still looked great for the judging and the parade.

Our good friend and past President Mary Beth Stucky and her horse Quincy came all the way from Paso Robles to fill in for an ailing Lizzy, normally ridden by Laurie Fieguth. An interesting phenomenon occurred in that we had what I call "Quincy squared." Both Kathie

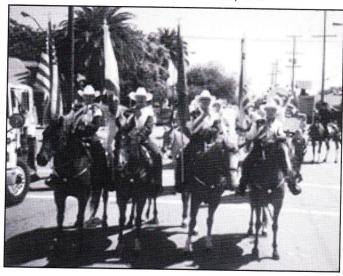
Goddard and Mary Beth ride a horse named Quincy and marched side by side in the parade. Completing our group was myself on my steady, Buddy, (this was our 11th time in this parade) and Debbie Tucker on Celise.

I have to also make a special mention for Sue Sheehan who rides every year

The 2000 SMCHA Color Guard celebrates the 4th



Color Guard in their new uniforms



and every year shows up just in time. She was awarded her own special saddle pad cover to recognize her inthe-nick-of-time arrival year after year.

Lynn Kinney was among a group of Peruvian Paso riders in their traditional tack and attire, and she won second

The hardworking ground crew



place on her horse HS Antigua in the Fancy Parade Horse category.

This year the organizers of the parade took extra precautions to help the horses avoid the trains because in previous years, the train never failed to blast its horn just as we rode by. Despite the best efforts, we still had to deal with the train and the horn. A train horn blaring while you are marching down a narrow street crowded with parade watchers can put out even a seasoned horse. Luckily, there were only a few side steps and all did well. We even dealt with a few firecrackers behind us. All survived!

NOTES FROM NOEL

Noel Moody

Los Viajeros Four Day Ride

I bet you saw quite a few trailers pulling out of Woodside around June 22 of this year. That's because Los Viajeros members and guests were heading up to the Sierra foothills outside of Georgetown for the LV Four Day Ride.

What a great ride! Seventy-nine of us camped under pine trees for four days of riding, fun, and laughter. The camp is in the El Dorado National Forest. The Forest Service and the El Dorado Equestrian Trail Foundation have joined hands to make this wonderful horse camp and fabulous trails leading from camp. One has a choice of which loop to ride, a choice of degree of difficulty to ride from level to very steep, and also a choice of time to ride from a one hour loop to a ten hour loop. It is really great riding. Also, there are two restaurants to ride to.

Friday night LV was treated to great western music by the Stardust Cowboys. Lots of fiddling, singing and dancing right in camp.

Saturday night the LV thespians, the Fowl Players, presented their spoof on E.T. called "E.Z. Goes Home." It had wonderful one liners and a **great** scene of a little camp whoopy between two campers played by Anthony Lazzara and Christine Wright. Noelle Rodolari was E.Z.

Stars, Stripes and SMCHA, continued

Many thanks to our walkers who walked beside the horses with halters in case of emergency. Our color guard Moms Bev and Pat were there to make sure that children and unaware adults were clear before the horses came by.

Personally, I have a wonderful sense of community every time I ride in this parade. A few of us admit to getting choked up as we first step onto the parade route. I carry the American flag and many times along the parade route am saluted by Veterans. My son Nick, who walked the parade, saw many classmates and fellow boy scouts whom waved and called his name. It's a great feeling and a great day.

Again this year, SMCHA took first place in our unit. The next event when the color guard will represent the club will be at Tally Ho in September at the Menlo Circus Club. Please come see us!

Later that same evening everyone took out their lucky tickets for the annual LV raffle. This is the only fund raiser LV has during the year. Everyone brings something to contribute. Goodies this year included folding camp chairs, a camp canopy, lanterns, wine, books, fly masks, halter and lead ropes, saddle bags, bridle holders with horse's heads, and lots and lots of other nice things. The raffle raised more than \$900.00 for the club. Kitty Haddix and June Irhazy were head honchos for this event. Sissy Baskin was the announcer.

Friday's ride was special because each group ended up at the restaurant, "Camp Virner." There were five different rides to choose from to get there. One ride was only twenty minutes from camp riding parallel to the road The other rides took loops that were from one and a half hours to four hours of riding We went down some fun zig zags to a fast flowing creek. Then we came up some very long and medium steep zig zags. Lots of fun! We tied our horses to pine trees around the restaurant. Camp Virner opened up just for LV, and we were the only ones there. The food was excellent and the ambiance was delightful. Every wall was decorated with paintings of wildlife. (These were for sale.) LV purchased a painting of a Golden Eagle for LV president Cathy Hatcher which was presented to her on Saturday night. Everyone signed their name on the back of the painting. This was for our appreciation to Cathy for all of her work for LV, not only for the Four Day Ride but also for all of her leadership these past two years.

Cathy and Josh Hatcher, Edie and Bob Morin, and Nancy and Gordon Brown were ride chairmen catering was done by the Cool Deli of Cool, California. Everyone deserves a big hooray for the excellent job they did HOORAY!

Sunday we took short rides and then packed up our new green camp chairs with the LV logo on them (these were our ride gifts along with our new LV ride pins) and headed home.

For information on Los Viajeros Riding Club call Rob Krensky at 650-368-8200 fax:650-299-9913 or call Cathy Hatcher at 650-726-5375 fax: 415-863-2640.

WELCOME TO HORSE-AHOLICS ANONYMOUS

Good Afternoon.

I AM a horse-aholic. I would like to welcome all of you to this month's meeting of Horse-aholic Anonymous.

Some of you are here tonight because a friend or relative brought you. You may be sitting here thinking that you are OK and don't really need any help. It is not easy to admit that you are a horse-aholic and it is even harder to bring yourself to a HA meeting for help. HA is here to assist you.

I have some questions to ask. If you can answer YES to more than three of the following, you have come to the right place.

- 1. Can you say "sheath" in public without blushing?
- 2. Do you drive a big truck with a towing package when everyone else drives a real car?
- 3. Do you have more than one vehicle? One for you and one for the horses?
- 4. Do you spend your holidays going to shows, clinics and seminars when everyone else goes on a cruise?
- 5. If you do go overseas, is it to a riding vacation in Ireland or to Spruce Meadows to watch the Grand Prix?
- 6. Do you discuss things at the dinner table that would make most doctors leave in disgust?
- 7. Do you consider formal wear to be clean jeans and freshly scraped boots?
- 8. Is your interior decorator State Line Tack?
- 9. Was your furniture and carpeting chosen with your horses in mind?
- 10. Are your end tables really tack trunks with table-cloths thrown over them?
- 11. Do you know the meaning of _____?
- 12. Is your mail made up primarily of horse catalogs and horse magazines?
- 13. Do you get up before dawn to ride? Go to horse shows? Clinics? [but have trouble getting up for "work?"
- 14. If you do have dresses, do they all have pockets? Do those pockets often contain bits of carrot, hay, or sweet feed?

- 15. When you meet a new person do you always ask them what kind of horse they have and pity them if they don't have one?
- 16. Do you remember the name of their horse sooner than you remember their name?
- 17. Do you find non-horse people boring?

If you answered YES to one of the above, there is still hope. If you answered YES to two, you are in serious trouble.

My advice to all of you with three or more YES's is to sit back and smile, turn to the smiling person next to you, and know that your life will always be filled with good friends and good horses and it will never be boring.

Author Unknown



MY SEARCH FOR A SILVER SADDLE

Judy Gage

I grew up at a time when the cowboy was the American hero, larger than life, infiltrating our young psyches from the big screen. He was the symbol of Romance, Adventure, Strength, Dependability and Moral Superiority.

Life seemed simpler then. All the good guys wore white hats and rode beautiful horses with silver saddles. Hollywood cowboys to be sure, but that's what we saw, so that's how it was.

