

**CLAY P. MATHIS, PHD**  
*Curriculum Vitae*

MSC 137, Kleberg Ag Building, Rm. 124  
Kingsville, TX 78363-8202  
(361)593-5400

**EDUCATION**

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<b>PhD</b>	August, 1998	<b>Kansas State University</b>	Ruminant Nutrition
<b>M.S.</b>	August, 1995	<b>Texas A&amp;M University</b>	Physiology of Reproduction
<b>B.S.</b>	December, 1993	<b>Texas A&amp;M University</b>	Animal Science

**CURRENT EMPLOYMENT**

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<b>Employer</b>	<b>Texas A&amp;M University-Kingsville</b>
<b>Title:</b>	Director and Endowed Chair, King Ranch <sup>®</sup> Institute for Ranch Management
<b>Period:</b>	July 2010 to present

**PREVIOUS EMPLOYMENT**

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<b>Employer:</b>	<b>New Mexico State University</b>
<b>Title:</b>	Professor and Extension Livestock Specialist; 2007 to 2010
<b>Title:</b>	Associate Professor and Extension Livestock Specialist; 2004 to 2007
<b>Title:</b>	Assistant Professor and Extension Livestock Specialist; 1998 to 2004

**AWARDS**

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2010 Distinguished Service Award. NMSU Extension Specialists' Association  
2007 Applied Research Award. Western Section of American Society of Animal Science  
2005 Extension Award. Western Section of American Society of Animal Science  
1997 Purina Mills Beef Research Fellowship

**TEACHING EXPERIENCE**

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**Graduate Courses - Texas A&M University-Kingsville**

RAMT 5351 – Systems Approach to Natural Resources Problem Solving: Concept of systems dynamics applied to natural resource management issues.  
RAMT 5305 – Graduate Research Project: Leadership of graduate student research.  
RAMT 5350 – Practicum in Ranch Management  
RAMT 5695 – Advanced Problems in Ranch Management

**Graduate Student Advising**

M.S. Committees Chaired:

- Jeff Duncan. An Evaluation of Supplementation Alternatives for King Ranch (2013)
- Travis Moore . An Analysis of AgReserves, Inc. Feedyard Flow: Backgrounding Scenarios Which Optimize Flow at Least Possible Cost (2013)
- John Hay: Applying a Heifer Development Model to Optimize Efficiency and Production (2011)

- Jennifer Johnson: An Evaluation of Employee Management on Large Ranches (2011)
- Tommy Gilmore: A Grazing and Drought Plan for Gilmore Ranch South (2011)
- Jeremy Gingerich: A Strategic Ranch Management Plan for Vermejo Park Ranch (Summer 2012)
- Jason Van Tassell: An Evaluation of Restocking Alternatives for the Four Sixes Ranch (Summer 2012)
- Caleb Roach: A Hunting and Natural Resources Management Plan for A.T. Canales Ranch (Summer 2012)

Currently M.S. Committee Chair (anticipated defense semester):

- Tyrell Anderson (Summer 2015)
- Cody Peck (Summer 2015)
- Rhonda Wulf (Summer 2015)
- Tylor Braden (Summer 2014)
- Tyson Johnson (Summer 2014)
- Chris Redman (Summer 2014)
- Darrell White (Summer 2014)

M.S. Graduate Committee Member

- Michael Griger: Advisor: Dr. Kim McCuiston (Summer 2012)

**New Mexico State University**

ANSC 448/548 – Beef Industry Systems: Inputs, outputs and interrelationships of all sectors of the beef industry.

