INTERNET-BASED EXTENSION PODCASTS FOR TILAPIA FARMERS IN THE PHILIPPINES

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ABSTRACT

The goal of this investigation was to establish a specialized, internet-based delivery system for news and technical developments of interest to tilapia farmers. We developed the first Tilapia Podcast as an additional means to disseminate tilapia culture information to the scientific, business, government and farming communities of the world. The podcast has an 18-minute vocal track evaluating two popular tilapia culture reference texts, Lim and Webster (2006) and El Sayed (2006). Recorded vocal analysis of the utility of these reference materials is accompanied with a series of ~ 60 photographs of tilapia farming and cultivation centers in the Philippines, along with a musical soundtrack. The podcast was circulated internally and subjected to review with AquaFish CRSP and US Department of Commerce. Following extensive editorial revisions the podcast was approved. The podcast was subsequently launched at a workshop held at the Freshwater Aquaculture Center at the Central Luzon State University in the Philippines. The workshop was well attended by 84 participants, including farmers, feed manufacturers, the press, students and government officials. The workshop covered the concept of a podcast, a demonstration of podcasting, as well as lectures and discussion on practical cost-containment feed reduction strategies shown through on-farm trials to improve production efficiency of tilapia farming. The podcast was met with considerable enthusiasm and was loaded on the computing facilities at FAC-CLSU for access by the Luzon community. The podcast was uploaded on iTunes U (University) on the North Carolina State University server, which is configured to collect data to quantify the number of podcast uses or "hits". Use of the podcast on the NCSU server has been excellent with 76 downloads and 262 hits over a 7-month period. Collectively, we demonstrated that podcasting is a viable, alternative extension tool for disseminating information to the aquaculture community. The podcast approach is far thriftier, more easily updated, and more efficient than the distribution of printed media. Podcasts are not only more economical and easily updated than printed media, they are more far-reaching and vastly less consumptive of natural resources than virtually any other available method of distribution of extension information. With the continued growth of smart phones, MP3 players, and other devices in the Philippines and the world we anticipate the Podcast will be a highly attractive to for

dissemination of information on farming tilapia and other cultivars. Future activities will establish a series of shorter podcasts that provide information on technologies and procedures for farming tilapia more efficiently.

INTRODUCTION

Podcasting is an internet-based communication method that is increasing sharply in popularity. Contrary to a popular misunderstanding, the use of podcasts is not restricted to owners or users of iPods, and neither an iPod nor other MP3 player is actually necessary. Podcasts are information broadcasts that can be retrieved and played using any computer or other devices equipped with Internet access. With a podcast, freshly updated sound and/or images and video can be distributed economically to Internet users worldwide, and the use of this means of communication is very much on the rise. To our knowledge, the potential for podcasting for the benefit of aquaculture farmers has only recently been adopted (University of California - Davis and others) and none has been developed as an extension tool for developing countries.

In the course of our studies, we have generated considerable technical information of practical utility to farmers in the Philippines. For the most part these have been feeding parameters and strategies that enable farmers to reduce production costs without any negative impact on productivity (Bolivar et al. 2006). We have also developed a molecular method that provides a rapid assessment of growth rate (Vera Cruz et al. 2006) that has the potential to increase the pace of methods testing and practical technical advances that could help farmers.

Our approach to extension work has involved active interfaces with farmers on a variety of different levels. We have produced and distributed pamphlets, held training sessions and hosted numerous workshops at the Freshwater Aquaculture Center at Central Luzon State University (CLSU). We have also found that the active participation of farmers in experimental field trials (Bolivar et al. 2006) assists dramatically in getting the news out, particularly when excellent yields and lowered production costs are part of the equation; farming methods established in this manner have been adopted quickly and broadly. In short, we find tilapia farmers in Luzon, the Republic of the Philippines to be accepting and appreciative of extension work from CLSU.

