

# Proceedings of the 37th Annual Kentucky Alfalfa and Stored Forage Conference

**Presented by:**

Kentucky Forage and Grassland Council  
University of Kentucky College of Agriculture, Food, and  
Environment



Thursday, February 22, 2018  
Cave City, KY

***Editors: Dr. Chris Teutsch and Christi Forsythe***



# Schedule of Events

- 8:00 (CST) Registration and Exhibits
- 8:45 **Welcome**  
*Dr. Ray Smith, University of Kentucky*
- 9:00 **Fine tuning varietal selection for the Mid-South**  
*Dr. Ray Smith, University of Kentucky*
- 9:20 **Getting off to a good start: Alfalfa Establishment**  
*Dr. Chris Teutsch, University of Kentucky*
- 9:40 **Fertilizing high producing alfalfa stands**  
*Dr. Edwin Ritchey, University of Kentucky*
- 10:00 Break and Exhibits
- 10:30 **An integrated approach to weed control in alfalfa production systems**  
*Dr. J.D. Green, University of Kentucky*
- 10:50 **An integrated approach to pest management in alfalfa production systems**  
*Dr. Lee Townsend, University of Kentucky*
- 11:10 **Updates on disease management in alfalfa**  
*Dr. Kiersten Wise, University of Kentucky*
- 11:30 **Harvesting quality alfalfa**  
*Dr. Garry Lacefield, Professor Emeritus, University of Kentucky*
- 11:50 Discussion
- 12:00 Lunch
- 12:50 Alfalfa Awards and Silent Auction Results
- 1:15 **How Growing Degree Days affects alfalfa frost damage**  
*Dr. Matt Dixon, University of Kentucky*
- 1:35 **Mechanization to optimize alfalfa harvest efficiency**  
*Industry Representative*
- 2:05 **Emerging export markets for high quality alfalfa hay**  
*Tom Keene, University of Kentucky*
- 2:25 **The future of alfalfa: Understanding GMO traits and their impact on production and marketing**  
*Industry representative*
- 3:05 **Discussion and Survey**
- 3:30 Adjourn



# Alfalfa and Forage Research Program

## USDA-National Institute of Food and Agriculture

The Alfalfa and Forage Research Program (AFRP) is an alfalfa-oriented, integrated research and extension program that supports technology transfer to improve overall agricultural productivity, profitability, and conservation of natural resources through conventional and organic forage and seed production systems. The AFRP encourages applicants to establish interdisciplinary and multilocation regional research and extension networks to address national priorities or regional science needs of the U.S. alfalfa forage industry. By bringing together expertise across multiple university, federal agency, and industry organizations and states, AFRP projects seek to enhance the effectiveness of limited state, federal, and industry resources and so produce greater long-lasting impacts.

In FY 2018, AFRP will support the development of improved alfalfa forage and seed production systems, practices, and supporting technologies. NIFA is soliciting applications for the FY 2018 under the following areas:

1. Increase alfalfa forage and seed yields and forage quality through improved management practices, plant breeding, and other strategies to reduce biotic and abiotic stresses and costs of production.
2. Improve alfalfa forage and seed harvest and storage systems to optimize economic returns to alfalfa producers as well as end-users including milk producers.
3. Develop methods to estimate alfalfa forage yield and quality to support marketing as a livestock feed and instruments to reduce producer risks.
4. Explore new uses for alfalfa such as in fish feeds, nutritive supplements, high-value chemical manufacturing, or other novel uses.
5. Conduct life cycle analysis for all or a part of an alfalfa production system for enhancing field to market opportunities.

To find out more about projects that have been funded by the Alfalfa and Forage Research Program please visit the [USDA-Current Research Information System](#).

*This is adapted from Alfalfa and Forage Research Program (AFRP), FY 2018 Request for Applications (RFA), USDA-NIFA, Washington, DC.*

*The 37<sup>th</sup> Annual Alfalfa and Stored Forage Conference held in Cave City, KY on February 22, 2018 was supported by a grant from the Alfalfa and Forage Research Program.*



United States Department of Agriculture  
National Institute of Food and Agriculture



# FOREWORD

Thanks to the leadership of Drs. Garry Lacefield and Ray Smith, the Kentucky Alfalfa and Stored Forage Conference has been educating alfalfa producers for the past 36 years. The University of Kentucky and the Kentucky Forage and Grassland Council are excited to continue this tradition. The focus of this year's conference is intensive alfalfa management. The topics covered will remind participants of best management practices that they may be familiar with and update them on new and emerging technologies and markets. I am truly excited about the future of alfalfa production in the Commonwealth of Kentucky and opportunities to develop new markets that may extend beyond our borders! It is my sincere hope you will go away from this conference with at least one idea or practice that you can implement to improve your overall production or marketing program.

On behalf of the program committee, I want to thank the Kentucky Forage and Grassland Council for their continued support of this program. Special thanks to the speakers for providing their presentations and papers for the proceedings. This meeting would not be possible without the support of the many exhibitors as well; please take a moment to visit with them during the breaks. Special thanks are extended to Mrs. Christi Forsythe for her patience and effort in preparing and editing the Conference Proceedings.

I would encourage you to take a moment and check out the NEW and IMPROVED *UK Forage Extension Website* at <http://forages.ca.uky.edu/>. The site has been reformatted and is now mobile friendly, enhancing your viewing experience when using phones or other mobile devices. I would also encourage you to visit the *KYForages YouTube Channel* at <https://www.youtube.com/c/KYForages>. Here you will find more than 175 videos focusing on forage management. In fact, for the first time ever, presentations from this conference are being recorded and posted on this website. Lastly, if you are not a subscriber to the UK Forage Newsletter, please take a moment and click the subscribe button found on the top left hand corner of the UK Forage Extension website. This monthly newsletter provides timely articles and forage management tips.

Sincerely,



Chris D. Teutsch, PhD  
Program Chairman and Forage Extension Specialist  
University of Kentucky Research and Extension Center at Princeton





# Table of Contents

	Page
Fine tuning varietal selection for the Mid-South . . . . .	1
Getting off to a good start: Alfalfa Establishment . . . . .	8
Fertilizing high producing alfalfa stands . . . . .	17
An integrated approach to weed control in alfalfa production systems . . . . .	23
An integrated approach to pest management in alfalfa production systems . . . . .	29
Updates on disease management in alfalfa . . . . .	39
Harvesting quality alfalfa . . . . .	41
How Growing Degree Days affects alfalfa frost damage . . . . .	45
Emerging export markets for high quality alfalfa hay . . . . .	55
The future of alfalfa: Understanding GMO traits and their impact on production and marketing . . . . .	59