Previous Graduate Committee Service:

- Doctoral Students (9; **Co-Chair** of 1)
- Master's Students (9)

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**COMMITTEES AND COMMITTEE ASSIGNMENTS**

**National & Regional Committees**

National Cattlemens Beef Association BQA Advisory Committee (2013-present)

eXtension Community of Practice: Cattle Clearinghouse (2006 to 2010)

Federation of Animal Science Societies

- Joint Extension Education Workshop Committee (2006 to 2008)

American Society of Animal Science

- Extension Education Committee (2006 to 2008)

American Society of Animal Science Western Section

- Extension Committee (2000 to 2002; 2009-2011) - **2002 Chairman**
- Awards Committee (2006 to 2008)
- Executive Committee (2002, 2004)

- Advisory and Coordinating Committee (2002 to 2005) - **2004 Chairman**

National Cattlemen's Beef Association BQA State Coordinators Committee (1999 to 2010)

- Animal Identification Committee - **2003 Vice-Chairman**

National Cattlemen's Beef Association Western Region IRM Working Group (2003 to present)

National 4-H Livestock Skillathon Contest Committee (2000 to 2007)

National Beef InfoBase Committee (2000 to 2002) - **New Mexico Ambassador**

Western Beef Resource Committee (WBRC; 1999 to 2010)

- WBRC Reproduction Section (1999 to 2005) - **Chairman**

**State Committees**

New Mexico Beef Industry Improvement Committee (2009 to 2010)

- Health Subcommittee
- Extension Service Collaboration Subcommittee

National Animal Identification System Stakeholder Advisory Committee to the New Mexico Livestock Board (2006 to 2010)  
New Mexico Scrapie Certification Board (2005 to 2010)  
New Mexico Cattle Growers Beef Quality Assurance Task Force (2000 to 2006)  
Southern New Mexico State Fair Quality Assurance Control Committee (2002 to 2003)  
Southern New Mexico State Fair Livestock Committee (2001 to 2002)

#### **University, College, and Departmental Committees**

##### Texas A&M University - Kingsville

TAMUK Long-term Budget committee (2012 to 2013)  
TAMUK University Advancement Committee (2010 to 2012)  
Promotion and Tenure Review Committee. Department of Agriculture, Agribusiness and Environmental Science (2010 to 2011; **2011 Chair**)

##### New Mexico State University

NMSU Faculty Senate (2007 to 2010) for NMSU Cooperative Extension Service (2009 to 2010)

- Committee on Committees (2009 to 2010)
- Faculty Affairs Committee (2009 to 2010)
- Long Range Planning Committee (2008 to 2009)
- University Affairs Committee (2007 to 2008)

Extension Plant Sciences Department Promotion and Tenure Evaluation Committee (2009 to 2010)  
Extension Animal Sciences and Natural Resources Promotion and Tenure Committee (2009 to 2010)  
College of Agriculture, Consumer, and Environmental Sciences Performance Evaluation Committee (2009)  
NMSU Extension Specialist Promotion and Tenure Evaluation Committee (2008 to 2010)  
College of Agriculture and Home Economics Distance Education Committee (2007 to 2010)  
Ad-hoc Committee on NMSU Extension Faculty Appointment Conversion to 9-months (2008) - **Chairman**  
Uniting NMSU Online Committee (2004 to 2006)  
All-Extension Conference Planning Team (2004, 2005, 2009)  
Corona Range and Livestock Research Center Steering Committee (2003 to 2010)  
Ad Hoc All College Conference Review Committee (2003)  
NMSU E-Extension Committee (2002 to 2006)  
All College Conference Planning Committee (2001 to 2003) - **2003 Co-Chairman**

- Sustainable Animal and Rangeland Resources Subcommittee (2002 to 2003) - **Chairman**

Sustainable Animal and Rangeland Resources Program Committee (2001 to 2007)  
Range Improvement Task Force (1998 to 2010)  
Cattle Growers Short Course Planning Committee (1998 to 2010; **Coordinator**, 2004 to 2010)  
NMSU Faculty Search Committees (11; **Chairman** of 2)  
NMSU Graduate Faculty (1999 to 2010)

#### **MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS**

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Texas and Southwestern Cattle Raisers Association  
Plains Nutrition Council  
American Registry of Professional Animal Scientists  
CattleFax  
National Cattlemen's Beef Association  
American Society of Animal Science