Recently I've gotten it into my head that I need a silver saddle, vintage 1940s or 50s. I deliberately avoid the knowledge that most of these saddles now reside in Western museums and private collections. If I did find one, the

cost would likely be way more than what I spend to keep my three horses living in style for many years! I rationalize this desire with the idea that they are works of art, much like a fine painting; icons of another era before computers, instant communication and high speed world travel. A time when the world seemed a bigger place, more mysterious, more innocent: the world of my youth.

There's a great book out called *Cowboys Are My Weakness*, by Pam Houston, a funny collection of short stories about women drawn in by the myth of the cowboy. Now, I find cowboys interesting and fun to watch, like many forms of wildlife, but what I discovered early on was that it wasn't the cowboys who were my weakness. It was the horses.

It was the horse that was noble, strong, loyal and trustworthy. Somehow, all those virtues got misplaced to the cowboy from the horse, where they rightfully belong. After all, what's a cowboy without a horse? Just another guy on foot. Most of 'em don't even know how to sing. Cowboys are often said to treat their horses better than anyone else—especially their women. Well, that's because without that horse, his very livelihood, not to mention that rugged romantic image is gone. Poof! Adios.

Many young girls pick up on this and go "horse crazy" for a while, only to get distracted and head off

in another direction never to return. This really didn't happen to me. Oh, I got distracted a little. (Roy Rogers was probably my first crush.) But luckily, I never lost sight of what the horse represented. You

see, through the horse, I was able to become that free-spirited, independent soul myself.

I decided I'd rather have the horse than the cowboy. It's a decision I've never regretted. To this day, I'm happier on a horse than anyplace else in the world. All I need now is that silver saddle.



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ONE CHANCE IN A MILLION

Here's a story that may bring a tear to your eyes. I don't know the author. Happy Trails.

(submitted by John Telucci)

It happened so sudden, 12 years in my past, For the rest of my life the injury would last. The cars hit head-on, not a chance to slow down, The next I remember, I lie on the ground. My hip joint was crushed beyond all repair, "You're too young to replace it," Doc said with a stare.

"You will walk again but never will run".

These words hit me hard like a shot from a gun.

Ten years came and went, the pain more severe.

I said to my wife," Time to replace it is here."

When the surgery was over, Doc said to my wife,
"He can't ride a horse for the rest of his life."

We own our own farm with a full riding stable,
So horses and riding put food on our table.
I could sell horses and tack, and some money I'd
make,

But to ride one myself was a risk I can't take.
And then it did happen, one night at the sale,
As I stood selling halters inside of the rail.
My wife came up to me with that look in her eye,
She said "There's a horse out back ready to die."
As I walked to the killer pen and looked over the
fence.

There stood a starved gelding whose frame was immense.

His eyes were three inches sunk back in his head, If he were lying down, you would have sworn he was dead

He stood sixteen-one, weighed about four and a quarter.

His hair was three inches and not one-half shorter. A skeleton with hide stood before my own eyes, If he walked through the ring, it would be a surprise.

As the barn door slid open and they led him on in, The auctioneer said, 'Two hundred is where we'll begin."

The kill buyer said, "Two-oh-five's all I'll give." I said, "I'll give two-ten just to see if he'll live." The bids then quit coming, not a sound from the crowd.

The next word was "Sold" he said very loud.

As the trailer backed up to the wood loading gate, I said, "Let's get him home before it's to late." He had to have help to step up to the floor,

But we got him in and then closed the door.
As I drove home that night, I looked back at a glance,
And said, "If he lives, we'll call him Last Chance."
Well, we made the trip home, and he lived through
the night.

When the vet came next morning, he said, "What a sight."

We floated his teeth and trimmed all his feet, Gave him wormer and thiamin and a little to eat. My vet said his heart was as strong as a drum, If we brought him "long slowly" the rest may just come.

Well, his weight starting coming and his health soon returned.

He showed us his love he must have thought that we earned.

He would winny and nicker as I walked to the shed, As if to say, "Thanks, "cause of you, I'm not dead." He would stroll the whole place without being penned,

He'd come when I call, just like man's best friend.

Three months had gone by since the night of the sale.

My wife had him tied on our old hitchin' rail. I asked her, "What's up?" as I just came outside. She said that "I't's time to see if he'll ride." She threw on the blanket, saddle, bridle and said, "The worst that could happen, I'll get tossed on my head."

As her seat hit the leather, he stood like a rock. With a tap of her heels, he started to walk. He reined to the left and he reined to the right, The bit in his mouth he sure didn't fight. He did what she asked without second thought. She cantered him on and not once he fought. When she returned from the ride with a tear in her eve.

She said, "He's the one, would you like to try?"

I thought to myself as I stood at his side,
If this giant's that gentle, why not take a ride?
It had been a long time, but the look on his face,
Said, "Hop on, my good friend, let's ride 'round this place."

NEWS FROM OUR MEMBERS

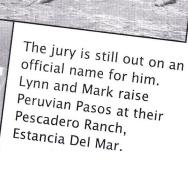
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Corgratulations to Drena and Killian Dill on their new addition to their Arabian herd, a colt named RWR Sirokko, born July 13.



George Sublett took a bad spill off his horse recently and incurred serious head injuries. Our best wishes for a speedy recovery!





One Chance in a Million, continued

We rode 'round the yard, then out through the gate, This giant and me, it must have been fate. He gave me back part of my life that I lost, But no money on earth would buy him from me. You see, we share something special, this gelding and me.

A chance to start over, a chance to be free. And when the day comes that his heart beats no more,

I'll bury my friend just beyond my back door. And over his grave I'll post a big sign, "Here lies Last Chance, a true friend of mine."



Congratulations to Bill



Kahrau and Helga Herrera who tied the knot with a lovely ceremony on June 3 in Daly City.

Notes From the Trail Nag

SAN BRUNO MOUNTAIN MASTER PLAN UPDATE

Adda Quinn

The Draft version of the San Bruno Mountain master Plan was put out for review in May and a hearing held June 27, 2000. 17 people attended, 12 of whom spoke. Of these 12, 3 spoke in favor of trails; 3 were against new trails. SMCHA provided the following comments to the County about this proposed plan. While our experience with this master planning process was infinitely better than the last one with Edgewood Park, as you will see by the comments below, interfacing with public agencies about horse access must become our life's work!

"Negative Bias in Data Leads to Erroneous Conclusion"

Sections 5-2 and 7-11 discuss a poll of citizens of four adjacent urban cities taken to determine recreation interests for the Mountain (Daly City, Colma, South San Francisco, and Brisbane). Few respondents expressed interest in horseback riding. However, there are few, if any, private horses and only one public stable over on the coastside without direct connection with the Mountain in any of these communities. Such a survey is analogous to polling the citizens of Timbuktu, Wadi el Kebir, and Tissalit in Saharan Africa whether they are interested in sailing!

Presumably, County Parks are for the benefit of all of the citizens of the County, not just adjacent communities. Most horses are kept in more agrarian cities or the unincorporated part of the County. Because of the island nature of the Mountain totally encircled by urban development, we would venture to say that virtually all horses must be brought in by trailer to ride on the Mountain. Was any attempt made to ascertain interest from other communities where horses live, or from the numerous horsemen's groups that are well known to the County? The SMCHA never received a survey.

