In this issue

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This issue consists of an obituary, 10 original papers and two book reviews.

It is with considerable sadness that we report the death of Professor Brian Deverall. Brian was an inspirational figure in the world of plant pathology. His many contributions to the subject, which is of prime importance to food security, are reviewed by Greg Johnson, Richard Falloon and Lodovica Gullino.

The first two papers of this issue concern the exploitation of resources for greater food production. In the first of these, Nesar Ahmed and co-authors promote the practice of combining aquaculture and agriculture either on a pond basis or as a combination of rice and fish farming. These techniques not only have considerable potential for increasing food production and enhancing its nutritional quality but also reducing risks associated with water scarcity. In the second paper, Francesco Orsini and co-authors point out that now more than half of the world's population live in urban areas. This raises the question: to what extent can the urban environment provide food for its inhabitants? Taking Bologna as their experimental city, they report that roof top gardens have the astonishing potential to grow more than 12,000 tonnes of vegetables annually, which is equivalent to 77 % of the inhabitants' requirements.

The next paper by Melinda Smale and co-authors is concerned with the medium in which crop plants are generally grown – soil. Unfortunately, much of the soil in sub-Saharan Africa is of low fertility. Three practices, which are recommended to overcome this deficiency, are the addition of amendments, application of inorganic fertilizers and control of erosion – but adoption rates are low. As a result of a large econometric study in Western and Central Kenya, the authors

emphasize the importance of farmers being conversant with soil fertility management practices, security of tenure of the land they farm and enhancement of their access to markets. They suggest that these policies should particularly be targeted to women-headed households and young entrants into maize production.

Besides poor soil fertility in sub-Saharan Africa, pests and diseases are further constraints to agricultural production. One approach to tackling this problem is the establishment of plant health clinics. As reported by Solveig Danielsen and co-authors, the Ugandan government, in 2010, adopted plant health clinics in order to improve extension services for farmers and to contribute to the surveillance of plant disease. Unfortunately, the implementation of the programme has been impeded owing to changes in Government policies, which involved decentralization and reforms of agricultural extension. The authors conclude that their experience demonstrates the necessity of fully understanding the local political environment and taking it into account in order for such programmes to operate successfully.

Serge Savary's paper continues with the theme of plant health and is the first of several on this topic, which are planned for publication over the next few issues of the journal. He points out that “crop management and plant health management, are generally addressed as two distinct entities, the former often being seen as a source for options for the latter”. In contrast, he takes a more holistic approach, viewing both as parts of production situations. The paper is illustrated by models, taking into account, *inter alia*, whether the life cycle of the pathogen corresponds approximately to the growing season of the plant (monocyclic), severity of disease being principally contingent on the initial inoculum, or whether the pathogen has multiple cycles during the growing season (polycyclic), severity of disease being principally contingent on the secondary inoculum developed on the plant during its lifetime. The paper concludes with three examples of plant

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diseases and crop management: sheath blight of rice, coffee rust and *Fusarium* headblight of wheat.

The next four papers are all concerned in different ways with people's access to food. Céline Termote and co-authors collected and identified a formidable array of wild edible plants (WEPs) that grow in the buffer zone around the Lama forest in Benin and investigated the contribution some of these make to women's diets. They found that the diet diversity of those who consumed WEPs was greater than those who did not but the contribution of the wild flora to the diet was low owing to infrequent use and small portion sizes. The authors suggest that, before widely promoting the use of WEPs, further investigations should be undertaken into their nutrient composition, sustainable harvest levels and possible integration into the cultural and commercial life of the local people.

Kathryn Fiorella and co-authors investigated whether fishing households on Mfangano Island in Lake Victoria, Kenya, where non-native Nile perch were introduced in the 1960s, ate more fish and were more food secure than non-fishing households. Neither hypothesis was supported by the data they obtained: rather household food security was associated with higher incomes and asset index scores. Nile perch was predominantly sold and, indeed, Lake Victoria supports an international export market of this fish, prompting the question as to whether local hunger is associated with the growth of the Nile Perch fishery.

Street food plays a prominent role in urban food security in some cities, such as Madurai, the third largest city in Tamil Nadu, India. Here vendors, who themselves are poor, provide a variety of foods for the poor, among which millet-based porridges, which are nutritious and have a low glycaemic index, are popular. However, as reported by Kirit Patel and co-authors, this is not recognized in state-led food security policies, which view the urban poor simply as beneficiaries of subsidized grain and vendors of street food as public nuisances. To the contrary, the authors suggest that the state could improve urban food security by recognizing and strengthening the rights and capabilities of street vendors.

Vito Cistuli and co-authors draw attention to the fact that, although in aggregate a country may be food and nutrition secure, the figures may conceal large within-country inequalities and disparities and these tend to be greatest in Developing Countries. The paper highlights two opposing development policies; one "spatially-blind" which promotes economic agglomeration in the most dynamic areas of a country and the other, which takes the view that all territories matter and that policies should be tailored to the specific requirements of

each. Certainly it would seem that the latter policy would benefit the poorer territories more directly and prevent their being left behind, but rapid development of the most dynamic areas of a country is seductive. A combination of both policies would seem appropriate, definition of the optimal proportions of each presenting a nice econometric problem.

The last paper by Kees Olieman is relevant to everyone who is concerned with the safety of food and drink. The crux of the matter concerns the concept of zero tolerance. Zero cannot be measured but detectable amounts can. The problem is that, with increasingly sensitive analytical methods, the limits of detection have become ever smaller. Taking three compounds as examples, chloramphenicol, chloroform and clenbuterol for which the EU has a zero tolerance policy, the author points out that the first is still a widely used antibiotic in some parts of the world and can be found in the soil and the second can be found in tap water as a result of chlorination. The third is more problematic as it increases the muscle-to-fat body ratio, making meats leaner but its use, although popular, is illegal. For the same reason it is attractive to athletes but has been banned by the World Anti-Doping Agency (WADA). It is therefore possible that an athlete may innocently consume meat, which is contaminated with clenbuterol at a concentration that would not affect performance but would be detectable. A zero tolerance policy in these circumstances could result, in theory, in the athlete being banned from his competitive sport.

Peter Gregory was impressed with the monograph *Crop Yields and Global Food Security: Will Yield Increase Continue to Feed the World?* by R.A. (Tony) Fischer, Derek Byerlee and Greg O. Edmeades. As its title implies, the book is concerned with yield, as this is where the vast majority of the increased production needed to feed the world's population by 2050 will have to come from, rather than increased cropping area.

On a more light-hearted note, David Ingram reviews *The Insect Cookbook - Food for a Sustainable Planet* by Arnold van Huis, Henk van Gorp and Marcel Dicke (translated by Françoise Takken-Kaminker and Diane Blumenfeld-Schaap). Insects are becoming increasingly recognized as a valuable source of nutrition (two papers on the subject are currently being reviewed for this journal) and are a traditional food in some parts of the world. In other areas their consumption is viewed with revulsion if not downright disgust (the reviewer draws the line at a mealworm ice cream cornet!) but perhaps this book will inveigle the more adventurous into trying some of the dishes.