## EXTRAMURAL FUNDING

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➤ **Cumulative funding:** **\$1,548,085**

### Gifts Received supporting King Ranch Institute for Ranch Management (July 2010 to present)

➤ **2012** **\$225,000**  
➤ **2011** **\$175,325**  
➤ **2010** **\$555,530**

Hughes and Betsy Abell Family. 2012. Gift to support King Ranch Institute for Ranch Management. Texas A&M University-Kingsville. **\$5,000.**

Patricia Lewis Zoch Children's Foundation. Gift to support King Ranch Institute for Ranch Management. Texas A&M University-Kingsville. **\$5,000.**

Ag Reserves Inc. 2012. Gift to support King Ranch Institute for Ranch Management. Texas A&M University-Kingsville. **\$15,000.**

King Ranch Inc. 2012. Gift to support King Ranch Institute for Ranch Management. Texas A&M University-Kingsville. **\$15,000.**

Exxon/Mobil Foundation. 2012. Gift to support King Ranch Institute for Ranch Management. Texas A&M University-Kingsville. **\$10,000.**

South Texas Charity Quail Hunts. 2012. Gift to support King Ranch Institute for Ranch Management. Texas A&M University-Kingsville. **\$60,000.**

Texas AgFinance. 2012. Pledge fulfillment to support King Ranch Institute for Ranch Management. Texas A&M University-Kingsville. **\$100,000**

Exxon/Mobil Foundation. 2011. Gift to support King Ranch Institute for Ranch Management. Texas A&M University-Kingsville. **\$10,000.**

South Texas Charity Quail Hunts. 2011. Gift to support King Ranch Institute for Ranch Management. Texas A&M University-Kingsville. **\$60,000.**

Texas AgFinance. 2011. Pledge fulfillment to support King Ranch Institute for Ranch Management. Texas A&M University-Kingsville. **\$100,000**

Lyssey and Eckel, Inc. 2011. Gift to support King Ranch Institute for Ranch Management. Texas A&M University-Kingsville. **\$5,000.**

Ag Reserves Inc. 2010. Donation to King Ranch Institute for Ranch Management to create Deseret Scholarship Endowment fund. **\$500,000.**

Ag Reserves Inc. 2010. Gift to support King Ranch Institute for Ranch Management. Texas A&M University-Kingsville. **\$30,000.**

Exxon/Mobil Foundation. 2010. Gift to support King Ranch Institute for Ranch Management. Texas A&M University-Kingsville. **\$10,000.**

John & Ann Larkin, III. 2010. Gift to support King Ranch Institute for Ranch Management. Texas A&M University-Kingsville. **\$5,000.**

Ralph Leggett Memorial. 2010. Gift to support King Ranch Institute for Ranch Management. Texas A&M University-Kingsville. **\$10,250.**

Yarborough Foundation. 2010. Gift to support King Ranch Institute for Ranch Management. Texas A&M University-Kingsville. **\$100.**

### Grants Funded – Texas A&M Kingsville

**TAMUK Total: \$15,000**

Rhoades, R.D., **C.P. Mathis**, and K.C. McCuiston. 2012. Phase 1-Development of a large ranching BQA toolbox. National Cattlemen's Beef Association. **\$10,000.**

Rhoades, R.D., **C.P. Mathis**, and K.C. McCuiston. 2012. Development of a long range strategic plan for the Santa Gertrudis Breeder International. **\$5,000.**

### Grants Funded – New Mexico State University

**NMSU Total: \$592,230**

**Mathis, C. P.**, M. Encinias, B. Carpenter, F. T. McCollum, III. 2009. Southwest Beef Symposium. Funded by New Mexico Beef Council for **\$2,000.**

**Mathis, C. P.**, M. Encinias, B. Carpenter, F. T. McCollum, III. 2007. Southwest Beef Symposium. Funded by New Mexico Beef Council for **\$2,000.**

