

GETTING THE MESSAGE ACROSS TO FARMERS

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Gastro-intestinal parasites are the primary health problem affecting small ruminants (1,2). Anthelmintic resistance has worsened the situation. Resistance is a worldwide problem. In response, the FAMACHA© system and Five Point Check© were developed by South African researchers to provide sheep and goat farmers with practical, on-farm tools that they can use to make deworming decisions and manage anthelmintic resistance. The challenge is getting this message across to farmers and getting them to adopt these new technologies.

Cooperative Extension

In the United States, it is the mission of the land grant university system to disseminate research-based information to farmers and to encourage adoption of related technologies. There are county extension offices in most states in the United States.

Cooperative Extension (Extension) is a nation-wide, informal educational network that brings the research and knowledge of the land grant university to people in their homes and farms. It links over 2,900 county extension offices, more than 100 land grant colleges and universities, and the federal government.

In 1862, the Morrill Act established land grant universities (in each state) to teach citizens about agriculture, home economics, mechanical arts, and other practical professions. In 1890, the second Morrill Act applied land grant status to various colleges and universities in the former confederate states to improve educational opportunities for black Americans. Similar status was applied to tribal colleges in 1994 to better serve the Native American (Indian) population.

Extension was formalized in 1914 by the Smith-Lever Act, which established a partnership between land grant colleges and the US Department of Agriculture to provide extension work. Throughout history, Extension has played a vital role in improving the efficiency of agricultural production. Today, while it serves a more diverse audience and operates with fewer resources, Extension continues to serve the educational needs of the public, including small ruminant producers. In fact, recognizing its continuing importance, many federal granting agencies now require an outreach (extension) component to grant proposals.

American Consortium for Small Ruminant Parasite Control

The Southern Consortium for Small Ruminant Parasite Control (SCSRPC) was established in 2003 to address the growing problem of anthelmintic resistance in the US small ruminant industry (5). In 2012, as the membership of the consortium expanded, the name was changed to the American Consortium for Small Ruminant Parasite Control (ACSRPC) and its scope was changed to national (3). The consortium also has several international partners and collaborators.

The ACSRPC is a group of scientists, veterinarians, and extension educators whose stated mission is to 1) Develop novel methods of sustainable control of gastrointestinal nematodes in small ruminants; and 2) Educate stakeholders in the small ruminant industry on the most up-to-date methods and recommendations for small ruminant parasite control (3).

Since 2003, members have received grant funds in excess of \$3.5 million to support the consortium's mission (4,5). Some of the initial research efforts involved documenting anthelmintic resistance and validating use of the FAMACHA© system in sheep and goats in the United States. Other research projects have focused on novel methods of parasite control, such as copper oxide wire particles, sericea lespedeza, and nematode-trapping fungus (4). Extension (outreach) has been an important component of all grant-funded projects and is one of the primary missions of the consortium (3).

Web Site

In 2004, the Southern Consortium for Small Ruminant Parasite Control established a web site at www.scsrpc.org. Additional domain names were added and redirected to the original domain. The web site

underwent significant redesigns in 2012 and 2013. It was moved to a new server and has a new webmaster. The domain names were changed to www.acsrpc.org and www.wormx.info.

The primary purpose of the web site is to provide small ruminant producers with information on sustainable gastro-intestinal parasite control. It is a place where members of the consortium can share the results from their latest research project or a new resource they have developed. The web site provides listings of certified FAMACHA© instructors, as well as upcoming FAMACHA© workshops and similar events. Each month, a different member of the consortium writes a "Timely Topic" that is featured on the web site. A frequently asked questions section has also been added to the web site. In 2014, the web site received as many as 4000 page views per month (8).

Train-the-trainer

In 2006, the consortium received a grant to develop curriculum for FAMACHA© instructors (trainers). Educational materials included a three-ring binder, a CD-ROM, and a PowerPoint (flash) presentation. Materials contained in the binder and on the CD-ROM are available on the consortium's web site. Currently, the materials are in the process of being updated. Instructors are free to modify the materials to suit their own educational needs.

