

RUTGERS UNIVERSITY EQUINE SCIENCE QUARTERLY



From Our Stable To Yours
Winter 2025

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New Jersey Agricultural Experiment Station

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The Rutgers Equine Science Center hosted its 2024 "Evening of Science & Celebration" on Thursday, November 14th, 2024.

The Evening of Science and Celebration is an opportunity to unite equine professionals, horse owners,

farm owners and barn managers, educators and students, 4-H members, and all equine enthusiasts for the purpose of learning about current projects and ongoing research initiatives being conducted at the Equine Science Center.

From The Clubhouse



**Have you signed up
for any of our “Horse
Management Seminar”
events? There is still
time so register today!**

Dear Friends,

Wishing everyone a Happy New Year and hoping you all will be healthy and prosperous in 2025!

We at the Equine Science Center have been busy but have also taken some downtime to reflect and recharge as we move into the new year.

Our Evening of Science & Celebration was a huge success, with a great talk by Dr. Sue McDonnell from the University of Pennsylvania. Be sure to check out the story, and to see some of the great pictures from the event, starting on the **Front Page**.

Dr. Amy Lynn Butewicz was awarded the 2025 “Spirit of the Horse” award for her many years of commitment to the equine industry, and for her steadfast support of equine education to our 4-H and college students. Fostering the next generation of equine enthusiasts, competitors, and researchers is how the New Jersey equine industry will continue to be one of the strongest across the United States.

The weather has been cold, so please look at our Fact Sheets on winter horse care to ensure that your equids are kept comfortable in the cold. You can view previews on **Page 18**, and click on the image to take you right to the Fact Sheet!

Dr. McKeever and I finished up the fall semester with our “Topics in Equine Science” class. We had a variety of guest speakers, great topics, and participation by our students. We also shared all of the lectures with a colleague, Dr. Sarah White-Springer who shared our class

remotely to Texas A&M. Thanks to all who gave lectures for us!

Before I knew it spring, and our busy schedule was already upon us. I taught once again in the New Jersey Agricultural Leadership Development Program. Giving the group an overview of the importance of the New Jersey equine industry has become a great way to meet and hear from those interested in New Jersey agriculture. We also treated the class to a treadmill demo at the Equine Exercise Physiology lab, which everyone loved.

On January 30 we will trek to Congress Hill Farm to visit the Landy family; watch harness horses in training; and to visit the home of Special Strides, where we recently conducted our research using Equine Assisted Activities to benefit veterans with PTSD.

February 1 will be a fun-filled day with our “Horse Management Seminar: Live!”. A day packed with equine education, we will have guests from around the country join us to speak about topics such as “Emergency Preparedness: Many Teams...One Mission” by Eric H. Martin, Operations & Training Officer - Middlesex County Office of Emergency Management; “Small Farm Pasture Management” by Laura Kenny, Penn State Cooperative Extension; “Evaluating Pain in Horses” and a follow-up to that, “Evaluating Pain in Horses while Riding” by Dr. Kris Hiney, Oklahoma State University; “Basic Saddle Fitting to Reduce Pain in Horses” by Beth Rera, Master Saddle Fitter, Journeyman Farm; and “Health & Management of US Senior Horses” by Dr. Alisa Herbst, Rutgers University.

There is still time to register, so take a look at the **Page 3** for the link to learn more.

We will also see the return of the “Horse Management Seminar: Webinar Series” on three consecutive Tuesdays starting on February 11. The webinars are free to attend, you just have to register. For more information about these, please take a look at the **“From The Lab”** section.

Finally, we hope to see you all the NJ Junior Animal Science Symposium on Saturday, March 29 where I will be giving a lecture on “Careers in the Equine Industry” (**Flyer on Page 15**), and on Ag Field Day at Rutgers Day on Saturday, April 26th!

With our jam-packed schedule of events, we hope that you will be able to join us for something.

Best,
Karyn

PARTNERS



New Jersey Farm Bureau's primary purpose is to represent the overall interests and improve the financial well-being of farmers and our \$800 million industry. NJFB activities are supported through voluntary membership and annual dues. Members have access to:

- Staff assistance on farming issues and regulatory problems.
- Educational workshops on topical issues such as farm labor, wildlife damage, and zoning.
- Weekly updates on legislation news and regulations affecting all aspects of farming.

