

Experiences With Implementing HACCP Based QA Programs in the Horticultural Sector

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ABSTRACT

There are many reasons why organisations implement quality systems. For many it is because the customer requires it. This situation is no different within the horticultural industry. The customers of fruit and vegetable producers - major chain supermarkets, market agents and distributors are insisting that their suppliers implement a HACCP based quality system.

This paper reviews some of the lessons learnt by a number of small, family based fruit and vegetable grower, packer and distribution businesses and their consultant whilst working together through the medium of action research.

Keywords: Quality Systems, Horticulture, Hazard Analysis Critical Control Point (HACCP)

Introduction

Imagine that you are a small, family based, horticultural business. You grow and pack strawberries and have been doing so for the last twenty years on a 3 hectare block just out of Melbourne. Business has been good because of the hard work you and your family has put in. You can sell just about everything that you can grow and have regular customers such as a major chain supermarket, market agents in Sydney and Brisbane, and you have a stall in the Melbourne Market.

Within the space of a few weeks your business is invited to join the supermarket chain quality system and the market agents are saying that they are having increasing difficulty selling your produce because it is not quality assured. What are you going to do?

You begin to ask yourself a number of questions:

- Why do you need a quality system in the first place when you have been producing top quality produce for years?
- Will a HACCP based quality system work?
- Why won't one system satisfy all customer's requirements?
- What will you get out of it?

Why Do You Need A Quality System?

Anecdotal evidence suggests that there are a number of reasons why fruit and vegetable growers and packers need and are implementing quality systems:

- Food safety concerns are causing retailers, processors, market agents, exporters and other customers handling fresh fruit and vegetables to implement HACCP based quality systems. This is having a flow-on effect with an increasing number of these strongly suggesting, if not demanding, that growing and packing operations have a HACCP based quality system in place. The reasons for implementing a quality system and even aspiring to formal certification are not unlike those in other sectors involving small businesses in Australia and overseas (Boon & Ram, 1998, p. 21; Brown et al., 1998, p. 273; Bryde & Slocock, 1998, p. 468; Jones et al., 1997, pp. 651-52).
- In some cases quality systems are determining market access. No quality system - no access (or future access) to a particular market. From the other perspective, quality systems are enabling growers and packers to win and keep profitable markets.
- Quality systems are offering better control of the business throughout the scope of operations resulting in a more consistent quality of produce.
- The customer-supplier relationship is being seen as more important. Suppliers and customers are looking for longer term relationships and see the link that quality systems can provide as being a positive step towards this particularly when they work together to determine produce specifications and delivery schedules.

Will A HACCP Based Quality System Work?

This question requires addressing from two directions. Firstly, will the HACCP based quality system assist the horticulturalist to do the job that is intended – identify, evaluate and control food safety problems? Secondly, will they be able to develop, implement and maintain such a system?

Will HACCP Assist Horticulturalists To Identify, Evaluate And Control Food Safety Problems?

In the first instance, anecdotal evidence strongly suggests that HACCP based quality systems can assist horticulturalists to identify, evaluate and control potential food safety problems. The HACCP method has been applied by a wide range of fruit and vegetable growers, packers and distributors including those working with produce such as table grapes, potatoes, onions, asparagus, strawberries, capsicum and carrots.

Growers and packers have found that HACCP provides them with the wherewithal to look at current operations afresh - to see things from a different perspective. HACCP has prompted questioning as to why certain parts of the operational process are done or not done. Potential food safety problems relating to agricultural chemical residues in the soil and in the produce itself, microbial contamination from water source and physical contamination due to bin and tray cleanliness and harvest techniques have been experienced. The questioning and subsequent problem-solving activities relating to the HACCP method has given

horticulturalists a new understanding of what they do and the stimulus to improve their methods. This is resulting in safer and consistently higher quality produce. Importantly, the food safety and quality risks are being addressed prior to potential incidents rather than after the fact.

HACCP has indeed increased grower / packer understanding of their processes and facilitated a more effective control of the business.

Will The Small Horticultural Business Be Able To Cope?

The second part of the question is a little more difficult to answer. Much will depend on those factors that many businesses face with any form of quality system (Brown, 1999, pp. 471-472, Brown et al. 1998, pp. 282-284, Brown & van der Wiele, 1995). These include:

- Commitment / involvement.
- Training.
- Allocation of sufficient resources.
- Control of essential processes etc.
- Interpretation of the quality system requirements.