Equestrians collected 142 signatures in support of expanded riding activities on the Mountain. We faxed these signatures with a cover letter to the consultant in July 1998 and have twice since provided the same information to the County during this process. This effort has not been acknowledged in the Draft Master Plan. In both Public Workshops March 7, and June 25, 1998, equestri-

ans had previously requested consideration of some very simple needs (see Appendix 2 7-8 and Appendix 3 7-12):

- Designation of a staging area for rig parking (only 3-4 rigs)
- Maps that show equestrian/hiking routes and rig parking
- Expanded trail access for horses as new trails are developed
- Potential horse camp

Ernst Meissner and I rode the Mountain last week on June 22, 2000, to determine whether the needs that equestrians had expressed during this planning process were legitimate. We found no designated rig parking, had to rely on phone calls to the rangers to get to the appropriate spot where we could park, and again for help locating the trail head. Neither trail signs nor maps designated equestrian use. We concur that concerns raised by equestrians in these Public Workshops are justified

Further, in Appendix 6 equestrian access was discussed at length in Executive Interviews. I have spoken to County staff several times during this process and asked if in their opinion equestrian needs were being addressed. Answers: Yes. Finally, the Chairman of the County's Trails Advisory Committee, Ernst Meissner, met with County staff on behalf of horsemen to assure our interests were being addressed. Yet nowhere in the Draft Master Plan do we find a single map marked with equestrian routes, or suggestions about rig parking.

How all of this information exchange was then used to draw the disappointing conclusion in 3-17 that our (equestrian) "need(s) have not been demonstrated" is very puzzling, clearly erroneous and frustrating. What more could we have done to communicate these very simple needs to you and have them addressed by the plan?

While we acknowledge that present equestrian use of the mountain is light, part of the reason for that is:

- Current maps do not inform riders that they can even take horses to the Mountain
- No rig parking is available in a park where virtually all horses must be brought in by trailer

- Maps do not indicate where rigs and horses are permitted to go once you get there
- ✓ The trail system available to horses is delightful, but limited in scope

On this latter point, current horse-accessible trails on the Mountain can be covered in about two hours of riding. Trailering horses is a logistically-intensive activity. Two hours is a very short trail experience where livestock is concerned. The thing that equestrians are most excited about in the Draft Master Plan is the proposed perimeter trail and other new trails being considered that could potentially make riding the Mountain much more attractive for us. With an extended trail system, a volunteer horse patrol could augment short staffing mentioned in your text. Mounted patrols could easily cover the entire mountain in 3-4 hours.

We are also concerned about the statement in 3-17 that "...this Master Plan will not change the amount of equestrian use in the Park." We are unclear about what this actually means. As new trails come on line, we ask that they be constructed to expand equestrian access, not limit them as this visionless statement might construe."

After the meeting ended, we were assured by the Park and Recreation Planner, Sam Herzberg, that changes we requested were small, reasonable and will be made. Once the master plan is approved by the Board of Supervisors, components of it will receive intensive planning attention. We will follow planning for trails closely. Many thanks to Leonard Iniguez, Larry Batistioni and others who attended the Workshops and other meetings on the subject, and represented equestrian interests.

Regards from your Trail Nag, Adda Quinn

Our Sincere Condolences

to Pat and Aggie Grady and their family on the tragic loss of their son Daniel.



SMCHA
Welcomes
Our
New Members

Stacey Andrews
Roger Castillo
Rev. Tim Dupre
Sarah and Jim Fries
Roberto Ramirez
James Tucker
Michael Tuite and family
Horst and Caroline Wilmes



DO YOU KNOW THE WAY TO SANTA FE?

by Tanya Rebarchik

Have you ever wondered what it was like to be your horse and travel in a trailer? Or, rather, in a big horse van? Well, let me tell you...

The story started when I was asked to trailer a horse from Woodside to Santa Fe, New Mexico. The horse's owner, Simon, owns the barn where I get to board my horses in exchange for taking care of his. When Simon decided that he was going to live primarily in Santa Fe, he decided it was time to ship his horse, Ginger, out to be with him.



Since I am a complete novice at trailering, I thought it wise to enlist help from Sue Sheehan, since she had been nice enough to haul my horse on countless trips over the past few years. However, when we attempted to load Ginger, a big beefy Quarter Horse, into Sue's little trailer, we figured out that there was

no way she could stand in there without ducking, let alone go all the way to Santa Fe. Simon really wanted me to escort Ginger to her new home, so I called Bob Hubbard Horse Transport, and was told I could ride along with the horse. That sounded good to me, and it didn't even take that much convincing to get Sue to come along, so on May 8, our little adventure began. We met the big truck on Runnymede Road in Woodside at 6pm, ,and Ginger walked right up into what looked like a big stall. However, she wanted to come back out right away, and it took a little persuasion to calm her down. I quickly figured out that the best help I could give the drivers was to stay out of their way! Since only three horses were on board, Ginger got to be in an actual box stall, rather than standing in cross ties. Sue and I got to stay right next to her, making ourselves comfortable on a bale of hay. That is, I got pretty comfortable, poor Sue had a tough time breathing with all the dust and hay flying around. I was actually able to relax and fall asleep, despite the fact that one of the passengers was a Dutch Warmblood stallion who kept whinnying in regular intervals.. The first leg of the journey took us to Riverside, where we arrived at about 2 am. There we switched vans and added five more horses to the load. This time Sue got to ride in the cab - good thing, because I shared the middle compartment of the van with three horses. Ginger got to go into the

biggest stall in the front of the rig, and I took up one of four tie stalls in the middle compartment. So of course there was hay and dust flying - not a good environment for allergy sufferers! I was quite comfortable, since I do not suffer from any allergies, and set up my airmattress on a hay bale and went to sleep. When I woke up we were at the Arizona border, where we got held up briefly because Ginger's paperwork had not been properly filled out by the vet. How embarrassing! A frantic call to the vet's office resulted in a faxed copy of the proper form, and this way we had time to go have some breakfast at a nearby truck stop. The drivers were really nice, and very skilled, not only at maneuvering that huge rig, but also at handling the horses.



Phoenix was the next stop, and three of the horses left us there, one at a beautiful private ranchette, the others at what appeared to be a racing stable. Meanwhile, I had built a little chair out of two haybales, so I sat and looked out the window at the Arizona desert scenery with lots of Saguaro Cacti. Pretty soon we were going

through the mountains to Highway 40. Somewhere between Flagstaff and Albuquerque we stopped for dinner at yet another truck stop. The food was surprisingly good, and there was plenty of it. Ginger was doing fine, munching on hay and drinking plenty of water, and snacking on carrots that I'd sneak her through the stall divider every so often. My "chair " had been fed to the horses, and it was getting dark, so I went back to sleep for a little while. When I woke up, we were close enough to our destination to call Simon, who was to meet us and guide us to someplace from where the big truck could get back on the highway without getting stuck. I looked out the window and in the distance we could see the flames and smoke from the terrible fire in Los Alamos. At about 11 pm, 29 hours from the start of the trip, we arrived at this little road in front of a darling little house, and unloaded Ginger and all our gear. Of course we made a bunch of noise and a lady came running from the little house, curious about all the commotion. She said she thought she was being evacuated because of the Los Alamos fire! After we said good-bye to the drivers and Simon showed them

Santa Fe, continued

how to get back on the highway, Ginger and I followed his truck up the dirt road to the barn. It turned out to be about a half-mile hike, and it seemed much longer in the dark, not knowing where I was going. Ginger was a very good sport, supporting me kindly every time I stepped in a pothole. She didn't even flinch when a large barking dog came running at us. We had no choice but to just keep going, since Simon was unaware of what was going on behind him, and we would have lost what little light we got from his headlights. Of course the flashlight was safely tucked away in my bag, which was in the truck! Arriving at the barn, we put Ginger in her new paddock ,showed her the water and watched her go straight for some food on the ground. The journey had not affected her appetite at all.



