Food safety from farm to fork

A risk assessment approach to food safety in Vietnam is helping reduce risks of people contracting disease from pork products.
Food-borne disease is a major public health issue in Vietnam and other developing countries. In addressing food safety, a balance must be achieved between supplying the population with safe food and protecting the smallholder producers from unreasonable costs of doing so.

Contamination of popular foods in Vietnam, such as pork and vegetables, can occur all along the food value chain—anywhere from farm to fork. But just because a harmful substance or organism is present in food it does not necessarily mean it will cause illness. It is important to understand how and where the real food safety issues arise to work out the best options to prevent food-borne disease.

In Vietnam, risk assessment (RA) is emerging as a useful and innovative approach to manage food safety. This approach assesses the potential harm from disease-causing organisms or substances in food and estimates the likelihood that this harm will actually occur, all along the food pathway. It then identifies the critical points and management strategies that need to be applied to eliminate or minimise the risk.

The theory of RA is all well and good, but in Vietnam there is a lack of local capacity to apply it. The need is urgent, especially for Vietnam’s many wet markets, which are informal and unregulated.

Enter the RA task force for food safety, a new initiative to strengthen local capacity. The task force is bringing RA experts together with representatives from the ministries of health, agriculture and rural development. Through this connection, policymakers and implementers are gaining a better understanding of why RA is useful and how it can be used to effectively manage food safety.

One such expert is Dr Hung Nguyen-Viet, a scientist from the International Livestock Research Institute (ILRI) and deputy director of the Center for Public Health and Ecosystem Research at the Hanoi School of Public Health. He initiated the RA task force and is coordinating an ACIAR project using RA to reduce disease risk and improve food safety in smallholder pig value chains in Vietnam, being implemented by ILRI and Vietnamese partners.

Dr Nguyen-Viet was also a recipient of ACIAR’s John Dillon Fellowship of 2014, awarded to agricultural research managers at the forefront of their field. The Australian Minister for Foreign Affairs, The Hon. Julie Bishop MP, presented him with his award in March this year.

"Research on the pork value chain has highlighted hot spots for disease control," Dr Nguyen-Viet says. "For instance, it found that slaughterhouses are a major contamination point, particularly for the food-poisoning bacteria Salmonella."

The most common culprit for spreading these bacteria is the workers’ hands. This information suggests a good starting point for management would be to target slaughterhouse workers’ hygiene practices (e.g. emphasising hand washing) to reduce the risks of Salmonella poisoning.

The studies by ILRI have also brought surprises along the way. Analyses of pork sold in supermarkets and wet markets found that meat is often more highly contaminated in supermarkets. This is most likely because meat tends to sit on supermarket shelves longer before sale, allowing bacteria to multiply (even in refrigeration). The result has changed the mindset on the perceived riskiness of wet markets versus supermarkets.

Another study of household cooking and eating habits in Hanoi revealed that people’s food-preparation methods put them at risk of spreading contamination from raw pork to other foods. But since it is extremely difficult to change the behaviour of millions of meal-makers, the best interventions to improve this situation should be made before consumers even buy their meat. Dr Nguyen-Viet says interventions should also be incentive-based for different stakeholders involved in the pork value chain.

Dr Nguyen-Viet’s research is providing invaluable evidence and insights to inform pork safety policy and practices in Vietnam. Further research will be needed to assess health-related risks in other important foods and identify the best options to manage them. Lessons learned will be useful not only to Vietnam, but also to other similar countries. Using RA is going to have a significant impact on the health of millions of people.

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More information: http://pigrisk.wikispaces.com

Healthy pigs, healthy people
In many developing countries, free-ranging animals live closely with people resulting in some villagers contracting zoonotic diseases (diseases that can affect both humans and animals). An ACIAR project in Lao PDR recently found that zoonotic worms in pigs are particularly common in some villages.

These include Taenia solium, a tapeworm that can cause significant brain damage in people and several gastrointestinal worms that consume vital nutrients and contribute to a range of nutritional deficiencies, which can be especially detrimental to children.

The project team, which includes staff from the Lao Ministry of Health and the Department of Livestock and Fisheries, embarked on a mass drug administration to treat the worms in pigs and people in one of the villages. Two rounds of treatment have been completed and early monitoring suggests that the number of worms present among villagers has significantly decreased. Several villagers that were interviewed have reported feeling much better.

Ongoing monitoring will further assess health and nutrition benefits. The team is also investigating other risk factors that may contribute to the high levels of worm infection, including the cultural practice of consuming raw pork. – EMMA ZALCMAN

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