It pays to be a NJ Farm Bureau member! For a full list of membership levels and benefits, or to sign up, visit: www.njfb.org.



UMH Properties, Inc., is a real estate investment trust that owns and operates manufactured home communities in seven states throughout the northeast.

UMH has been in business since 1968, operating as a public company since 1985. Owning a portfolio of over 90 manufactured home communities, housing approximately 15,700 home sites.

In addition, owning over 810 acres of land for the development of new sites. It is our mission as a company to provide the best quality affordable home for the hard working residents of Pennsylvania.

UMH communities are perfect for residents of all ages, let us help up you find your dream home today.

For more information about UMH Properties, Inc., please visit: www.umh.com



The New Jersey Department of Agriculture (NJDA) is an agency which oversees programs that serve virtually all New Jersey citizens. One of the Department's major priorities is to promote, protect and serve the Garden State's diverse agriculture and agribusiness industries.

In addition to the programs we offer to support production agriculture, NJDA also manages programs that feed schoolchildren, distribute surplus federal foods to soup kitchens and pantries that serve our needy citizens, conserve precious soil and water resources, protect farmland from development and preserve it for future agricultural use, expand export markets for fresh and processed agricultural products, and promote our commercial fishing industry, and administer the complete program of agriculture, food and natural resource education, which includes the State FFA Association.

For more information about NJDA, please visit: www.nj.gov/agriculture



Boehringer Ingelheim Animal Health is the second largest animal health business in the world, with presence in more than 150 countries, and a significant presence in the United States, with more than 3,100 employees in places that include Georgia, Missouri, Iowa, Minnesota, New Jersey and Puerto Rico.

The lives of animals and humans are interconnected in deep and complex ways. We know that when animals are healthy, humans are healthier too. Across the globe, our 9,700 employees are dedicated to delivering value through innovation, thus enhancing the well-being of both. Respect for animals, humans and the environment guides us every day. We develop solutions and provide services to protect animals from disease and pain. We support our customers in taking care of the health of their animals and protect our communities against life- and society-threatening diseases.

For more information about Boehringer Ingelheim Animal Health, please visit: www.boehringer-ingelheim.us

UPCOMING 2025 EVENTS

Horse Management Seminar Live!

Saturday, February 1, 2025

Cook Student Center
Rutgers, The State University of NJ
New Brunswick, NJ

go.rutgers.edu/2025HMSLiveReg

Horse Management Seminar: Webinar Series

Tuesday, February 11, 18, 25, 2025

Topics Include:
Farm Management on Feb. 11th
Nutrition on Feb. 18th
Horse Health & Welfare on Feb. 25th

go.rutgers.edu/2025VirtualHMSReg

Junior Animal Science Symposium

Saturday, March 29, 2025

Cook Student Center
Rutgers, The State University of NJ
New Brunswick, NJ

amelia.minervini@rutgers.edu

2025 Ag Field Day At Rutgers Day

Saturday, April 26, 2025

Red Barn - Cook Farm
College Farm Road
New Brunswick, NJ

kylehart@njaes.rutgers.edu

For more events, visit our website @ esc.rutgers.edu

The 2024 Evening Of Science & Celebration Spotlights Research And Brings Together Friends For A Night Of Festivities

Continued from pg. 1

The night opened with Dr. Karyn Malinowski, Founding Director of the Equine Science Center, who gave her yearly update on the state of the Center and gave an overview of the accomplishments that have occurred over the last year.

Melanie Farrell, a Gloucester County 4-H member, was this year's 4-H Horse Project presenter.

Ms. Farrell is 15 years old and in 9th

grade at the Gloucester County Institute of Technology, in the Engineering program. She has been in 4H for seven years, mainly in the Equine Science club.

She competed in the Eastern National 4H Round-Up with the New Jersey team, and was in the communications group, giving a presentation about the mounted police. Her presentation, "Saddled for Duty," earned her 3rd place at the competition.