**Mathis, C. P.**, M. Encinias, B. Carpenter, F. T. McCollum, III. 2007. Southwest Beef Symposium. Funded by Pfizer Animal Health for **\$2,000.**

- Löest, C. A., **C. P. Mathis**, M. K. Petersen, and J. E. Sawyer. 2005. USDA-NRI. Development of methods and decision-making tools to enable stakeholders to improve calf well-being: An integrated approach. Funded for **\$397,505**.
- Rasby, R., G. Selk, and J. Whittier. 2006. eXtension Community of Practice: Cattle Clearinghouse. Funded by eXtension for **\$50,000**. NMSU Cooperating Investigator: **C. P. Mathis**.
- Mathis, C. P.**, M. Encinias, B. Carpenter, F. T. McCollum, III. 2006. Southwest Beef Symposium. Funded by New Mexico Beef Council for **\$2,000**.
- Parker, R., M. Encinias, and **C. P. Mathis**. 2005. Animal Identification Education. Funded by Tri-National Livestock Consortium for **\$9,400**.
- Mathis, C. P.**, B. Carpenter, F. T. McCollum, III, and M. Encinias. 2004. Southwest Beef Symposium. Funded by National Cattlemen’s Beef Association for **\$750**.
- Mathis, C. P.** and R. Parker. 2004. New Mexico Ranch to Rail. Funded by New Mexico Cattle Growers Feeder Committee for **\$1,750**.
- Mathis, C. P.** 2003. New Mexico Ranch to Rail. Funded by New Mexico Cattle Growers Feeder Committee for **\$1,750**.
- Mathis, C. P.**, R. Parker, and J. E. Sawyer. 2003. New Mexico Beef Cattle IRM-SPA Workshop and On-Ranch Consultation. Funded by National Cattlemen’s Beef Association for **\$1,575**.
- Mathis, C. P.**, and J. E. Sawyer. 2002. New Mexico Ranch to Rail. Funded by New Mexico Cattle Growers Feeder Committee for **\$1,500**.
- Gipson, T. A., R. Merkel, R. Parker, **C. P. Mathis**, and C. Balok. 2001. Animal Production Food Safety Outreach Program for Small Beef, Sheep and Goat Producers in New Mexico and Oklahoma. Funded by USDA-FSIS for **\$60,000**.
- Gipson, T. A., R. Merkel, R. Parker, **C. P. Mathis**, and C. Balok. 2002. Animal Production Food Safety Outreach Program for Small Beef, Sheep and Goat Producers in New Mexico and Oklahoma. Funded by USDA-FSIS for **\$60,000**.

## **LISTING OF PUBLICATIONS**

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<b><u>Publication Type</u></b>	<b><u>No. Publications</u></b>
Peer-reviewed	28
Extension Guides, Circulars, and Proceedings	62
Research Proceedings and Reports	55
Abstracts	36
Popular Press	47

