

CLOSING ADDRESS: THE VIEW FROM OUTSIDE

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I travel between 100,000 and 150,000 miles each year studying 'whole-farm' systems based on forage and I write about these systems for readers of the Stockman and Grass Farmer in North America. A 'whole-farm' system includes not only the primary producers, but also its suppliers and service providers, including the research community. To be a successful whole, all of these elements must develop more or less simultaneously and unencumbered. Open and respectful communication between the various parts is critical to each participant's individual success. In other words, the success of any participant is dependant upon the success of the complete economic whole.

For example, often overlooked in New Zealand's dairy success is the highly competent service sector of AI technicians, forage contractors, forage knowledgeable fertilizer blenders and forage seed breeders, with all of this effort complemented by a comprehensive and effective extension effort. Even small items such as long climatic records of rainfall and expected grass growth are important components of the successful whole. As a result, I have seen dairy farmers, who have achieved average success elsewhere, move to New Zealand and become tremendously successful there. Contrariwise, competent expatriate New Zealand dairymen have struggled as much as domestic milk producers in North America, where the whole is still developing.

Pressure to create a new whole is created by economic pain. However, this pain is never felt equally by all producers at the same time. Producers who have paid off their startup costs and have achieved a reasonable volume are very resistant to any change that might threaten their hegemony. These producers tend to be both older and financially comfortable - two elements that create a natural resistance to change. Often, these are the same producers who have become titular heads of their commodity group and most active in politics. As a result, the political push is never for a new better whole but always for a better band-aid, that will allow the past to linger a little longer. Therein, lies the dilemma for researchers. To really make a difference, you have to be willing to take considerable political heat.

All breakthroughs are breakwiths. They require the development of a complete new whole. Therefore, all new ideas necessarily start with a very small number of adherents - most of whom tend to be young, vociferous and unconventional. They are sometimes referred to as the 'lunatic fringe'.

At many of the discussions of this Congress, one could clearly see the 'generation gap' between older researchers, who are trying to cling to their prominence, by defending the old paradigms, and the young opportunists, who have staked their professional futures on the development of the new. This process has resulted in spending scarce resource dollars to prove that new ideas are unworkable. Clearly, this situation is ridiculous. Successful systems always start with the desired end result and work backward from that goal. Piecemeal research can often lead to erroneous conclusions. For further enlightenment on how technological diffusion and change in systems takes place, the reader is referred to Rogers (1962), who studied the diffusion of hybrid corn technology in the U.S.A.

As an observer of management, Peter Drucker has pointed out that trying to superimpose a new idea on an old system can result in a

situation where we have all of the costs of the new and none of the benefits. A good example of this can be seen in North America, where confinement dairies are trying to add a pasture but not change anything else about their operations. Another example is recommending the grazing of beef cows on very high quality pasture designed for steers or dairy cows.

Often these mismatches are the result of researchers trying to build political acceptance for additional research funding by stretching their whole to include those for whom it was not really designed. However, the ultimate result is an increase in distrust among the producer segment toward all research when it proves not to live up to its promise.

Even without this challenge, there is an inherent distrust between the academic and the practitioner. The researcher wants the practitioner to acknowledge the value of his academic training, but the reverse is also true. The practitioner wants the academic to acknowledge the worth of his or her life experience. All trust-based relationships start with listening. Too much research is delivered from on high by people with only the vaguest grasp of the producers' economic reality. In fact, most of the research/producer interfaces, that I have attended, have actively discouraged producer questioning and contradiction. Another source of distrust is that no one trusts anything that is given to them free of charge. While many researchers are afraid of 'user pay' systems, it is the one best way to reconnect the researcher with the producer.

All new research ideas are delivered as 'trial balloons'. They are not fully thought-out or formed, nor can they be. It is only in the rough and tumble of the marketplace that new ideas are hammered into usable wholes or prototypes. Economic research has shown that the proportion of commercial producers who are willing to take an unfinished idea and refine it into a proven prototype is no more than two percent of the total.

If one takes all of the above into consideration, you will find that the total producer constituency for forage research in the U.S.A., for example, is not 1.2 million, as frequently advertised, but a maximum of 50,000 and a hard core of probably no more than 15 to 20,000. The majority of farmers and ranchers will not adopt a new idea until the majority of their neighbours adopt it. This is true regardless of the strength of your research or economic argument.

I believe that production research will have to increasingly be consolidated into larger wholes, that will serve coherent climatic regions rather than historic political subdivisions. Due to funding pressure, production research will have to be concentrated on the few things that really can make a difference. As an Irish researcher once told me: 'With user pay, research first gets a lot smaller, then it gets a lot better.'

While I have detected an undercurrent of pessimism and defeatism among forage researchers at this Congress, some factors to provide a renewed sense of optimism may have been overlooked. First and foremost, we are discovering some major human health benefits in meat and milk produced from forages, primarily those that are grazed. Research in the UK has found that grass-finished beef has four times the level of omega 3 fatty acids, that improve cardiovascular health,

compared to grain-fed beef. Research in the U.S.A. has found that milk produced from cows on grazed forages contains elevated levels of conjugated linoleic acid, that is anti-carcinogenic. Carotene, the source of the yellow colour in fat of cattle fed forages, has been found to be an antioxidant and may fight cancer. Thus, beef with yellow fat sells at a premium over beef with white fat in some European markets. What researcher would not want to work in a field that could be a major source of cancer prevention. Will research funds be limited for this kind of research? Definitely not!

Second, for the first time in 30 years in the northern hemisphere, forages and cash crops are increasingly on a level playing field. The recent conclusion to direct production subsidies in the U.S.A. is a major step in that direction. Therefore, I believe that the lower capital intensive production prototypes, currently seen in the un-subsidized southern hemisphere, will be the ones to develop in the northern hemisphere. This must be heartening to forage and grassland researchers in all parts of the world.

Production seasons in the northern and southern hemispheres, whether between hemispheres or between or within countries, are inherently complimentary. I predict that there will be increased north/south travel and comparison of notes to discover where and when any particular region has its most 'unreasonable advantage.' High cost, non-seasonal, production systems that have been propped up by direct subsidy or by import restrictions will not survive in a world that knows no national boundaries. In the southern hemisphere, there is a cultural respect for the inherent worth of forages. It is the lack of this culture in North America that is our major obstacle. Since cultural change comes fastest as the result of interaction with outsiders, our neighbours in the southern hemisphere can help us to create the cultural change in the northern hemisphere, that will be required to see forages as the centrepiece crop. The venue of the next Congress in Brazil and the timing in 2001 is an exciting prospect to further this communication!

In conclusion, for the researcher who is willing to explore new paradigms and adapt to new ideas, the next few years will be a time of great excitement!

LITERATURE CITED

Rogers, E.M. 1962. Diffusion of innovations. Free Press of Glencoe, New York, NY.