Keynote speaker Dr. Sue McDonnell (dressed in a plaid jacket) poses with representatives from the Rutgers Equine Science Center, Department of Animal Sciences, Office of Development & Alumni Engagement, and the Dean of Research and Graduate Education for SEBS/NJAES.

This year's keynote, Dr. Sue McDonnell from the University of Pennsylvania, joined the Center to present "All Stressed Out: What's the Problem." Her talk focused on general concepts based on behavior science along with practical tips for reducing stress based mostly on experience.

"Inherent to traditional domestic management of horses are several potential sources of stress," said Dr. McDonnell, "either alone or in combination, these sources likely contribute to the high incidence of health and behavior problems."

After undergraduate and graduate training

in both human psychology and animal behavior, including Ph.D. and Post Doctoral training in equine physiology and behavior, Dr. McDonnell has been at the University of Pennsylvania School of Veterinary Medicine's New Bolton Center.

Her work has included research, teaching, and clinical service focusing on equine behavior and welfare. Among her proudest honors are AAEP's 2011 Stubb's Award for contributions to equine veterinary medicine by a non-veterinarian and NAEAA's 2024 Don Henneke Award for sustained impactful contributions to equine education



nationally and internationally.

Dr. Matthew Edson from Rowan University gave a presentation on the new Shreiber School of Veterinary Medicine.

Named the founding Dean in June of 2021, Dr. Edson is a native of Eastampton Township, former executive board member and past president of the New Jersey Veterinary Medical Association, a former site visitor for the American Veterinary Medical Association (AVMA) Council on Education, former chair of the AVMA Committee on Disaster and Emergency Issues, and former vice chair of the

AVMA Practice Advisory Pilot Panel.

Dr. Edson earned his veterinary medical degree from Kansas State University and Master of Business Administration degree from Rowan University. He earned his bachelor's degree in animal science and biology from Rutgers University and completed training as a Mobile Intensive Care Paramedic through Virtua Health.

He is a licensed veterinarian in New Jersey, Pennsylvania, and Delaware and a Member of the Royal College of Veterinary Surgeons. He has strong interest in veterinary business and practice management is also a Certified Veterinary Practice Manager (CVPM).

The Shreiber School of Veterinary Medicine is looking forward to their first cohort starting in Fall of 2025.

Research updates were then provided on projects from the last year, as well as what the Center's new Ph.D. student is looking to research in the future.

Dr. Alisa Herbst, a Post-doctoral Research Associate at the Equine Science Center, presented the "Effects of Ostarine in Horses". Dr. Herbst's Research focused on the equine immune system, aging horses and muscle mass.

Amelia Puglia, a current Masters student at Rutgers University within the Endocrinology and Animal Bioscience program, then gave her talk "Does Calcium Propionate Administration Alter Plasma tCO₂ in Standardbred Horses Performing a Simulated Race Test?"

Ms. Puglia completed her GH Cook Senior thesis last year, researching calcium propionate administration in standardbred racing horses at the Equine Science Center which has since been published in the Journal of Equine Veterinary Science.

Mr. Bryce Bitsie, a Ph.D. student in the Endocrinology and Animal Biosciences program



Members from the Rutgers University Board for Equine Advancement (RUBEA) gather for a photo before the start of the event.



being advised by Dr. Kenneth McKeever and Dr. Karyn Malinowski, then gave a preview of what the focus of his doctoral dissertation will be with his talk “Beer For My Horses.”

Mr. Bitsie is from Mexican Springs, New Mexico and has worked with his family’s livestock operation, Bitsie Livestock, in northwestern NM, raising and selling Hereford, Angus, and Charolais cattle, merino sheep, and Quarter horses.