Commitment / Involvement. In my experience, where the small, family based business has demonstrated substantial and ongoing commitment, the success rate of development and implementation of HACCP based quality systems is high. Those businesses which have aspired to go further and seek external recognition e.g. certification to SQF 2000, have achieved their aim. Where such commitment has not been evident, the success rate declines dramatically. Obviously, the less complex the operation and the more simplistic the quality system requirement, the greater the opportunity for success.

Brown (1999, pp. 471-472) suggests that small businesses are strongly influenced by the attitude and values of the manager. If they are positive towards quality there is little scope for employees to avoid being involved. When the enthusiasm and vision of the manager is obvious to all employees, employee participation can be straightforward and does not pose any major difficulties.

Commitment / involvement must also go beyond the family management team. It is essential that everyone who is employed within the business is involved. We are finding that management can no longer afford to depend on key individuals alone (often themselves) to keep processes in control and work the entire operation. They have had to give up some of the traditional management tasks and place such responsibilities with other members of the full-time and casual staff. Businesses are also becoming more aware that all members of staff have an important role to play in relation to produce quality.

Training. Implementing the HACCP method has resulted in a positive move towards the training and development of employees particularly when they are involved with critical aspects of the businesses' operation. This has included:

- a. agricultural chemical usage.
- b. harvesting techniques and quality control.
- c. grading and packing.

Training is a central element of successful quality management. Training also facilitates practical and thoughtful problem-solving and decision-making on the job, and when supported by management, empowers employees to do the job the way that the management team would do it themselves. This promotes good farm / business practices all round.

Small businesses often face a number of problems regarding training. They generally do not have the resources to develop and manage training in their own environments, that is, except for rudimentary on-the-job training. As a result they have to rely on generic external programs or engage an appropriate trainer. Many business managers and employees have difficulties in coping with the training regime. This is often associated with the level of English language skills (in particular writing and interpreting quality system documentation) and then putting the new knowledge into practice. Comments such as 'I haven't been to school for years', 'This looks too hard' and 'It will take such a long time to learn all this' are commonly heard from individuals participating in programs like the SQF 2000 Network Implementation Program. These difficulties are not insurmountable.

Allocation of Sufficient Resources. Small businesses tend to have difficulties in allocating sufficient resources to develop, implement and manage quality systems. Time is essentially the crucial resource and finding a balance between working in the field or the packing shed and on quality system requirements presents problems for many. Often the horticulturalist falls into the trap of getting behind with their quality system checks and balances. Initially, they may fail to see that internal checking and auditing is as essential to their operations as is soil preparation, planting and harvesting. This can lead them to want to defer upcoming external audits rather than reorganise their daily routine to include quality system tasks. There is no simple solution for this situation suffice to say that businesses have to be very flexible in their approach to reviewing and rescheduling necessary quality related tasks.

Another major challenge for many small businesses has been the lack of spare capacity with which to plan and change operational processes. Often they have to rely on outside providers for training, advice and other consultancy services. Choosing the right consultant can be a difficult task as the quality of consultants can vary considerably. Unfortunately, poor quality consultants can create more problems than they solve.

Control of Essential Processes etc. HACCP has assisted horticulturalists to better define work roles and responsibilities within their businesses and to delegate them more effectively. Dependence on key individuals is decreasing as more appropriate training is being provided for others working within critical parts of the operation. Workers are empowered and able to take on greater responsibilities regarding the way they manage their part of the operational process. This has led to improved workplace relations that are based increasingly on mutual respect and trust. Labour turnover for casuals has also reduced in many businesses.

Employees in small businesses are generally able to develop a better appreciation of the entire work process. This gives management a higher degree of flexibility and offers wider employment opportunity. Jobs may be fewer but they have the potential to become involved

across the entire operation. Often quality can be readily worked into the daily routine of the business.

There have also been a number of improvements in the way businesses function. Deeper understanding of all work processes have resulted in process improvements. Documentation and better record keeping have ensured that work is completed in a more consistent, productive way. Continuous improvement of processes is becoming a way of life as businesses become more aware of their operations, market and customer requirements.