### **Peer-Reviewed**

1. Mulliniks, J. T., J. E. Sawyer, **C. P. Mathis**, S. H. Cox, and M. K. Petersen. 2012. Winter supplementation during late gestation influences cow and steer progeny performance. *J. Anim. Sci.* 90:5099-5106. Winter protein management during late gestation alters range cow and steer progeny performance
2. McCuiston, K. C., J. Johnson Livsey, D. Wilmeth, D Probert, B. Dunn, R. Rhoades, and **C. P. Mathis**. 2011. Case Study: A Systems Analysis of Cattle Morbidity in a Niche Market Beef Cooperative. *J. Agric., Food Syst, and Comm. Dev.* 2:289-286.
3. Waggoner, J. W., C. A. Löest, J. L. Turner, **C. P. Mathis**, and D. M. Hallford. 2009. Effects of dietary protein and bacterial lipopolysaccharide infusion on nitrogen metabolism and hormonal responses of growing beef steers. *J. Anim. Sci.* 87:3656-3668.
4. **Mathis, C.P.**, S. H. Cox, C. A. Löest, M. K. Petersen, and J. T. Mulliniks. 2009. Pasture preconditioning calves at a higher rate of gain improves feedlot health but not post-weaning profit. *Prof. Anim. Sci.* 25:475-480.
5. Waggoner, J. W., C. A. Löest, **C. P. Mathis**, D. M. Hallford, and M. K. Petersen, M. D. Remmenga. 2009. Effects of supplemental rumen-protected methionine and bacterial lipopolysaccharide on nitrogen metabolism and hormonal responses of growing beef steers. *J. Anim. Sci.* 87:681-692.
6. Van E. Nolte, J., C. A. Löest, A. V. Ferreira, J. W. Waggoner, and **C. P. Mathis**. 2008. Limiting amino acids for growing lambs fed a diet low in ruminally undegradable protein. *J. Anim. Sci.* 86: 2627-2641.