Working with livestock animals for much of his

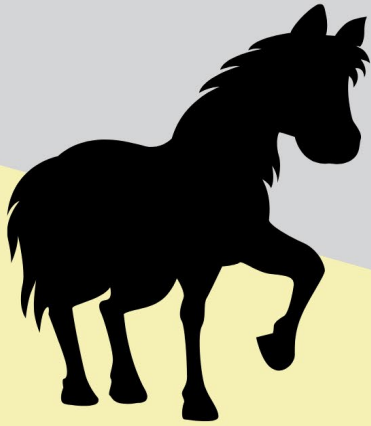


life, Bryce went on to earn his bachelor’s degree in animal science from New Mexico State University where he completed undergraduate research with beef and dairy cattle.

He went on to complete a master’s degree in animal science at Purdue University concentrating in ruminant nutrition in mitigating methane emissions in feedlot steers.

The evening concluded with the presentations of the “Spirit of the Horse” award.

“Emergencies, Pasture and Pain... Oh My!”



**Saturday, February 1,
2025
8:00 a.m. – 4:00 p.m.**

**Cook Campus Center,
Multipurpose Rooms
New Brunswick, NJ**

Specific Topics Include..

- “Emergency Preparedness: Many Teams...One Mission.”
- “Small Farm Pasture Management”
- “Evaluating Pain in Horses”
- “Evaluating Pain in Horses while Riding”
- “Basic Saddle Fitting to Reduce Pain in Horses”
- “Health & Management of US Senior Horses”



RUTGERS UNIVERSITY
Equine Science Center
New Jersey Agricultural Experiment Station

RUTGERS ANNUAL HORSE MANAGEMENT SEMINAR

IN PERSON!



Speakers from...

- Rutgers
- Middlesex County Office of Emergency Management
- Penn State
- Oklahoma State University
- Journeyman Saddlery

**...with many vendors
and door prizes!!**

For a full program and registration details:

<https://go.rutgers.edu/2025HMSLiveReg>

For Release

RUTGERS UNIVERSITY
Equine Science Center
New Jersey Agricultural Experiment Station

BACK BY POPULAR DEMAND...
RUTGERS VIRTUAL HORSE MANAGEMENT SEMINAR

Pasture, Nutrition & Pain... Oh My!

VIRTUAL Edition 2025
Tuesday Evenings in February
11th, 18th, 25th
6:30 - 8:30 pm each night

Specific Topics Include...

- "Small Farm Pasture Management"
- "Plants Toxic to Horses in the North and South US"
- "Basic Horse Nutrition"
- "Specific Nutritional"

• **Farm Management - February 11th, 2025**

• **Nutrition - February 18th, 2025**

The ever popular "Horse Management Seminar: Webinar Series" returns this February!

Lab Notes - Dr. Williams

From The Lab:

Join Dr. Williams as she hosts the Virtual Horse Management Seminar, taking place throughout the month of February.



THE TOP TAKE-A-WAYS

(Continued On Next Page)

Laura Kenny

"Small Farm Pasture Management"

- All horse farms, large or small, should manage pastures according to their needs and for environmental protection.
- Pasture management equipment is available in many sizes.
- Options include purchasing equipment, renting, borrowing, and hiring local people to maintain pastures

The Rutgers' Horse Management Seminar: Webinar Series is back virtually by popular demand!

We will keep the format the same FREE online format as the past few years to help serve our national and even global audience. The seminar will consist of three Wednesday evenings in Feb. (11th, 18th, and 25th).

Each virtual seminar evening will feature two to three speakers that we have done recent work in their field to give you the latest and greatest practical scientific information.

Each evening will focus on a broad topic area with plenty of time for questions after the speaker presentations.

The weekly webinars will run from 6:30 to 8:30 PM, and you can register for one or for all three!

The webinars will be free to our audience. However, to facilitate a more engaged live audience with our speakers, we will not be posting the archived webinars immediately after the program.