The next four days made the long trip totally worthwhile (in my opinion, anyway)! We got to stay in Simon's office/guest house, a great little adobe house very close to downtown Santa Fe. We spent the next four days ex-

ploring Santa Fe, admiring all the beautiful Indian jewelry and art galleries, and of course we went to visit Ginger, who was settling in nicely. We got to meet the owner of the barn , Pat Porter, son of the Photographer Eliot Porter. Pat is a Farrier, and does some beautiful ironwork, such as fireplace tools with horsehead handles. It was a treat to meet him and his horse Clovis, the trick horse. They both had fun showing off in front of the visitors:

Pat would go hide his hat, and Clovis would go find it and bring it back to him. Then Pat had Clovis lay down, and sat on his belly, rode without tack, and at one point Pat sat under Clovis, between his hind legs and was scratching Clovis' belly. What a sight! That was truly natural horsemanship! That day I found that it was probably a good thing that I hadn't come with a trailer - I would have ended up with another Peruvian Paso. In one of the corrals there was this little scraggly chestnut horse, and Sue said it looked like a Paso! I asked Pat, and sure enough, it was a Peruvian Paso. Someone had bought him at an auction, and now he was supposedly for sale. I still think about that little guy, I wish he wasn't so far away.

After our lovely little Santa Fe vacation, Sue and I rented a car and drove to Denver and flew home from there after a couple of days in Colorado Springs. There I discovered a pamphlet on "riding through the Garden of the Gods". The garden of the Gods is a beautiful park with fantastic rock formations and



gorgeous views of the mountains. Riding through it seemed like a great idea. Well, we made our reservations at the "Academy Riding Stables". Upon arrival we were assigned our horses - Sue ended up with a huge white draft horse named Dolly, who

had two speeds - slow and stop. Uh-oh, I thought, this was going to be interesting. Half of the hour spent riding was taken up by the trip along a residential road that lead to the park. I think I could have walked backwards faster than these horses moved! Once in the park, we got to ride around the perimeter and catch barely a glimpse of the rock formations. We saw a lot more by car and on foot later on than we did on this ride! The horses still managed to kick up enough red dust to cover us with an even layer. I quess we should have known better.

The next day Sue got even with me for "making her" go on that ride - we drove up a long windy mountain road (one of my least favorite things) part-way up Pikes Peak, which is around 14,000 feet. At 11,000 feet, we stopped at a lodge for a snack and it started snowing! (snow is my very least favorite thing!) They closed the road leading to the top, so to my relief we got to go back down the mountain, which by now was socked in with fog. The snow and sleet got worse as we made our way towards Denver. Sue had

one more quest to complete: In 1959 she took part in the Girl Scout Senior Roundup right there in Colorado Springs, and there was supposed to be a sign somewhere, commemorating the event. We inquired about it at the Airforce Academy's gift shop, and someone actually knew what Sue was talking about! So we got on the freeway, and - lo and behold- there was the sign, right next to the freeway! With that mission accomplished, we headed north, made it to Denver before dark, and with a sigh of relief we sank into the hottub at the Radisson hotel. I want to say thank you to Sue being such a great travel huddy.

for being such a great travel buddy!

STANDARDS

From the internet, submitted by Virginia Magliano-Darrow

The US standard railroad gauge (distance between the rails) is 4 feet 8.5 inches. That's an exceedingly odd number.

Why was that gauge used? Because that's the way they built them in England, and English expatriates built the US railroads.

Why did the English build them like that? Because the first rail lines were built by the same people who built the pre-rail-road tramways, and that's the gauge they used.

Why did "they" use that gauge then? Because the people who built the tramways used the same jigs and tools that they used for building wagons, which used that wheel spacing.

Okay! Why did the wagons have that particular odd wheel spacing? Well, if they tried to use any

other spacing, the wagon wheels would break on some of the old, long distance roads in England, because that's the spacing of the wheel ruts.

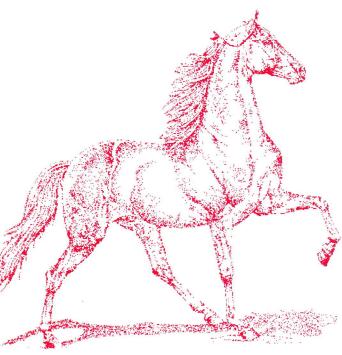
So who built those old rutted roads? The first long distance roads in Europe (and England) were built by Imperial Rome for their legions. The roads have been used ever since.

And the ruts? Roman war chariots first made the initial ruts, which everyone else had to match for fear of destroying their wagon wheels and wagons. Since the chariots were made for, or by Imperial Rome, they were all alike in the matter of wheel spacing.

Thus, we have the answer to the original question. The United States standard railroad gauge of 4 feet, 8.5 inches derives from the original specification for an Imperial Roman war chariot.

Specifications and bureaucracies live forever. So, the next time you are handed a specification and wonder which horse's rear came up with it, you may be exactly right.

Because the Imperial Roman war chariots were made just wide enough to accommodate the back ends of two war-horses.



And now, the twist to the story...

There's an interesting extension to the story about railroad gauges and horses' behinds. When we see a Space Shuttle sitting on its launch pad, there are two big booster rockets attached to the sides of the main fuel tank. These are solid rocket boosters, or SRBs.

Thiokol makes the SRBs at their factory at Utah. The engineers who designed the SRBs might have preferred to make

them a bit fatter, but the SRBs had to be shipped by train from the factory to the launch site. The railroad line from the factory had to run through a tunnel in the mountains. The SRBs had to fit through that tunnel. The tunnel is slightly wider than the railroad track, and the railroad track is about as wide as two horses behinds.

So, the major design feature of what is arguably the world's most advanced transportation system was determined by the width of a horse's ass!

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COMPOSTING

Adda Quinn

The following is the second part of a two- part article on Manure Composting (continued from the Spring 2000 issue)

How to Use Compost

Compost can be applied as a soil amendment and fertilizer. It can be incorporated into gardens or spread it on pastures. If used on pastures where horses graze, it should be applied no greater than one-half inch deep to avoid nitrate toxicity (Oregon State). It can be used as a mulch and top dressing around trees and shrubs or in vineyards and orchards. Compost is not very effective as an immediate nitrogen fertilizer, although it will contribute to soil fertility in the long term. Compost should be spread just before or during the growing season when there is little likelihood of immediate rain washing the compost into waterways, and when uptake by plants has the greatest potential (Penn. State and Ontario 1992). If the compost is well cured, it can be used as a potting mix or seed starter. Compost can also be used to cushion the footing in arenas and on trails.

Many counties, states, agricultural extensions and farm bureaus maintain web sites that allow people to track both who has compost available and who wants/needs it through materials exchange programs. Consult your local Waste Management or Landfill Diversion programs (Cal EPA IWMB 1999).

Providing compost for sale to agricultural and nursery users will require laboratory analysis to determine levels of nitrogen, phosphorus and potassium from time to time. Manure compost could replace as much as 15% of the nitrogen, 42% of the phosphorus and 59% or the potassium that now comes from commercial fertilizers (CAST 1996). The positive physical effects of incorporating manure and compost into soil can last for a decade or more (McGill).

Composting can be very advantageous. It may not solve all manure waste disposal problems but it will help reduce the amount of waste created and provide a valuable by-product to use, sell or give away.

Human Pathogens and Compost

"Human pathogens are rarely a concern in farmgenerated wastes" (NRAES 54).

Studies have shown that many pathogens are de-

stroyed by thorough composting if all parts of a compost pile are actively managed for temperature and aeration. Pathogen destruction in a compost pile occurs from a combination of factors including natural competition, predation and antibiotic effects in the pile. Mature composted materials have low levels of pathogenic organisms because compounds that support bacterial growth are broken down into stable substrates in which bacterial regrowth cannot occur (NRAES 114).

Pathogens are organisms (fungus, helminths, virus, protozoa, bacteria) capable of producing infectious disease. Fungi are usually considered to be of minimal health risk (Straub et al 1993). C. tetani is reportedly found in equine manure, but does not represent a source of significant public health risk (NCSU 2000).

Helminths

Many common equine helminths (worms, bots, etc.) are pathogenic to domestic animals but are not pathogenic to man (Straub et al, 1993). Horses are susceptible to more species of internal parasites than any other kind of livestock. Seldom are the outward symptoms of internal parasites evident in the mature horse, so owners may not be aware of infection. Uncomposted horse manure disposed on horse pastures risks spreading internal parasites (McDowell-Hudson/NCU and Ohio State). Fortunately, only a few internal parasites present a problem (ascarids, strongyles, bots, pinworms). Helminths can live for years in low temperature and high moisture conditions.