7. Olson, K. C., R. C. Cochran, E. C. Titgemeyer, **C. P. Mathis**, T. J. Jones, and J. S. Heldt. 2008. Prediction of the energy content of tallgrass prairie hay. *J. Anim. Sci.* 86: 1372:1381.
8. **Mathis, C. P.**, S. H. Cox, C. A. Löest, M. K. Petersen, R. L. Endecott, A. M. Encinias, and J. C. Wenzel. 2008. Comparison of Low-input Pasture to High-input Drylot Backgrounding on Performance and Profitability of Beef Calves through Harvest. *Prof. Anim. Sci.* 24:169-174.
9. Cabrera, V. E., **C. P. Mathis**, R. E. Kirksey, T. T. Baker. 2008. Case Study: Development of New Mexico Dairy Manure, a Seasonal Prediction Model for Manure Excretion by Dairy Cattle. *Prof. Anim. Sci.* 24:175-183.
10. **Mathis, C. P.**, and J. E. Sawyer. 2007. Nutritional Management of Grazing Beef Cows. *Vet. Clin. Food Anim.* 23:1-19.
11. Waggoner, J. W., **C. P. Mathis**, C. A. Löest, J. E. Sawyer, F. T. McCollum, III, and J. P. Banta. 2007. Case Study: Impact of morbidity in finishing beef steers on feedlot average daily gain, carcass characteristics, and carcass value. *Prof. Anim. Sci.* 23:174-178.
12. **Mathis, C. P.**, D. W. Bohnert, and J. E. Sawyer. 2006. Supplementation Strategies for Grazing Beef Cattle. *Cow-Calf Management Guide and Cattle Producers' Library.* CL-318.
13. Sawyer, J. E., **C. P. Mathis**, R. E. Kirksey, and L. A. Lauriault. 2006. Production alternatives for market beef cow value enhancement. *Prof. Anim. Sci.* 22:132-138.
14. Waterman, R. C., J. E. Sawyer, **C. P. Mathis**, D. E. Hawkins, G. B. Donart, and M. K. Petersen. 2006. Effects of supplements that contain increasing amounts of metabolizable protein with or without Ca-propionate salt in young beef cows. *J. Anim. Sci.* 84:433-446.
15. Sawyer, J. E., **C. P. Mathis**, and B. Davis. 2004. Adding value to culled beef cows. *J. Anim. Sci.* 82:3646-3653.
16. Farmer, C. G., B. C. Woods, R. C. Cochran, J. S. Heldt, **C. P. Mathis**, K. C. Olson, E. C. Titgemeyer, and T. A. Wickersham. 2003. Effect of supplementation frequency and supplemental urea level on dormant tallgrass-prairie hay intake and digestion by beef steers and prepartum performance of beef cattle cows grazing dormant tallgrass-prairie. *J. Anim. Sci.* 82:884-894.
17. **Mathis, C. P.**, J. E. Sawyer, R. Waterman, and C. A. Löest. 2003. Urea in Range Cattle Supplements. *Cow-Calf Management Guide and Cattle Producers' Library.* CL-321.
18. Sawyer, J. E., **C. P. Mathis**, C. A. Löest, D. A. Walker, K. J. Malcolm-Callis, L. A. Blan and R. Taylor. 2003. Case Study: Niche-targeted versus conventional finishing programs for beef steers. *Prof. Anim. Sci.* 19:188-194.
19. Rogers, C. A., T. W. Drummond, R. Flores, **C. P. Mathis**, and M. L. Looper. 2003. Case Study: Estrous characteristics are influenced by prostaglandin administration in beef heifers. *Prof. Anim. Sci.* 19:19-22.
20. Farmer, C. G., R. C. Cochran, D. D. Simms, J. S. Heldt, and **C. P. Mathis**. 2001. Impact of divergent wheat milling byproducts in supplements on the forage use and performance of beef cattle consuming low quality, tallgrass-prairie forage. *J. Anim. Sci.* 79:2472-2480.
21. **Mathis, C. P.**, R. C. Cochran, E. S. Vanzant, I. E. O. Abdelgadir, J. S. Heldt, K. C. Olson, D. Johnson, J. Caton, D. Faulkner, G. Horn, S. Paisley, R. Mass, K. Moore, and J. Halgerson. 2001. A collaborative study evaluating in situ and in vitro techniques for estimating protein degradability of different forages. *Anim. Feed Sci. Technol.* 93:31-42.
22. **Mathis, C. P.**, H. E. Hawkins, L. R. Sprott, D. K. Lunt, and D. W. Forrest. 2001. Pregnancy Rate in Beef Heifers after Synchrony to Random or Programmed Estrous Cycles. *J. Anim. Sci.* 79:561-567.
23. **Mathis, C. P.**, and J. E. Sawyer. 2000. Beef Cow Production Efficiency in Western Rangelands. *Cow-Calf Management Guide and Cattle Producers' Library.* CL-732.
24. **Mathis, C. P.**, R. C. Cochran, J. S. Heldt, B. C. Woods, I. E. O. Abdelgadir, K. C. Olson, E. C. Titgemeyer, and E. S. Vanzant. 2000. Effects of supplemental degradable intake protein on utilization of medium- to low-quality forages. *J. Anim. Sci.* 78:224-232.
25. **Mathis, C. P.**, R. C. Cochran, G. L. Stokka, J. S. Heldt, B. C. Woods, and K. C. Olson. 1999. Impact of increasing amounts of soybean meal on intake and digestion by beef steers and performance by beef cows consuming low-quality tallgrass-prairie forage. *J. Anim. Sci.* 77:3156-3162.
26. **Mathis, C. P.**, and R. Parker. 1999. Reproductive anatomy and physiology of the cow. *Cow-Calf Management Guide and Cattle Producers' Library.* CL-440.
27. Heldt, J.S., R.C. Cochran, **C.P. Mathis**, B. C. Woods, K. C. Olson, E.C. Titgemeyer, T.G. Nagaraja, E. S. Vanzant, and D.E. Johnson. 1999. Effects of level and source of carbohydrate and level of degradable intake protein on intake and digestion of low-quality tallgrass-prairie hay by beef steers. *J. Anim. Sci.* 77:2846-2854.

28. Heldt, J.S., R.C. Cochran, G. L. Stokka, C. G. Farmer, **C. P. Mathis**, E.C. Titgemeyer, and T.G. Nagaraja. 1999. Effects of different supplemental sugars and starch fed in combination with degradable intake protein on low-quality forage use by beef steers. *J. Anim. Sci.* 77:2793-2802.