Webinar Topics Include:

Farm Management

On February 11th

Nutrition

On February 18th

Horse Health and Welfare

On February 25th

Please see the registration information at:
<https://go.rutgers.edu/2025VirtualHMSReg>

For questions, please contact
Dr. Carey Williams at:
carey.williams@rutgers.edu

Dr. Krishona Martinson & Dr. Betsy Greene

"Plants Toxic to Horses in the North and South US"

- **Most weeds are not palatable and will be avoided if adequate forage is available; however, horses cannot easily sort weeds out of hay.**
- **Understanding the plant's physiology, life history, how it reacts to stressors, and when toxic levels are the highest is an important part of understanding the toxicity of a plant.**
- **Sometimes it is hard to completely avoid having toxic plants in the pasture, but good pasture management can reduce impacts.**
- **Hoary alyssum causes stocking up when ingested; there is zero tolerance for this weed in hay intended for horses.**
- **The seed heads of foxtail can cause mouth ulcers; hay intended for horses should include less than 10% foxtail.**
- **Wild parsnip causes severe photosensitivity in both horses and humans; there is zero tolerance for this weed in hay intended for horses**

Continued Take-A-Ways

Dr. Jennie Ivy

"Basic Horse Nutrition"

- Knowing your horse's body condition, estimated body weight and nutritional goals are important for developing a feeding program.
- Feed forage first.
- Concentrates and supplements should be used with nutrient requirements, production classes, workloads, conditions, and research evidence as major selection factors.

Dr. Alisa Herbst

"Health & Management of US Senior Horses?"

- About two-thirds of U.S. senior horses are affected by at least one medical condition according to their owners.
- The most common medical conditions appear to be osteoarthritis, dental disorder, lameness, and pituitary pars intermedia dysfunction (PPID/Cushing's).
- Most senior horses are used for pleasure riding or are fully retired, with horse health problems being the main reason for retirement from regular exercise.

Dr. Erica Macon

"Specific Nutritional Considerations for Equids with Endocrine Disease"

- Equids with endocrine disorders, such as insulin dysregulation (Equine Metabolic Syndrome) and Cushing's (Pituitary Pars Intermedia Dysfunction), require frequent monitoring to prevent secondary complications.
- External characteristics (e.g., cresty neck, thin body condition, muscle atrophy) alone are not sufficient for diagnosing equine endocrine diseases.
- Nutritional management for equids with insulin dysregulation (but not Cushing's) involves reducing nonstructural carbohydrates in concentrate meals to 0.10 g/kg BW.

Dr. Kris Hiney

"Evaluating Pain in your Horse while Riding"

- Misbehavior in the ridden horse is often misidentified or mislabeled.
- Unwanted behaviors often originate from:
 - The environment and the arousal/anxiety it creates.
 - Human emotion, capability or inconsistent interactions.
 - Undiagnosed or unrecognized pain.

The Virtual Horse Management Seminar Program:

February 11th - Farm Management:

"Small Farm Pasture Management"

By: Laura Kenny, Penn State University

"Plants Toxic to Horses in the North and South US"

**By Dr. Krishona Martinson, University of Minnesota &
Dr. Betsy Greene, and Anita Thompson, University of Arizona**

February 18th - Nutrition:

"Basic Horse Nutrition"

By: Dr. Jennie Ivy, University of Tennessee

"Specific Nutritional Considerations for Equids with Endocrine Disease"

By: Dr. Erica Macon, Texas A&M University

February 22th - Horse Health and Welfare:

"Health & Management of US Senior Horses"

By: Dr. Alisa Herbst, Rutgers University

"Evaluating Pain in your Horse while Riding"

By: Dr. Kris Hiney, Oklahoma State University

To register and learn more, please go to: <https://go.rutgers.edu/2025VirtualHMSReg>



RUTGERS UNIVERSITY
Equine Science Center
 New Jersey Agricultural Experiment Station

Pasture, Nutrition & Pain... Oh My!

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- “Specific Nutritional Considerations for Equids with Endocrine Disease”
- “Health & Management of US Senior Horses”
- “Evaluating Pain in your Horse while Riding”

- **Farm Management – February 11th, 2025**
- **Nutrition – February 18th, 2025**
- **Horse Health and Welfare – February 25th, 2025**

For a full program and registration details:

<https://go.rutgers.edu/2025VirtualHMSReg>



NEW JERSEY
DEPARTMENT OF AGRICULTURE



RUTGERS UNIVERSITY
New Jersey Agricultural
Experiment Station

2025 NJ Junior Animal Science Symposium

**Location: Round Barn
@ George H. Cook Campus
Rutgers University**

Location: Intersection
of College Farm Road
and Sheepfold Lane,
North Brunswick
Township, NJ.