Viruses

Generally speaking, horse guts do not contain the 120 viruses and constituents of concern in human, dog and cat feces (carnivores and omnivores) (Atwill 1998, Putnam 1983, Davis et al 1996). Most viruses with zoonotic potential (animals infecting humans) are not found in horse wastes. Rotavirus can cause diarrhea in foals but has never been documented spreading to human hosts. Although interspecies transmission of rotaviruses has been demonstrated experimentally, the role of livestock-derived rotaviruses in the epidemiology of human waterborne infection is not known (Acha and Szyfres, 1987). In other countries, the Borna virus has been reported to

be zoonotic (NCSU 2000). Both low temperature and high soil moisture are key to determining viral survival in soil. When soil moisture levels reach 5% for 7 days no viruses are recovered. Virus migration appears to be limited once in the soil.

Protozoa

The USEPA estimates that as many as 150 diseases can be contracted by humans drinking contaminated water or eating fish (BioCycle 1998). The two most common protozoans, Cryptosporidium and Giardia. are not a problem in adult horses (<1%). Recently, several credible research papers have been published which demonstrate conclusively that adult horse guts do not significantly contain cysts of either Cryptosporidium parvum or Giardia duodenalis, the two organisms of greatest human health concern when present in water supplies (Atwill, 1997, Johnson et al 1997, Peng et al 1997). Lactating mares and foals have higher concentrations of these organisms. Considerable controversy exists whether G. duodenalis cysts obtained from livestock can even infect humans (Atwill 1997).

Both of these protozoans are killed at 140°F within 30 minutes. Federal regulations require that sewage sludge be treated at 131°F for 3 days in a compost pile, or 15 days in a windrow. In MSW, 99.9% of cysts were inactivated within 18-hour exposure to 37*C (98*F). Because these pathogens rely on water cycles for life, they should be of little concern in compost piles that are heated and eventually become humus. Because of their larger size relative to viruses and bacteria, cysts are not likely to be mobile through the soil or found in its saturated zones. Once these pathogens are removed from their water matrix and enter soil, they are usually filtered out and die (Straub et al 1993, Godwin et al 1997). Cryptosporidium oocysts appear to die after several hours of being dry (97% in 2 hours) (Robertson et al 1992). Giardia cysts survive only in cool moist conditions unlikely to occur at consistently maintained compost temperatures.

Bacteria

Coliform bacteria are ubiquitous and are necessary beneficial organisms that help most normal healthy species, including man and animals, digest their food. E. coli under certain conditions—such as stress or infections—cause disease in its host or may be

found as a secondary invader to other diseases. Strains that exist in one species generally do not affect others—consequently man's primary concern is for E. coli of human origin and then only if it is found in his food or water - not because of the E.coli itself but because of other germs that may accompany it. While E. coli from a number of species, including humans, can cause intestinal disease under certain conditions, those of equine origin have never been shown to do so. "On concentrated reflection, I can come up with no explanation why the horse should be singled out as a likely source of human disease. On the contrary, among domestic animals the horse is perhaps the least likely to play such a role" (Kessler/Biberstein).

No data currently exist linking the bacteria from horse guts to human infection (Atwill 1997, 1998). The detection of individual pathogenic organisms is a difficult and time-consuming task. In practice, indicator organisms are used instead (Straub et al 1993). It is important to realize that the E. coli referred to during general water quality tests are not necessarily pathogenic strains, but instead are an indicator of general fecal contamination. When used as an indicator of water quality, E. coli refers to the harmless strain of anaerobe that helps maintain normal intestinal functions (Draser et al 1974). Fecal streptococci are also a useful indicator organism, but they are usually less numerous than coliforms in horses. Most indicator bacteria are mesophilic but the combination of mesophilic conditions (34-45° C or 95-113°) and dry soil can be detrimental to survival of bacteria. Freezing/thawing and extremes of pH are also detrimental to bacteria since they prefer near neutral environments. Bacterial survival appears greatest in saturated conditions. Perhaps their major reason for die-off once out of a gut is their inability to lower their metabolic requirement to a lower nutrient availability (Straub et al 1993). Salmonella, pathogenic Escherichia coli, Shigella, Campylobacter and Yersinia are the primary human infectious bacteria of concern (Atwill 1997).

While horses can get Salmonella, it is usually through exposure of contaminated avian droppings in equine food. A horse with Salmonella is a very sick animal and must be treated carefully to disinfect its surroundings and remove manure to avoid spread to other animals. While there are literature studies in

which S. enteritides is linked with shell eggs, and S. typhimurium is linked with cattle, there are no studies linking Salmonella with equine transmission (Atwill 1997). Salmonella thrive in high moisture low temperature. Under composting, growth is limited or strongly inhibited by the activity of compost microflora (Straub et al 1993).

Pathogenic strains of E. coli have not been commonly reported in equine feces, and the prevalence of colibacillosis, even in young foals, is controversial (indicating that pathogenic strains of E. coli aren't significant in horses at all). It is highly unlikely that these strains will be present in equine guts (Yager 2000, NCSU 2000). A study is planned to test this hypothesis experimentally (Atwill 2000).

Shigella spp. Infection is clearly related to sanitation and water quality, but few data exist because of the lack of good analytical methods for their detection. It is believed that Shigella destruction is more rapid than Salmonella in most Municipal Solid Wastes (MSW) sludge treatment for human wastes at temperatures >30*C (Straub citing Feachem et al 1983).

Campylobactyr spp. Diagnosis suffers from a few detection methodologies. Seasonal peak in human sewage occur in May and June, but the organism does not survive well in MSW sewage sludges (Straub citing Jones et al 1990b).

Yersinia spp. is usually associated with raw, digested, and dewatered MSW sludges (Straub citing Metro 1983).

Pseudomonas mallei is present in other countries, but has largely been eradicated in Europe and North America. Rhodococcus equi, a potential pathogen of the severely immune compromised, is found in equine feces but has not been documented as zoonotic (NCSU 2000).

Again, length of time and high temperature were the controlling factors of these bacteria's survivability in composting in human MSW. Even at the center of a compost pile where temperature is most extreme, the number of viable bacteria could be significant (Atlas et al 1987). The regrowth of bacteria is a possibility without sufficient time and heat in compost.

Human pathogens that may be in equine manure are not common relative to other livestock species such as cattle and swine (NCSU 2000, Atwill 1998). While

numerous studies document bacteria in humans, poultry, swine and bovines, virtually nothing exists on equine bacteria. Based on what is currently known, as long as the compost contains no carnivore feces, no feces from sick animals, is solely from horse manure with appropriate N and C amendments. and is properly managed for thermophilic temperature, moisture, and aeration over significant time to achieve pile maturity and curing, there is likely to be only a small probability that bacteria will persist or reinfect. To assure the composition and integrity of your compost pile, laboratory tests should be done periodically to confirm compliance with coliform and Salmonella levels required by regulation. Since the knowledge base on the subject of equine bacteria is scant, Hold Harmless releases are wise for those distributing compost free or for fee.

Regulatory Levels for Pathogens

1986 EPA Water Quality Criteria (USDA) for fecal coliform bacteria are:

1. For bathing, swimming, and other body contact water recreation, based on a minimum of 5 samples taken over 30 days, should not exceed a log mean of 200 per 100 ml, nor should more than 10% of the total samples taken during a 30 day period exceed 400 per 100 ml; and

2.Median concentration should not exceed 14 MPN per 100 ml with not more than 10% of samples exceeding 43 MPN per 100 ml when harvesting shellfish.

3.Total coliform for Drinking Water Standards should be no more than 1 coliform-positive sample/month for systems that analyze <40 /mo, and no more than 5% of samples positive if system analyzes >40/mo. Fecal coliform should be 0.