Our extension activities have also included the establishment of an internet-connected computing center, which has drawn and retains the interest of both students and farmers. This center is on campus at the Freshwater Aquaculture Center, and is visited routinely by aquaculture farmers in that region. Use of this center by students, farmers, and faculty has been heavy. Internet access is growing in the Philippines with about nine percent of citizens currently wired for access. This rate is increasing rapidly, and it is supplemented by the appearance of numerous campus computing centers and Internet cafes to which farmers have access. Moreover, most Filipinos use wireless phone technology and many use MP3 players, so it is becoming very much the case that podcasts can easily be uploaded and viewed around Luzon Island. The goal of this investigation was to establish a specialized, internet-based delivery system for news and technical developments of interest to tilapia farmers. Our short-term goal was to develop and assimilate tilapia-related news into a podcast, in an objective way that will keep farmers and the aquaculture community up to date. In the longer term, we plan to deliver these announcements as well as practical technologies for tilapia farming as serial “Podcasts” to which internet users and the farming community can subscribe at no cost.

OBJECTIVES

1. To develop a tilapia podcast that summarizes tilapia-related publications and news into an internet-friendly broadcast

2. To conduct a workshop and provide this *Tilapia Podcast* to the computing center at CLSU on a trial basis, for access to and feedback from appropriate user groups (aquaculture farmers, students, and faculty).

3. The workshop will also serve as a classical outreach activity for providing farmers with the latest information and training on best management practices for pond-cultured tilapia.

RESULTS AND DISCUSSION

This investigation began with a learning process to use standard but unfamiliar software and hardware that are favored for the production of podcasts. Garage Band, a program that is commonly used on Apple computers, was selected for our podcast production effort. As proposed, the subject matter was selected to focus on matters of practical interest to commercial tilapia farmers in Luzon, Philippines. It was also our intention for this podcast to contain information that would be useful to aquaculture students and scientists, particularly those at the Freshwater Aquaculture Center (FAC) at Central Luzon State University.

Our initial podcast has an 18-minute vocal track evaluating two popular tilapia culture reference texts, edited by Lim and Webster (2006) and El Sayed (2006). This podcast was designed to contain oversight into these two texts, but with a lighthearted and loosely structured photographic essay on the subject of tilapia farming in the Philippines. Recorded vocal analysis of the utility of these reference materials is accompanied with a series of ~ 60 photographs of tilapia farming and cultivation centers in the Philippines, along with a musical soundtrack.

Compliance of the podcast with copyright was a challenge. In order to remain compliant with these laws, an effort was made to obtain permission to use commercially recorded music for the soundtrack by sending draft podcasts along with requests to the holders of four such copyrights. Two did not respond, one responded negatively, and a fourth responded that they would be unable to respond.

Consequently, non-copyrighted music recorded by a fellow NOAA employee was used, for which we thank Dr. Gary Wikfors, NOAA Biotechnology Branch. After extensive editorial work, the finished podcast was circulated internally and subjected to formal review and approved by the US Department of Commerce. It was also submitted to be considered for review by the US Agency for International Development, but suitable review procedures were not yet in place for this medium.

See http://web.mac.com/poptard/Site/Podcast/Podcast.html
Following the approval of this podcast by NOAA, it was uploaded to the North Carolina State University (NCSU) iTunes U (University)server, which is configured to collect data in order to quantify the number of podcast uses or "hits". The link to that podcast follows.

http://deimos.apple.com/WebObjects/Core.woa/Browse/ncsu.edu.1784740579.01784740581

A second podcast was assembled to address the nutritional value of tilapia, and about 35 hours of labor was invested. Regrettably, the portable computer on which it was stored was stolen with the nutritional podcast on the hard drive at ~ 90% completion; future podcast work will be backed up on a secure desktop machine.

A workshop for farmers and students was held in Luzon at the Freshwater Aquaculture Center during the second week of January 2009. This workshop launched the Tilapia Podcast and provided extension activities to promote students and fish farmers to use online information in their tilapia culture work. The workshop also provided information and presentations on alternative feeding strategies for farmers.