Registration Opens
in February of 2025.

Questions? Contact:
Amelia.Minervini@rutgers.edu



SAVE THE DATE

March 29th, 2025



Saturday
March 29th, 2025
8:30 am - 3:00 pm

For youth and adults
Rain or shine!

Hands-on workshops in the following tracks

- **Equine**
- **Swine**
- **Small Ruminant**
(Sheep & Goat)
- **Large Ruminant**
(Dairy and Beef Cattle)
- **Herpetology**
- **Poultry**
- **Beekeeping**
- **Rabbit**
- **Cavy (Guinea Pig)**
- **Animal Science Video Contest**

**Sponsored by the New Jersey Department of
Agriculture Junior Breeder Program, in cooperation
with Rutgers Cooperative Extension faculty and staff.**



Dr. Amy Lynn Butewicz (center left) poses with RUBEA Co-Chairs, Ed Wengryn and John Godecke (outside left and right respectively), and Equine Science Center Founding Director, Dr. Karyn Malinowski (center right).

Dr. Amy Lynn Butewicz Honored With 2025 Spirit Of The Horse Award

The Rutgers Equine Science Center presented Dr. Amy Lynn Butewicz with the 2025 Spirit of the Horse award for her steadfast commitment to the New Jersey equine industry.

The award was presented to Dr. Butewicz during the Rutgers Equine Science Center’s 2024 “Evening of Science & Celebration,” sponsored by Mid-Atlantic Equine Medical Center.

“I’ve known Amy since her time in the New Jersey 4-H program,” said Equine Science Center Founding Director, Dr. Karyn Malinowski. “I have had the distinct honor of watching her become one of New Jersey’s fiercest supporters of the equine industry and youth outreach and engagement.”

Dr. Amy Lynn Butewicz is a lifelong New Jersey resident and equestrian who has immersed herself in

many aspects of the equine industry.

From an early age, Dr. Butewicz participated in the 4-H horse program on the local, state, and national levels garnering many accomplishments. Because of this, she was crowned the 2001 NJ State Equestrian of the Year for her strong leadership in the equine community.

In 2008, Dr. Butewicz graduated Summa Cum Laude from the Rutgers University Ernest Mario School of Pharmacy with a Doctorate Degree (PharmD) in Pharmacy, and was a member of Rho Chi, the national pharmacy honor society.

Even though she continues to hold an active pharmacist license in the states of New Jersey and Kentucky; her deep connection to horses, agriculture, and open space in New Jersey led her to obtain her real estate license in 2015.

She currently works as a full time Realtor for Keller Williams Princeton Real Estate, specializing in equestrian properties, farms and land across the entire state. Dr. Butewicz, and her sister Stacy, operate their real estate team under the Butewicz Equestrian Lifestyle Real Estate banner.

To date, Butewicz Lifestyle Real Estate has proudly represented both buyers and sellers in over 135 farm sales totaling just over \$100 million in sales volume.

Always giving back her time and efforts to organizations and charities, her volunteerism philanthropy, and leadership have been a tremendous focus for Dr. Butewicz.

She is currently a Chair Emeritus for the Rutgers University Board for Equine Advancement, the advisory group to the Rutgers Equine Science Center, and had previously served as Co-Chair of the Board.

A champion for open space and agriculture initiatives, she serves as a council member for Millstone Township (Monmouth County) on 2 separate councils: the Open Space Preservation Council and the Agricultural Advisory Council, serving currently as Chairperson.

To foster the growth of future leaders, Dr. Butewicz created the NJ Agricultural Achievement Award Scholarship which is awarded annually.

“The ‘Spirit of the Horse’ award recognizes individuals whose lives have been profoundly changed



Dr. Amy Lynn Butewicz was joined by Rutgers Equine Science Center Founding Director Dr. Karyn Malinowski, her parents and sister to celebrate after she received the 2025 “Spirit of the Horse” award.

because of their involvement with horses and who have acknowledged the impact by giving back to the horse industry,” said Dr. Malinowski. “Amy’s commitment to the equine industry, and specifically her focus on youth education and support, makes her an exemplary role-model of what is needed to ensure a strong equine industry. Fostering the next generation of equine enthusiasts, competitors, and researchers is how the New Jersey equine industry will continue to be one of the strongest across the United States.”

