Vegetable cultivation technology training course: Reflecting on individual experiments in the last 5 years

AAI ran vegetable cultivation technology training courses at JICA Tsukuba from 2005 to 2009. The training courses aimed at making the overseas participants master cultivation technologies and consisted of lectures, experiments and practices, and field visits. From 2010, the course name has been changed to "vegetable cultivation technology for small scale farmers." In these courses, since 2006, we introduced into the curriculum individual experiments that are relevant to participants' work in their home countries, with a view to realize the training impacts quickly. Individual experiments aim to provide techniques and information which can be immediately useful and transferable for solving problems the participants encounter in their countries in the vegetable production process. We provide individual support to participants in making a plan for individual experiments, ranging from raising seedlings to crop management, to report writing at the end of the experiments. The experiment themes of individual participants are determined after a thorough selection process at different stages including the inception report presentation, technical interviews and individual experiment plan presentation. Here, I would like to review the results of individual experiments supported in the last five years.

To date, 47 participants have conducted individual experiments, dealing with 13 vegetables (Figure 1). Tomato, potato and cabbage share a commonly high demand in the participants' countries. In addition, these are representative vegetables of fruit, root and leaf vegetables, which require vegetable type specific cultivation technologies. Therefore, we believe it is important to increase the understanding and skill enhancement of participants regarding the characteristic physiology and ecology of various types of vegetables. For other types of vegetables, demands differ from country to country. Therefore, it is critical that training takes into account the differences in the cultivation environments such as latitude and climate.

There was a total of 17 items of handling elements within the experimentation objectives in individual experiments. About 34% of the objectives were to do with the effects of chemical fertilizer (N and P_2O_5) and organic fertilizer/compost application. This was followed by experiments on the effects of pruning/thinning, varietals trial, and experiments related to soil-borne diseases and virus diseases (Figure 2). A variety of experiments were undertaken regarding tomato which was chosen by many participants. Teaching required a significant amount of preparation in order to ensure that we could respond to the variety of experiments, including perusal of related documents such as academic papers and reports from research centers. We had to read a lot to ensure that individual experiments were rationally conducted in accordance with the experimentation objectives and the background of the issues in the trainees' home countries.

In most participants' countries the climate is severe and cultivation conditions are far from satisfactory. This means that technologies that require various materials and facilities, which Japan has, may not be necessarily appropriate for their countries. Often, it is therefore difficult to directly apply the cultivation technologies participants learn in our training courses in their home countries. Hence, our teaching focused on nurturing understanding of the core principles of the cultivation technologies, so that participants would be able to evaluate them and conduct necessary experiments in their own countries, resulting in application of the technologies in a locally appropriate manner. It is also necessary to provide useful ideas that can be used in their own countries, with materials that are relatively easy to obtain; for example, a skill of using organic fertilizers, with a small amount of chemical fertilizers to use as starter at initial growth stage, and use of chicken dung as fermented fertilizer, simultaneously helping to solve the waste issue of chicken excrement on farms.

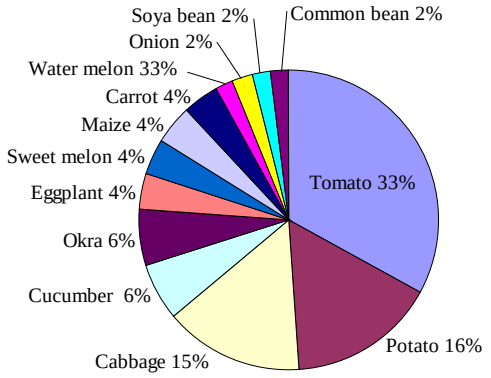

Figure 1: Vegetables targeted by Individual Experiment (2006-2009)

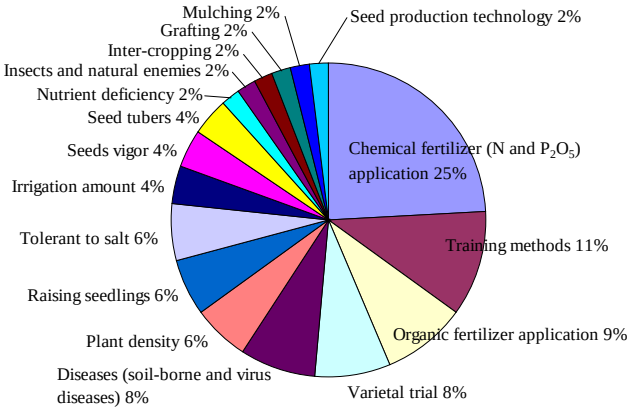

Figure 2: Elements of Individual Experiments (2006-2009)