Interpretation of Quality System Requirements. In the first instance, small businesses tend to have difficulties in finding out about their quality system options. Horticulturalists often lack the in depth knowledge or expertise to select an appropriate quality system model let alone interpret quality system requirements. They have to rely on their professional association or community to help them with the first step. Sometimes this help is not forthcoming or it is inappropriate and this can lead to decisions based on 'gut feeling' rather than due process and fact. Once they commence their quality system journey they tend to rely on their quality system trainer or consultant to satisfy their immediate needs.

Sufficient understanding does come with time as the horticulturalist's technical produce knowledge is balanced with increasing practical HACCP application and common sense. Those businesses seeking to achieve certification under banners such as SQF 2000 have found the ongoing relationship with their external quality system auditor invaluable.

Why Won't One System Satisfy Everyone's Requirements?

This is the most common question that I have been asked by horticulturalists, and disappointingly, I still do not have an appropriate answer.

Multiple Quality Systems

I am yet to be convinced that there is real value in having numerous quality systems in the horticultural industry. There is some merit in each of those systems, however, the situation brings horticulturalists to a state of frustration and exasperation. What system should the horticulturalist implement? Although there is a degree of commonality in some approaches, it becomes clear that one system is not enough if your customer base includes your own stall, market agents and major chain supermarkets.

Perhaps the horticultural industry faces the same dilemma that the Australian automobile industry faced not so long ago, that is, trying to interpret and apply ISO 9001, a generic quality standard. This led to the development of QS-9000, a derivative of ISO 9001 with additional specific to industry related requirements. Suppliers have reaped the benefits from the introduction of common motor industry quality standard.

The horticultural industry is yet to broach this problem. So many systems - so many with common requirements. From the horticulturalists perspective, the sooner the industry adopts a common system, the sooner they can get on with improving the quality and the food safety of their produce.

Certification Issues

Many of the smaller horticulturalists are deciding to develop and implement their HACCP based quality system but not seek certification at this time. This tends to be because of the cost of registration for the certification process and the ongoing audits. One set of certification audit and registration fees seems reasonable enough however the additional costs associated with multiple system external auditing needs to be avoided. It is not unusual for some operations to be audited twice a year for each of an approved supplier system and SQF 2000™. If they export they may also have AQIS certification assurance or ISO 9002 as well. The ongoing audit costs for small businesses becomes prohibitive.

Will Implementation Of A Quality System Be Worth the Investment and Effort?

The answer to this question is unquestionably yes. Businesses that have had certified quality systems in place for some time perceive greater benefits than those considering implementation or who have recently achieved certification. This is consistent with research conducted by Jones et al. (1997). The real value, although somewhat difficult to quantify at times, lies with the improvements businesses are able to make as their quality systems mature.

The Customer-Supplier Relationship

One of the benefits of implementing quality systems is the opportunity of working closely with customers to determine what needs to be done to satisfy the contractual relationship. This can be the co-development of produce specifications including such things as general appearance criteria, accepted defect levels and consignment criteria. Regional and adverse seasonal impacts on quality can also be built in. The end result is improved understanding of the growing, packing, storage and distribution processes for both the customer and the supplier.

Many changes have been made as a result of these joint arrangements and these include:

- More realistic and achievable produce specifications.
- Consistent quality produce delivered on time.
- A better appreciation of harvest and potential delivery schedules.
- Improved on-farm and post harvest management practices resulting in longer shelf life for produce.

Improved understanding of each other's needs and expectations has contributed to the development of longer-term business relationships between customer and supplier.

A View Of The Operations From Another Perspective

Many horticulturalists have found that HACCP provides them with the wherewithal to look at their current operations from a fresh perspective. HACCP has promoted a deeper understanding of processes and an appreciation of the risks to food safety and quality of

produce. The ongoing review and questioning of operations and the subsequent problem-solving / decision-making activities associated with HACCP has enlightened horticulturalists and given them the stimulus to improve their methods.

A Place In The Market

Perhaps the greatest benefit horticulturalists perceive from their implementation of a HACCP based quality system is that they will have a place in the market. HACCP has offered them a degree of security with the knowledge that their produce can meet 'customer requirements' or 'specifications'.

Conclusion

HACCP based quality systems are having a positive effect throughout the horticultural industry, however, confusion relating to choice and the requirement for multiple systems is not conducive to rallying support for such inside the farm gate. The first few steps for the horticulturalist are difficult enough without having to face such a predicament.

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