In her spare time, Dr. Butewicz enjoys her equestrian pursuits through her riding endeavors as well as her connection to the harness racing industry as a licensed harness horse owner.

One of her most memorable moments was in 2019 with her first ownership win with her trotter, Massive Talent, at Freehold Raceway. An avid harness racing fan, Amy currently owns racehorses as a sole owner as well as in partnerships. Her interest in harness racing grew with importing her first Australian racehorse, beloved pacing mare Corsini A.

Amy resides on her farm, Ambition Farm and Stable, in Millstone Township NJ which is home to her personal horses (Paint horse Frostys Marshall Boot, mule Bucky, retired Standardbred Ohio Vintage & now retired Standardbred Massive Talent) as well as racehorses boarded for turnout and layup.

Winter Refresh: Updated Fact Sheets



Fact Sheet FS1142

Winter Care for Horses

Carey Williams, Extension Specialist in Equine Management
Sarah Ralston, VMD, PhD, DACVN, Retired

As days get shorter and the weather becomes cold and wet, there are many things to consider when maintaining horse health and well-being throughout the long winter months. This fact sheet addresses the most common concerns regarding equine housing, health maintenance, nutrition, and exercise in cold weather.

Housing and Shelter

One needs to look at their individual circumstances during the winter months to figure out what is best for their horse. For example, even in the harshest winter, most horses do not need to be stabled in a barn if there is shelter from the elements in the form of a run-in shed or even a dense stand of trees. However, most horses that are kept outside with little or no shelter will grow a longer hair coat. This longer, denser hair coat will help keep them warm and prevent heat loss, but it limits their ability to effectively cool out quickly after exercise. Some solutions may include clipping the long hair and blanketing the horse (see below). When they are turned out in cold, windy and/or wet weather, horses need to be monitored carefully for shivering, whether they are blanketed or not.

A horse's respiratory health during the winter can be a concern if housed indoors with limited ventilation. Ventilation should be maximized by keeping windows/doors open as much as possible, even in very cold weather. Ceiling fans/vents also facilitate adequate air exchange. Wet bedding and manure should be completely removed at least once a day.

Blanketing and Clipping

It is not necessary to blanket a horse in winter if it has a naturally thick coat of hair and is adapted to the cold. However, if you choose to do so, there are a wide variety of blankets available, ranging from lightweight "sheets" that are best suited for short-term use after riding or unclipped horses, to thick, waterproof "rugs" designed for long-term use with horses turned out for extended periods of time or those with full body clips. It is important to select a blanket that is appropriate for the specific conditions the horse faces. If the horse is outside in wet weather, it is



Figure 1. Young horses kept outside in the winter will grow a long thick haircoat.



Fact Sheet FS1143

Winter Feeding for Horses

Carey Williams, Extension Specialist in Equine Management
Sarah Ralston, VMD, PhD, DACVN, Retired

Winter conditions vary dramatically among the world's various regions, as do the tolerances of individual horses to cold weather stressors. Therefore, it is impossible to give exact recommendations regarding nutritional needs that would be applicable to all horses and regions. However, there are general nutritional concerns that always need to be addressed as the weather gets colder. These are insuring adequate caloric (energy) and water intake and recognizing situations where supplemental nutrients may be necessary to maintain a horse's optimal health and well-being. These concerns will be addressed in this fact sheet, which will also provide some basic feeding recommendations and help to dispel some common myths regarding feeding horses in winter.