Figure 1. Tilapia Podcast Workshop, CLSU Freshwater Aquaculture Center, January 2009

The workshop was very well attended, with approximately 84 registered participants at the Phil-Sino Center for Agricultural Technology at Central Luzon State University. Participants included various members of the farming community, feed companies, government representatives (local and regional), media, and university students, staff and faculty. An apparent majority of the participants in the Tilapia Podcast Workshop held January 12-13, 2009 were initially unfamiliar with podcasting. A practical demonstration of methods for producing podcasts was provided. Podcasting was presented as an internet-based sharing of digitized information, similar to blogging or the use of YouTube. Blogs consist of written words or text files, and YouTube is a medium for the presentation of video material, but podcasts incorporate audio or sound files and have the option of using graphs, still photographs, and animated visual files as well. They also differ in the sense that they are available by free subscription. The advantages of podcasting as compared to other digital media, and also as compared with the printing of brochures, journals, and books were discussed at the workshop. Questions frequently arose about updating brochures not only to

refresh their content, but also to produce them for distribution in alternative languages. Most important among the numerous and positive reasons to venture into podcasting were the facts that it is a very thrifty technology, CLSU is an internet-savvy environment, and the material disseminated this way can be updated and distributed, repeatedly if necessary, at extremely low cost. Overall, the workshop was met with considerable enthusiasm and the podcast was loaded on computing facilities at CLSU. The activities were subsequently featured in two articles, "Tilapia Podcast in the Web" and "Tilapia Feeding Strategies for More Income" by Dr. Sosimo Ma. Pablico, published in the March and April 2009 issue of the Agriculture Magazine of the Manila Bulletin (ISSN 0118-857-1).

Very few earlier attempts have been made at aquaculture-related podcasts. The University of California published a series in early 1997, in the MP 3 or sound-only file format. By using sound alone, the result of podcasting is in many ways comparable to the use of a recorded lecture, or a radio production of a sound track containing educational information. These lectures along with others are still available for free on the iTunes store website (URL) and are a pioneering and valuable contribution. Podcasting, nevertheless, has broader potential that these initial efforts did not exploit – in particular, podcasting is capable of including a visual dimension in addition to sound. Our podcast, in contrast, included a visual photographic essay along with vocal and music information.

Use of the podcast on the NCSU server has been excellent; figures supplied by system administrators indicate that this podcast was downloaded 76 times, previewed 60 times, and browsed 126 times over a 7-month period. The number of total hits on the podcast over this period was 262 (Table 1).

Finally, information on three effective cost-containment feeding strategies, largely demonstrated on-farm in Luzon, were provided and discussed. This included delayed feeding, 67% subsatiation feeding, and alternate day feeding strategies that were shown to reduce feed costs without negatively impacting yield (Bolivar et al. 2006). Farmers were particularly interested in these alternative farm management practices and anticipate testing them in the future. Future outreach activities will incorporate traditional extension fact sheets and podcasts to demonstrate the alternative feeding strategies and procedures to implement them.

Table 1. Quantification of Tilapia Podcast access from the North Carolina State University server. Rows indicate the number of "hits" in each month from left to right, while columns indicate the type of "hits" over the seven month period including browses, download previews and downloaded tracks. There were 262 total hits over the seven-month period from July 2009 – January 2010.

Period	Browse	Download Preview	Download Track	Total
July 2009	13	1	10	24
August 2009	6	2	4	12
September 2009	3	2	2	7
October 2009	5	2	5	12
November 2009	34	16	25	75
December 2009	23	10	14	47
January 2010	42	27	16	85
Total	126	60	76	262

CONCLUSION

This investigation demonstrated the practical utility of podcasting as a means of disseminating detailed technical information on aquaculture to appropriate user groups in Luzon Island. A groundbreaking 18-minute podcast contrasted two excellent tilapia culture reference texts, by Lim and Webster (2006) and by El Sayed (2006). This podcast was deliberately configured with photographic images depicting tilapia culture in the Philippines, in order to maintain a high level of familiarity and comfort for the farmers in that area. It was launched at a well-organized workshop held at the Fisheries Aquaculture Center on the Central Luzon State University campus, where it was enthusiastically received. 84 participants were in attendance, including farmers, aquaculture students, representatives of the press, feed industry personnel, and government officials.

The community appeared to be highly receptive to this new mode of communication, and is certain to welcome the additional podcasts that are scheduled to be prepared in continuation activities.

LITERATURE CITED

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