FAMACHA© Workshops

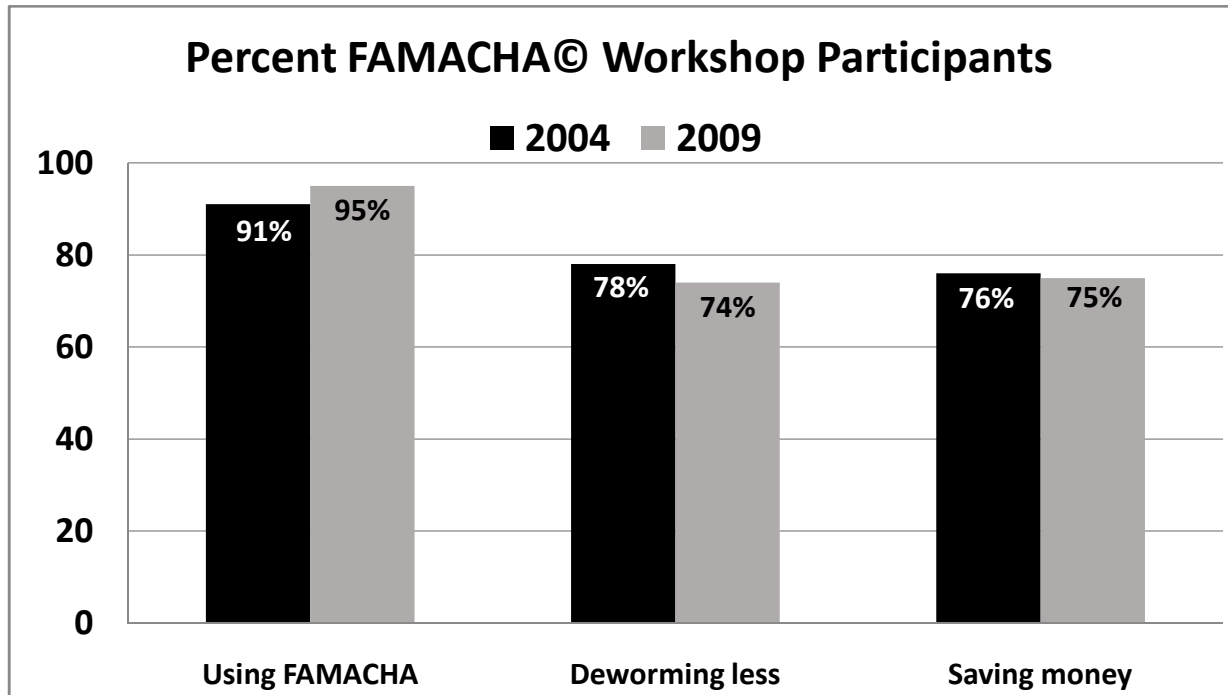
FAMACHA© (also called Smart Drenching and Integrated Parasite Management/IPM) workshops have been at the core of the consortium's outreach efforts. The first FAMACHA© workshops were held in Georgia and Florida in the spring of 2003 (5), followed by similar workshops in Alabama, Arkansas, Louisiana, Maryland, Oklahoma, Texas, Puerto Rico, and the US Virgin Islands (5). Since 2003, over 35,000 FAMACHA© cards have been sold to over 40 states and various Caribbean and Latin American countries (10). The University of Georgia College of Veterinary Medicine is the sole US distributor of FAMACHA© cards.

Impacts of FAMACHA© workshops

The impact of FAMACHA© workshops has been documented on at least two occasions (6,7,9). In 2004, ninety participants in FAMACHA© workshops, primarily in the northeastern US, returned a mailed survey. According to survey results, 91.1 percent of workshop participants were using the FAMACHA© system to make deworming decisions. Sixty-four percent were having less problems with internal parasites in their flocks and herds (6,7). Seventy-eight percent were deworming their animals less often, and 75.6 percent reported spending less money on anthelmintics (6,7)

According to pre- and post-tests given at workshops, workshop participants increased their knowledge of internal parasites by an average of 30-40 percent (6,7). In addition to using the FAMACHA© system, workshop participants were implementing various other best management practices to control internal parasitism, including pasture rest-rotation, 61 percent; supplemental nutrition, 54 percent; periparturient dewormings, 51 percent; and genetic selection, 49 percent (6,7).

In 2009, a larger, more formal survey was conducted by the American consortium for Small Ruminant Parasite Control and published in the *Journal of Veterinary Parasitology*. Surveys were returned by 729 participants, primarily from the southern and Midwestern United States. According to survey results, 95 percent of respondents felt that the FAMACHA© training had made a difference in their abilities to control and/or monitor internal parasitism in their flocks and herds (9). Eighty-seven percent of respondents indicated that they were using the FAMACHA© system to make deworming decisions (9). Seventy-four percent were deworming less frequently, and 75 percent saved money in the first year after taking a FAMACHA© training (9). In addition to FAMACHA©, the most common best management practices being implemented were rotational grazing, 77 percent; and genetic selection, 53 percent (9).



The future

While surveys show that FAMACHA© workshop participants are using the FAMACHA© system and other best management practices, and the web site is well utilized, a National Animal Health Monitoring system (NAHMS) study showed that only 14 percent of goat producers were using the FAMACHA© system in 2009 (2). While this study is now dated, it emphasizes the need for continued educational efforts.

Education will continue to be provided by Cooperative Extension and the American Consortium for Small Ruminant Parasite Control. Workshops will target all small ruminant producers (sheep, goat, and camelid), as well as veterinarians, extension agents, and other animal health professionals.

There is a strong need to certify more FAMACHA© instructors and to provide educational opportunities to producers in the more northern and western states. There continues to be an opportunity to provide training to small ruminant producers in other countries, especially Latin America.

Online FAMACHA© training and certification needs to be explored by the consortium. Online training would be particularly suitable for producers who lack qualified extension programs in their county, state, or country. Online training could also be utilized for veterinarians, veterinary technicians, veterinary students, and other students.

Additional educational materials, including research outcomes will continue to be posted to the web site as they become available. The web site will be expanded and continue to play an important role in the educational efforts of the consortium. It was recently redesigned using wix.com.

References

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