Energy Concerns

During the winter months, many horses will need extra energy to help them maintain their body temperature without decreasing body weight or creating stress due to multiple days of discomfort (cold stress). On average, it has been estimated that the average horse will need about 25% higher energy intake during the coldest winter months. This is only a rough estimate and should not be implemented without considering the following factors. For each degree Fahrenheit the air is below the horse's lower critical temperature (LCT, the temperature below which the horse will start to use more energy for maintaining body warmth than their normal expenditure) the caloric needs will increase by about 1%. However, the LCT of an individual horse will depend on the temperatures to which it is accustomed, the amount of body insulation (i.e., length of the hair coat, type of blanket, and amount of body fat), and protection provided by shelters. For example, a lean horse stabled in a heated barn in Georgia with a clipped hair coat may have a LCT of 50 °F, whereas a shaggy, overweight horse accustomed to living outdoors with only three-sided run-in sheds in Michigan may have a LCT of 30 °F or lower. If a horse is shivering, it is a good indication that its LCT has been reached. Piloerection (when the hair coat is standing on end instead of lying flat) and horses seeking shelter from wind or precipitation are also good indicators that they need higher energy intake. If cold stress is sufficiently prolonged (more than one or two days) and the increased energy needs are not



Figure 1. Three horses on a snowy day, two comfortable without blankets and one needing a blanket.



Fact Sheet FS073

Forage Substitutes for Horses

Carey Williams, Extension Specialist in Equine Management
Sarah Ralston, VMD, PhD, DACVN, Retired

Forages such as long-stem hay and/or pasture grasses and legumes are the traditional cornerstones of horse rations. A good source of forage should comprise at least 75% of a horse's daily intake, which would be about 15 lbs. for an average 1,000 lb. horse. While an important source of energy, protein, minerals, and vitamins, forages also provide fiber that horses require to maintain a healthy hindgut. Long-stem hay and pasture grasses contain over 20% crude fiber, whereas most grain mixes will be around 10%, whereas "complete" feeds will be at least 25%. Horses can adapt to balanced rations that do not contain hay or pasture, but the absolute minimum of fiber necessary has not been established. However, low fiber/high concentrate rations have been documented to increase the risk of colic, gastric ulcers, and wood chewing behavior of horses.

Unfortunately, in times of drought, or other adverse weather conditions, the pastures dry up and long-stem hay is not only expensive, but hard to find. But if hay costs soar, what is a horse owner to do?

Luckily, we do have some options. Listed below are some forage substitutes that can be safely incorporated into horse rations to provide the necessary fiber.

"Complete" Concentrates

Complete feed concentrates are available in textured, pelleted, or extruded forms, these complete concentrates are mixtures of grains, hay and/or beet pulp, and vitamin and mineral supplements. They are designed to be fed without hay, grain, or other supplements while still meeting the basic needs of the horse. Complete feeds are available in a wide variety of nutritional profiles, so it is important to read the labels to determine which will meet your horse's needs (i.e., adult maintenance versus the young growing or performance horse). These feeds are used a lot with older horses with dental problems because they can be turned into a mash that the horse does not need to chew but slurp up and swallow with little trouble.



Figure 1. Dried complete feed can be



Fact Sheet FS656

Are You 'Stressing Out' Your Horse?

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What is Stress?

Stress is the body's response to anything that it considers threatening. For a horse this could be anything from trailering and traveling, showing, poor nutrition, feeding at irregular times, changes in other routines, environmental toxins, interactions within their social environment, variations in climate, and illness.

Some types of stress include various physical stresses that are based on the physical makeup of the animal, and its ability to respond to changes in diet, injury, etc. Psychological stresses are based on a horse's personality and its perception of life. For example, some horses are more stressed by being in a stall for longer periods of time than others.

The horse's basic stress response starts with a change in behavior, either by moving away from a stimulus, swishing its tail, bucking, tensing up, etc. This stress will then cause activation of the sympathetic nervous system, called the "Fight or Flight" response. The sympathetic nervous system will create an involuntary action of the intestines (diarrhea), endocrine glands (production of adrenaline and cortisol), and heart (increase in heart rate). Next the neuroendocrine system will be activated allowing the horse's system to increase its energy utilization.

Each horse deals with stress in a different way depending on the personality of the individual horse.

Demonstrative, Confident Horse

- Lets you know when it is stressed!
- Bucks, kicks, bites, is very curious, mouthy, a troublemaker, etc.



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