4.For Livestock Water Supplies <1 fecal coliform or fecal strep/100 ml for young animals; up to 10 fecal coliform and 30 fecal strep/100 ml for older animals.

Following is the current protocol for the State of California to assure pathogen destruction in composing operations. As you have seen, pathogens can be killed in a relatively short period of time at thermophilic temperatures. However, the standard farm practice of curing compost piles for several months should provide additional security against reinfection or pathogen survival since it deprives microflora of

nutrients and ultimately moisture needed to sustain most of them.

The density of fecal coliform in compost products that is, or has at one time been, active compost, shall be less than 1,000 MPN per gram of total solids (dry wt.), or the density of Salmonella spp. bacteria in compost shall be less than 3 MPN per four grams of total solids (dry wt.). To achieve this goal temperature standards must be met: * For sewage sludge compost piles, aerated static piles and within vessels ~50°C and is releasing CO2 at the rate of at least 15 mg/g of compost per day, or the equivalent of oxygen uptake for at least 3 days. Temperature to be tested 12-18" below surface daily during the pathogen reduction period. * For windrow composting: ~50°C and is releasing CO2 at the rate of at least 15 mg/g of compost per day, or the equivalent of oxygen uptake for at least 15 days with minimum of 5 turnings. Temperature to be tested 12-24" below surface daily every 150' during the pathogen reduction period. (Calif. Code of Regs 17868.3)

Plants, Weed Seeds and Compost

Manure nutrient content is highly variable. Heavy grain feeding causes richer manure. High protein concentrates, urea feeds and legume forages increase manure nitrogen levels (McGill U).

Manure is a major source of nitrogen, phosphorus and potassium and furnishes every nutrient needed by plants. These nutrients are present in every forkful of manure, mostly in complex organic forms that slowly release to reduce leaching loss and allow chemical fixation by the soil (McGill U). Manure solids are most easily decomposed when incorporated into a soil. If manure cannot be worked into the soil, avoid spreading uncomposted manure more than one-half inch thick on the ground each year (Oregon State). Manure easily loses its liquids unless it is retained by bedding or stored in a container that does not leak. Major nutrient loss occurs within 48 hours when manure is dried by sun and air, or leached by rain (Barney et al, Hammond-UGa).

The good soil microorganisms (fungi, bacteria, actinomycetes) and macroorganisms (worms, bugs, beetles, etc.) are essentially responsible for the conversion of manure to humus. They decay organic matter by transforming carbon, hydrogen, oxygen, nitrogen, sulfur and other nutrients into proteins,

humic, fulvic and amino acids. Overheating the compost pile will kill these good actors.

There is increasing evidence that enhanced microbial activity in composted soil provides suppression of plant disease and insects, especially soilborne nematodes in vegetable crops of lettuce, cabbage and snap beans. Compost has been shown to promote growth and yields of a gourd, curcurbits, in nematode-infested soils. Potting soil from horse manure has been shown to suppress Pythium and Rhizoctonia. As more scientific work is reported, it is becoming evident that there may be general disease suppression with many horticultural and other crops.

In the US nursery industry, control of diseases such as Phytophthora root rots with compost has been at least as effective as that obtained with fungicides. Suppression of plant pathogens and/or diseases is largely induced during curing. The following bacteria and fungi have been identified as plant bio-control agents in composts:

Bacillus spp.
Enterobacter spp.
Flavobacterium balustinum
Pseudomonas spp.
Streptomyces spp.
Trichoderma spp.
Gliocladium virens

Of increasing interest to researchers and growers is the use of watery compost extracts of compost "teas" prepared from finished composts and sprayed onto plants. Such treatment has been shown to suppress both germination and growth of plant pathogenic organisms (NRAES 114).

In a study conducted on municipal solid waste (MSW) to identify compost maturity, maximum inhibition of weed seed germination and growth of 14 important weed species was found in compost less than 4 months old. The compost was phytotoxic to weed seeds due to high levels of fatty (acetic) acids produced during the composting process. Immature compost applications may be a viable alternative biological weed control method (Ozores-Hampton et al 1999).

In other studies conducted on MSW composted in windrows where thermophilic temperatures of 131°F (55° C) were achieved for 2-3 days, all recovered weed seeds failed to germinate. At lower mesothelic

temperature (34-45° C or 95-113° F) there were significant differences between species in tolerance to temperature. All weed seeds were killed in three days at 55°C. Seeds that survive the composting process do so as the result of localized "cool spots" caused by inefficient turning of the compost. Alternatively, wind blown species could be introduced (Grundy et al 1998).

Seeds that are dry or exposed to the drying effect of warm air will resist higher temperatures and will tolerate dry soil conditions better than when exposed to the same temperature in moist soil found in compost. Even the most heat resistant seeds in one study failed to germinate after exposure to 55°C for 48 hours (Shiralipour et al 1991).

Moisture found in compost may contain leachate that has negative effect on weed germination. The presence of moisture in the compost induces seed death at lower temperatures. Killing temperatures vary inversely with the moisture content of the seed. Moist seeds within a compost pile will be killed at a lower temperature than dry seeds of the same species. (Egley 1990). If proper moisture, temperature and turning occur, evidence indicates that weed seeds should not survive the composting process (Grundy et al 1998). After 4 weeks of composting in windrows, the viability for 12 species of weeds was 0% (Tompkins et al 1998).

In a study where barn animals were each fed 1000 weed seeds, chickens, sheep and horse guts seem to be able to destroy weed seeds more thoroughly than calves and hogs. An average of 14.2% of uninjured seeds was recovered, most within 48 hours of ingestion. Of these, only 6.7% were viable. The uninjured weed seeds were then buried in horse manure where a temperature of 158°F was achieved in 2 weeks. At the end of one month, only velvet weed, bindweed, peppergrass, sweet bindweed and sweet clover were viable. The rest of the weeds were partially decomposed. Only the bindweed and sweet clover were viable at the end of the second month, but after 3 months only one weak bindweed seedling was obtained (1% viability). All other seeds were dead and had started to decompose at 4 months (Harmon et al 1934).

The majority of seeds recovered from pastured livestock are the common and desirable forage species of grasses and legumes. (Dore et al 1942).

Other factors

Odor

Daily maintenance of horses in confined settings is very labor intensive to maintain sanitary conditions for the housed animals. Once manure and dirty bedding have been removed, wet areas may need to be treated with lime to maintain safe, clean and odorfree conditions (Wheeler et al 1995). Urine should not be allowed to pool in stalls. Urine volume production is related to protein levels in the diet. Hedges that screen the stable area help reduce odors and deep dust and noise down (UC 1984).

Dust

Dust can be corrosive. BMPs recommend periodic sprinkling of active horse areas with water to control dust. In the arid Western US, this practice has the added advantage of providing moisture needed to provide nutrients needed for microflora to break down residual manure constituents. The EPA suggests that dust particles containing manure and its nutrients have the potential for airborne transport into water bodies (EPA CAFO 1999).

Insects

Sanitary practices must be constantly provided. Fresh bedding for confined animals should be added following manure removal. Simply adding fresh bedding and allowing manure and soiled bedding to accumulate in horse stalls results in dirty animals, provides fly-breeding conditions and may be unhealthy to horses (Graves, 1987). Keep garbage and manure collected and in fly-tight areas, especially during warm months. Flies lay eggs in warm, moist, decaying vegetation and manure. Eliminate breeding places by covering all garbage, grass clippings, weed piles, manure or compost so flies cannot breed in large numbers. Do not allow standing water near paddocks or manure piles by providing proper drainage everywhere on property. Flies can breed in soil rich in organic matter and emerge from soil depths as great as 1.5 feet. Screen places where you do not want flies to go. Use baited or light traps and fly paper. (Univ. Vt.) Use chemical control where appropriate. (McDowell-Hudson/NCU for specific treatment of various fly pests). For those interested in use of birds, bats and more environmentally friendly fly management, excellent resources are available (Blickle (b) 1999, UC 1984).