### **Extension/Outreach Guides and Circulars**

1. Peterson, W., M. Hutchcraft, and C.P. Mathis. 2012. White Paper - Agricultural Water: Protecting the Future of Our Nation. King Ranch® Institute for Ranch Management. Texas A&M University-Kingsville, Kingsville, TX.
2. Rhoades, R., and **C. P. Mathis**. 2011. Business Management of Hunting Enterprises on Working Ranches: Building a Hunting Enterprise Business Plan. King Ranch® Institute for Ranch Management. Texas A&M University-Kingsville, Kingsville, TX.
3. Carter, B. H., **C. P. Mathis**, C. A. Löest, and J. Wenzel. 2011. Castrating Beef Calves: Age and Method. NMSU Cooperative Extension Service Report, Las Cruces, NM. Guide B-227.
4. Carter, B., **Mathis, C. P.**, and C. L. Löest. 2010. Using Anti-suckling Devices to Wean Beef Calves. NMSU Cooperative Extension Service Report, Las Cruces, NM. Guide 648.
5. Runyan, C., J. Bader, **C. P. Mathis**. 2009. Water Quality for Livestock and Poultry. NMSU Cooperative Extension Service Report, Las Cruces, NM. Guide M-112.
6. Wenzel, J. C., **C. P. Mathis**, B. Carter. 2009. Cowherd Vaccination Guidelines. NMSU Cooperative Extension Service Report, Las Cruces, NM. Guide B-224.
7. Wenzel, J. C., **C. P. Mathis**, B. Carter. 2009. Calf Vaccination Guidelines. NMSU Cooperative Extension Service Report, Las Cruces, NM. Guide B-223.
8. **Mathis, C. P.**, C. L. Löest, and B. Carter. 2008. Preconditioning Beef Calves. NMSU Cooperative Extension Service Report, Las Cruces, NM. Circular 637.
9. Wenzel, J. C., B. Carter, **C. P. Mathis**. 2008. Cattle Vaccination and Immunity. NMSU Cooperative Extension Service Report, Las Cruces, NM. Guide B-222.
10. **Mathis, C. P.**, and B. Carter. 2008. Minimizing Weaning Stress on Calves. NMSU Cooperative Extension Service Report, Las Cruces, NM. Guide B-221.
11. Cabrera, V., R. Kirksey, and **C. P. Mathis**. 2007. Grazing-N: A Nitrogen Balance Model for Grazing Dairy Heifers and Dry Cows in New Mexico. NMSU Cooperative Extension Service Report, Las Cruces, NM. Circular 611.
12. **Mathis, C. P.**, C. A. Löest, F. T. McCollum, and G. R. Hagevoort. 2007. Using Byproduct Feedstuffs in Grazing Nutrition. NMSU Cooperative Extension Service Report, Las Cruces, NM. Circular 612.
13. Endecott, R. L., and **C. P. Mathis**. 2006. Ration Balancing on the Ranch. NMSU Cooperative Extension Service Report, Las Cruces, NM. Guide B-125.
14. **Mathis, C. P.**, and M. Encinias. 2005. Early Weaning Beef Calves. NMSU Cooperative Extension Service Report, Las Cruces, NM. Guide B-126.
15. **Mathis, C. P.**, J. E. Sawyer, and R. Waterman. 2003. Urea in Range Cattle Supplements. NMSU Cooperative Extension Service Report, Las Cruces, NM. Circular 583.
16. Parker, R., M. Looper, **C. Mathis**, and J. E. Sawyer. 2002. Biosecurity on the Beef and Dairy Operation. NMSU Cooperative Extension Service Report, Las Cruces, NM. Guide B-121.
17. Parker, R., **C. Mathis**, M. Looper, and J. E. Sawyer. 2002. Anthrax in Livestock. NMSU Cooperative Extension Service Report, Las Cruces, NM. Guide B-120.
18. **Mathis, C. P.**, and B. Faris. 2002. Wool Grades. NMSU Cooperative Extension Service Report, Las Cruces, NM. Guide B-409.
19. **Mathis, C. P.**, J. E. Sawyer, and R. Parker. 2002. Managing and Feeding Beef Cows Using Body Condition Scores. NMSU Cooperative Extension Service Report, Las Cruces, NM. Circular 575.
20. Sawyer, J. E., and **C. P. Mathis**. 2001. Supplement Delivery Systems. NMSU Cooperative Extension Service Report, Las Cruces, NM. Circular 571.
21. **Mathis, C. P.**, and J. Duffey. 2000. 4-H Market Lamb Project. NMSU Cooperative Extension Service Report, Las Cruces, NM. Guide 100 B-14.
22. **Mathis, C. P.** 2000. Use of Growth Implants in Suckling Beef Calves. NMSU Cooperative Extension Service Report, Las Cruces, NM. Guide B-218.
23. **Mathis, C. P.** and T. Ross. 2000. Sheep Production and Management. NMSU Cooperative Extension Service Report, Las Cruces, NM. Guide 100 B-15.

