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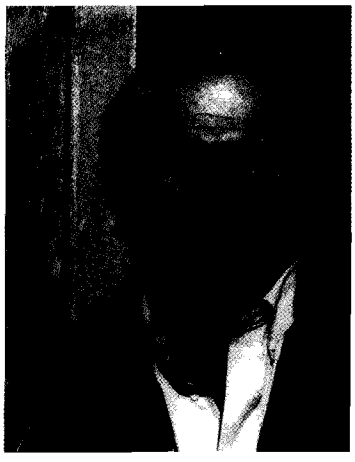
GUEST EDITORIAL



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Llaves, Voitures, and Tope [Keys (Sp.), Cars (Fr.), and Mud (Swahili)] — The Real Reasons Behind Success or Failure of Field Crop Protection Projects

Expatriate scientists frequently have opportunities to become involved in donor-funded technical assistance projects. Many of the projects are successful to varying degrees; many are not. Recent guest editorials in *Phytoparasitica* have discussed various needs and concerns related to crop protection research, funding, and implementation. I appreciate thoughtful comments and concerns expressed in many of them. It is not my

intent to diminish the seriousness of these writings by the approach I have taken. In this editorial, I simply would like to point out three, often ignored factors that can greatly impact successful vertebrate pest management (VPM) and other field-oriented management research. Those three factors are keys, cars, and mud! Not only expatriate scientists are affected by these factors. National scientists, administrators, and extension specialists work under the same conditions throughout their careers – not just during the short time period of an externally funded project. And it is my experience that these individuals also are extremely sensitive to such problems and go to great lengths to make the necessary adjustments to assure project success.

I have worked for 20 years in designing, implementing, managing, participating in, and reviewing short-term consultancies and long-term technical-assistance field research projects in over 30 countries of the world. The projects have been in applied VPM, an important component to increasing food production in impoverished countries (4). The projects have ranged in financial input from $10,000 short-term consultancies to several-million-dollar, 5- to 15-year-long institution building research projects employing resident biologists and numerous consultants. These activities have been conducted in many of the 15 countries identified by the Washington-based population Crisis Committee's "International Human Suffering Index" as the poorest countries in the world.

Success in applied crop protection research in such situations requires dedication, perseverance, patience, and luck, combined with a respect for and acknowledgment of the importance of working within social, cultural, technical, administrative, and logistical constraints. Numerous project management documents discuss and define the importance of recognizing how to work effectively within these constraints. Much also has been written on project success being based on an understanding of the need for social acceptance of new techniques, the respect for cultural norms within which advancements must be made, the development of technical skills, appreciation of the scientific method by counterpart scientists, the involvement of women, the effective use of extension capabilities, the importance of timely (yet spiraling) reporting to project administrators and donor organizations, and the use of the most recent computer programs to plan and track project performance. While the value of each of these components is clear and the relative importance of each can be debated, I believe that a case can be made for insufficient attention being paid to the truly critical factors upon which successful, crop protection research projects are based — keys, cars, and mud.

Keys. "The person with the key is not here." How often the field researcher hears these disturbing words! Whether it is the key to the project vehicle (which may be missing or even locked inside the vehicle), the key to the helicopter maintenance shed that holds the battery jump so desperately needed to get back into the air after greeting local officials, the key to the gate of the compound in which the researcher lives or the vehicle is stored, the key to the pesticide shed near the remote bush runway to which the ground research team has just spent 3 kidney-jarring days bouncing in a Landrover to prepare everything for the immediate arrival of a spray plane (which always has its own agenda and schedule), the key to the engine of the boat just rented to survey wildlife, or simply the key to the office bathroom – it's invariably with the one person who is not

there. And the keeper of the key, whether it is for the maintenance or pesticide shed, vehicle, housing compound, or office, takes the job seriously, never entrusting it to anyone else in his absence, irrespective of the length of time he may be gone! Furthermore, any attempt to determine the approximate duration of the delay can be met by "later" and "after tomorrow" — often as precise an answer as one can get. Such a response, though, leads to the next question: "Why is there only one key?" Locks in village shops and local markets are sold with two keys: where does the second one disappear?