Rodents

For every mouse killed by a chemical poison, potentially a valuable bird of prey (owl, hawk, etc.) will be effected. Rodents may carry diseases (bubonic plague, Hanta virus, rabies) which can be transferred to humans or horses. Grain rooms and haylofts attract rodents. To discourage these pests, store grain in rodent proof containers.

Coyotes, Fox, Crow, Badgers

A host of scavengers potentially wait to descend on compost piles. To the extent that they may eat rodents, they are helpful. However, many of them may prove to be unwanted guests. Dogs, fox, coyotes are caprophilic or dung eaters so may technically be considered decomposers. Their presence at your house or farm may threaten other animals or create a nuisance.

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Bibliography

Background CAST. 1992. Water Quality: Agriculture's Role. Task Force Report Summary 120. December by Council for Agricultural Science and Technology. Pg. 6. Hammond, C., B. Segars, and C. Gould. "Land Application of Livestock and Poultry Manure". University of Georgia Extension. Nutrient loss information. www.bae.uga.edu/extension/pubs/c826-cd.html, and /c827-cd.html, etc.

BioCycle (monthly magazine) 419 State Avenue Emmaus, PA 18049 (610)-967-4135 Biocycle@jgpress.com and Composting for Manure Management edited by BioCycle, 1998. Pg. 11.

EPA 305-F-99-099. May 1999. "CAFO Permit Requirements-Horses".

USDA. 651.0100 Agricultural Waste Management Field Handbook.; 651.0107 criteria and standards; 651.0403 animal waste characteristics (4-17 for Horse); 951.0605 application to fields and forage; 651.0702 animal holding and manure management. www.nrcs.usda.gov/awmfh.html

Horses and Their Manure APHIS. The USDA's Role in Equine Health Monitoring. 1996. http://www.aphis.usda.gov/vs/ceah/cahm/. 1998a. National Animal Health Monitoring System, Part I: Baseline Reference of 1998 Equine Health and Management. http://www.aphis.usda.gov/vs/ceah/cahm/. File eq98pt1.pdf October 15, 1998. 1998b. National Animal Health Monitoring System, Part II: Baseline Reference of 1998 Equine Health and Management. http://www.aphis.usda.gov/vs/ceah/cahm/. File eq98pt2.pdf October 15, 1998. U.S. Department of Agriculture, Animal and Plant Health Inspection Service.

ASAE. 1998. ASAE Standards 1998. ed. American Society of Agricultural Engineers, St. Joseph, MI.

Ohio State Univ. Extension Services. Ohio Livestock Manure and Wastewater Management Guide Bulletin 604 "Horses". www.ag.ohio-state.edu/~ohioline/b604/b604_11.htm King, Marcia. 1997. Manure Management. Horse Interactive, October 1997. Ohio State University. 1992. Ohio Livestock Manure and Wastewater Management Guide. Bulletin 604. R. James. Ohio State University Extension. Factsheet AGF-212-95 "Horse Manure Management-Preventing a Solid Nitrogen Deficiency". http://ohioline.ag.ohio-state.dcu/agf-fact/0212.htm

NRAES. On-Farm Composting Handbook (NRAES-54), 1992 and Field Guide to On-Farm Composting (NRAES-114), 1999 Northeast Regional Agricultural Engineering Service Cooperative Extension 152 Riley-Robb Hall Ithaca, NY 14853-5701 (607) 255-7654 nrraes@cornell.edu

Putnam, R., 1983. "Carrion and Dung: the decomposition of animal wastes". The Institute of Biology's Studies in Biology No. 156. Pp. 6 and 28.

Michigan Dept. of Agriculture (MDA). Manure Application to Land. Grazed forage = manure deposition http://www.mda.state.mi.us/right2farm/manapp.html Equine pasture behavior returns manure nutrients to the soil. Nitrates poison pastures. Also: http://ose.orst.edu/dept/infonet/soilfert.htm

Barney, S., P. Davis, N.R. Deuel, F.E. Gilman, J. Hodson, B.A. Marriott, J.D. Minnick, T.F. Mitchell, J.R. Mitchell, E. Poole, E.S. Taylor, 1990. Good

Neighbor Guide for Horse-Keeping: Manure Management. New Hampshire Department of Environmental Services, University of New Hampshire Cooperative Extension, New Hampshire Department of Agriculture, U.S. Department of Agriculture, Soil Conservation Service.

Colorado State University. 1996. Management of Horse Manure: A Renewable Resource. Colorado State University Cooperative Extension, Fort Collins, CO.

D. Godwin and J. Moore. 1997. Manure Management in Small Farm Livestock Operations. EM8649 Oregon State Univ. Ext. Services. www.smallfarms.orst.edu/

Atwill, Dr. Rob DVM UC Davis Tulare Campus in conversation with the author in 1998. Confirmed by State of California Toxicologist for Dept. of Fish and Game Dr. Mike Rugg in meeting 1998 St. Helena CA.

Why Compost? CBARCDs. Equine Facilities Assistance Program of the Council of Bay Area RCDs 1301 Redwood Way Suite 170 Petaluma, CA 94954 (707) 794-1242 in cooperation with the USDA Natural Resources Conservation Service and the University of California Cooperative Extension. Resource Conservation Districts (RCDs) are non-regulatory, special districts governed by a volunteer board of directors. In addition to educational programs, RCDs provide landowners and the general public with technical assistance in natural resource management. There is probably one in your area. Gibbs Ferris wrote many of their papers.

Blickle, A. (a) 1999. Horses for Clean Water. "How to Compost and Use Horse Manure". http://members.aol.com/arblickle/tipsheets/ Composting.html

Compost Constituents: Recipe for Pile Management University of California. 1995. "Compost Production and Utilization: A Growers Guide"
Publication 21514. Division of Agriculture and Natural Resources. 6701
San Pablo Ave. Oakland, CA 94608-1239 1-800-994-8849 http://danrcs.ucdavis.edu

National Composting Council (703) 739-2401

Auvermann, B., L. McDonald, R. Devin and J. Sweeten. June 1999. "Composting Horse Manure" B-6084. Texas A&M University System, Texas Agricultural Extension Service. http://amarillo2.tamu.edu/amaweb/auvpub.htm

Chen, Y. and Y. Inbar. 1993. Chemical and spectro analysis of organic matter transformation during compost in relation to compost maturity". Sci. and Engrg of Composting. Ohio State U. Pp. 551-600.

Ibid.: Putnam p. 25, Blickle (a).

Ohide. B. 1998. America's Horse Green Horse column "Composting Concepts: Apply the 3 Rs-recycle, reduce and reuse". P 62.

Eibs, M. "What to do with all that animal manure you're collecting" http://www.horseweb.com/hw_articles/compost.htm (backyard recipe).

Calif. Code of Regs. Title XIV Div 7, Ch. 3.1 "Composting Operations

Regulatory Requirements.

Where to Compost? Ibid.: CBARCDs, Auvermann et al, BioCycle, APHIS, USDA.

B.C. Government. 1998. Manure Management Chapter 8, Horse Owner. Ministry of Agriculture and Food, Planning for Agriculture. British Columbia Government.

EPA. 1998. Feedlot Industry Sector Profile: 6.0 Horses. Office of Water. And, USEPA. 1994. Pollution Control for Horse Stables and Backyard Livestock. Rural Nonpoint Source Management. U.S. Environmental Protection Agency, Region 6, Water Management Division, Water Quality Management Branch, Dallas, TX. Publications Division, Washington, DC.

Compost Methods Ibid.: BC Govt, CBARCDs, Auvermann et al, BioCycle, NRAES. www.terrene.org

USDA. 1997. Horses: A Common Sense Approach. U.S. Department of Agriculture. Spring. 1997.