24. **Mathis, C. P.** 2000. Protein and Energy Supplementation to Beef Cows Grazing New Mexico Rangelands. NMSU Cooperative Extension Service Report, Las Cruces, NM. Circular 564.
25. **Mathis, C. P.** and J. E. Sawyer. 2000. Beef Cow Production Efficiency in the Southwest. NMSU Cooperative Extension Service Report, Las Cruces, NM. Guide B-217.
26. Parker, R, **C. Mathis**, and D. Hawkins. 1999. Breeding Soundness Evaluation of the Beef Bull. NMSU Cooperative Extension Service Report, Las Cruces, NM. Guide B-216.
27. **Mathis, C. P.** 1999. Market Lamb Showmanship. NMSU Cooperative Extension Service Report, Las Cruces, NM. Guide 100 B-14B.

### **Extension Proceedings**

1. **Mathis, C. P.** 2010. Nutrition Tools: Fat, Urea, and Organic Minerals. In: Proc., Southwest Beef Symposium. Tucumcari, NM. pp 26-32.
2. **Mathis, C. P.** 2009. Early Weaning Beef Calves. Early Weaning of Beef Calves. In: Proc, 55th Annual Texas A&M University Beef Cattle Short Course. College Station, TX. pp D5-11.
3. **Mathis, C. P.** 2009. Balance Input Costs and Cow Performance. In: Proc., Southwest Beef Symposium. Midland, TX. pp 23-30.
4. **Mathis, C. P.** 2008. Calf Weaning and Preconditioning: The Value of Forage-Based Approaches. In: Proc., Amazing Grazing Seminar. 41<sup>st</sup> Annual Convention of the American Association of Bovine Practitioners, Charlotte, NC.
5. **Mathis, C. P.** 2008. Preconditioning Programs: Approaches, Economics, and Subsequent Performance. In: Proc., Plains Nutrition Council. San Antonio, TX. pp 25-35.
6. **Mathis, C. P.** 2008. Calf Management: Weaning to Shipping. In: Proc., Southwest Beef Symposium. Roswell, NM. pp 35-40.
7. **Mathis, C. P.**, S. H. Cox, M. K. Petersen, and C. A. Löest. 2007. Low-input Pasture vs. High-input Drylot Backgrounding: Research Report. In: Proc., New Mexico Cattle Growers' Short Course. Raton, NM. pp 22-26.
8. **Mathis, C. P.**, G. R. Hagevoort, and M. K. Petersen. 2007. Using Byproduct Feedstuffs: Cow-calf. In: Proc., New Mexico Cattle Growers' Short Course. Clovis, NM. pp 31-40.
9. **Mathis, C. P.** 2007. Cow Type and the Southwest Environment. In: Proc., Southwest Beef Symposium. Amarillo, TX. pp 8-15.
10. Löest, C. A., and **C. P. Mathis**. 2006. Byproduct Feedstuffs: Ruminant Nutrition Fundamentals. In: Proc., New Mexico Cattle Growers' Short Course. Clovis, NM. pp 18-24.
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