Cars. A time-honored, culturally ingrained chain of priority-use exists for technical assistance project vehicles in developing countries. Vehicle availability is critical to field projects meeting the expected outputs listed in administrative tracking documents. But how many vehicles does a small technical assistance field project need? Definitely more than one, or the field research team risks getting its use only occasionally and perhaps not often when needed. Contrary to general thinking, if given the chance for input on vehicle purchasing, the field researcher may want to opt for a two-wheel drive vehicle, or the chances of the research team having a vehicle to use decreases even more. It is not uncommon to see more four-wheel drive vehicles on city streets than in the field. Likewise, to increase chances for field use of a vehicle to conduct project activities, one should consider purchasing the biggest, most gas-consuming, and most expensive to operate vehicle. This will allow a quick resolution of right-of-way confrontations on roads, reduce the likelihood that its use will be usurped, and generally assure that the internationally funded project is the only group able to afford its use. One's chances of getting into the field will also improve considerably if the vehicle has a roof rack to transport the various animals, charcoal, and other living necessities that are less expensive in the field than in town; this encourages field assistant involvement (assuming availability of per diem) and hence more rapid collection of data during trips.

Mud. Applied VPM field research often needs to be conducted with the individuals whom it will benefit. This has been referred to as Farming System Research (1), a concept that encompasses most, if not all, of the previously mentioned criteria for success. Yet, the best statistically designed research, the most comprehensive socioeconomic evaluations, the clearest appreciation of the need for cultural acceptance of research activities by local authorities and the attempts to meet administrative reporting deadlines all lie largely in the hands of fate — rain and the mud it brings to the outlying road transport system (or lack thereof) of so many tropical countries for several months of each year.

On many occasions, I or my research colleagues have had fieldwork delayed, been stuck in a camp or along a road, had vehicles slide off muddy rice scheme dikes and completely submerge in rice irrigation canals, lost or damaged research equipment, and been unable to take off from bush airstrips for from one to several days due to mud; and mud delays do not just affect the immediate research plans. They have a chain reaction impact not only on all project activities, but also even on nonwork-related family and social obligations, areas which can greatly impact the tenure of an expatriate scientist researcher in the country and may at their most extreme, ultimately determine a project's

fate. Even flexible schedules for travel, fieldwork, and necessary meetings can often become irrelevant. As a result, a researcher constantly faces the choice of either having to explain delays to every link in the reporting chain (including one's spouse) or, after a few such experiences, explain why no such schedule was even attempted and why he/she is working in an area of the country without providing prior notice to local officials — a generally recognized "big mistake."

Success in applied field research projects generally is based on solving problems through technical accomplishments that are environmentally, socially, and economically acceptable. Furthermore, achievements need to be disseminated through training, extension, and publication programs. Institutionalization of the program is often the ultimate goal. As mentioned previously, many administrators track how well projects meet expected outputs at different stages through various complicated monitoring programs. However, nowhere in these computer programs are allowances made for delays caused by keys, cars, and mud. Then again, nowhere in such programs are allowances made for delays due to lack of vehicle maintenance, numerous border and roadside checks of documents and research equipment, illness, and losing seats on planes to make space for goats, and sheep, or various plant stimulants that must quickly get to urban consumers before wilting. Even mentioning any of these kinds of factors as causes for delays in achieving expected project outputs is not very often acceptable. They are simply factors expected to be overcome by resourceful scientists in crop protection and other development projects.

The effectiveness with which a project operates within the constraints imposed by these factors will often impact the eventual implementation of research results as well as counterpart scientist and expatriate research careers. Anyone who has been involved in such field research projects probably can relate to them and present many more similar experiences. The chances of a project even being able to address the lengthy worded, complex, intimidating concepts previously mentioned in the context of agroecological, cultural, and socioeconomic circumstances facing developing country farmers (2) are greatly limited without an appreciation of the importance of the short words and simple concepts of *keys*, *cars*, and *mud*!

Conclusions

Crop protection research in the Tropics is always interesting and challenging, and usually professionally rewarding. Once involved, researchers often find it difficult to leave international research settings. However, the wise field scientist, when choosing such a career, will make Barley's (3) "The Innocent Anthropologist" required reading and purchase a very good pair of binoculars and a local bird guide. Even the most resourceful individual is going to have a considerable amount of time to add birds to one's life list, improve species distribution maps, or possibly even identify a new species while waiting for the key to be found, the vehicle to show up, or the mud to dry out.

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