When is Compost Ready? Ajwa, H. A., and M. Tabatabai, 1994. "Decomposition of different organic materials in soils". Biol. Fertil. Soils. Vol. 18. Pp. 175-182.

Ibid.: Auvermann, CBARCDs.

Ozores-Hampton, M., P. Stoffella, T. Bewich, D. Cantliffe, and T. Obreza. "Effect of Age of Co-Composted MSW and Biosolids in Weed Seed Generation". Compost Science and Utilization, Winter, 1999. Pp. 51-57.

How to Use Compost Ibid.: Oregon State U., CBARCDs.

Penn. State Univ. "Manure Management". http://www.inform.umd.edu/ EdRes/Topic/AgrEnv/ndd/watermgt/MANURE_MANAGEMENT. htm

Ontario Ministry of Agric., Food and Rural Affairs. 1992. Factsheet: Land Application of Liquid Manure in an Environmentally Responsible Manner. http://www.gov.on.ca/omafra/english/livestock/swine/facts/92-164.htm

California Integrated Waste Management Board. "Compost - It's a Natural, A Farmers Field Guide to Compost Products and Use" 8800 Cal Center Drive Sacramento, CA 95826.

CAST. 1996. Integrated Animal Waste Management, Task Force Report No. 128 November by Council for Agricultural Science and Technology.

McGill Univ. by W. Way. "Perishability and Profitability of Manure". Physical effects of manure on soil last a decade. http://www.eap.mcgill.ca/MagRAck/SF/July%2087%20B.htm

Pathogens Ibid.: NRAES, BioCycle, Ohio State, Atwill 1998, Putnam, USDA, Calif. Code of Regs.

Straub, T., I. Pepper and C. Gerba. 1993. "Hazards from Pathogenic Microorganisms in Land-Disposed Sewage Sludge". Reviews of Environmental Contamination and Toxicology, Vol. 132. Pp. 55-89.

Davis, J. and A. Swinker. 1996. Horse Manure: A Renewable Resource. Livestock Series Management #1.219. Colorado State University Extention. www.colostate.edu/Depts/CoopExt

NCSU. 2000. Emails between Carol Galloway of EPA to Dana Cole of the Animal Waste Management Programs at North Carolina State University Dept. of Biological and Agricultural Engineering.

McDowell Agsource prepared by Larry Hudson, Extension Animal Scientist. 1998. "Internal Parasites of Horses" http://mcdowell.ces.state.nc.us/newsletters/horse/toc/may98.htm

Yager, Dr. Janice, PhD Toxicologist. March 1, 2000. Conversation with author on the potential for pathogenic e.co!i in horse guts.

Acha, P. and B. Szyfres. 1987. Zoonoses and communicable diseases common to man and animals. Washington, DC: Pan American Health Organization.

Atwill, Dr. Rob, UC Davis Tulare. Information paper 1997. "Pathogens excreted by livestock and transmitted to humans through water".

Kester, Wayne O. D.V.M. Brigadier General, U.S.A.F. (VC) Retired Executive Director, American Association of Equine Practitioners at the 22nd Annual Convention of the A.A.E.P./ Dr. Ernest L. Biberstein, D.V.M., Ph.D. Professor of Microbiology School of Veterinary Medicine University of California Davis. California 95616

Johnson, E., E. Atwill, M. Filkins, and J. Kalush. 1997. "The prevalence of shedding of Cryptosporidium and Giardia spp. based on a single fecal sample collection from each of 91 horses used for backcountry recreation." Journal of Veterinary Diagnostic Investigation. Vol. 9. Pp. 56-60.

Ford, K., A. Swinker, J. Traub-Dargatz, and J. Cheney. 1997 and JEVS 18 (1) 1998. "The Prevalence of Cryptosporidium/Giardia in the Trail Horse Population Utilizing Public Lands." Proceedings of 15th Equine Nutritional Physiology Symposium. Pp. 223-237.

Peng, M.,1 L. Xiao,2 A. Freeman, 2 M. Arrowood, 2 A. Escalente, 2 A. Weltman,3 C. Ong, 4 W. MacKenzie, 2 A. Lal, 2 and C. Beard 2 . Oct.-Dec. 1997. "Genetic Polymorphism among Cryptosporidium parvum Isolates: Evidence of 2 Distinct Human Transmission Cycles." Emerging Infectious Diseases. Vol. 3. No. 4. Pp. 567-573. University of Michigan 1, CDC Atlanta 2, PA Dept. of Health 3, University of British Columbia 4.

Robertson, L., A. Campbell, and H. Smith. 1992. Survival of Cryptosporidium parvum Oocysts under Various Environmental Pressures. Applied and Environmental Microbiology, November, p. 3494-3500.

Draser, B. and M. Hill. 1974. Human Intestinal Flora. The Distribution of Bacterial Flora in the Intestine, p. 36-43. London: Academic Press.

Atwill Dr. Rob, DVM UC Tulare. March 2000 proposal to Bay Area Barns and Trust to fund study of horse manure for pathogenic E. coli.

Atlas, R. and R. Bartha. 1987. Ecological aspects of biodeterioration control: soil, waste, and water management. Microbial Ecology, 2nd ed.

Benjamin/Cummings Publ Co. Menlo Park CA pp. 367-400.

Plants and Weed Seeds Ibid.: McGill, Hammond-UGa, NRAES, Ozores-Hampton, Barney et al.

Oregon State Univ. Extension Services "Fertilizing for Profit: Tips for Small Acreages in Oregon". http://www.netcnct.net/community/oacd/fs12fert.htm nitrate poison and spreading no more than Π inch thick

Grundy, A., J. Green, and M. Lennartsson. "The Effect of Temperature on Viability of Weed Seeds in Compost". Compost Science and Utilization, Summer, 1998. Pp. 26-33.

Shiralipour, A. and D. McConnell. 1991. "Effects of compost heat and phytotoxins on germination of certain Florida weed seeds. Soil and crop Sci. Fla Proc., 50: 154-175.

Egley, G. 1990. "High temperature effects on germination and survival of weed seeds in soils". Weed Science, 38: 429-435.

Tompkins, D., D. Chaw, and A. Abiola. "Effect of Windrow Composting on Weed Seed Germination and Viability". Compost Science and Utilization, Winter 1998. Pp. 30-34

Harmon, G., and F. Keim. 1934. "The Percentage and Viability of Weed Seeds recovered in the feces of Farm Animals and Their Longevity when Buried in Manure." American Society of Agronomy Vol. 26. Pp. 762-767.

Dore, W., and L. Raymond. 1942. "Pasture Studies XXIV: Viable Seeds in Pasture Soil and Manure". Scientific Agriculture Vol. 23 No. 2. Pp. 69-79.

Zucconi, F., A. Pera, M. Forts and M. de Bertoldi. 1981. "Evaluating toxicity of immature compost". BioCycle, 2(2):54-57.

Other Factors

Wheeler, G., and A. Cirelli. 1995. Animal Waste Management for the Horseowner. Fact Sheet 95-11, University of Nevada Cooperative Extension, Lincoln, Nebraska.

UC Suburban Rancher. 1984. "Manure and Waste Management for the Horseowner" by Ellen Nelson. Leaflet 21397. Also Cirelli, A. Jr., and B. Cloud. 1994. Suburban Horse Keeping. Fact Sheet 94-09. University of Nevada Cooperative Extension.

Graves, R.E. 1987. Animal Manure: Manure Management for Horses. PENpages Number: 0870177. Pennsylvania State University Agricultural Engineering Department.

Univ. VT Ext. "Houseflies". Entomology Leaflet 119. http://ctr.uvm.edu/ctr/el/el119.htm

Ibid.: McDowell-Hudson/UNC, EPA.

Blickle, A. (b) 1999. "Fight Nature with Nature: Environmentally Friendly Insect Control for Horse Farms". Horses for Clean Water.

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