

## Market-oriented agriculture in Palestine <Part 5>

### Production and use of compost silage

In our project target areas, many livestock farmers are hoping to see a decrease in their cost for fodder for animals, as the fodder expense accounts for a very high percentage of their entire production cost. On the other hand, many precious organic materials such as crop residues and date palm leaves are left unutilized in their farmland. Given this situation, our project decided to explore the introduction of silage production facilities to reduce fodder cost and to consider impact on livestock productivity such as milk production.

We started with organizing a field day in target areas aiming to promote understanding of the effect of silage and to provide silage production technology training. We introduced two types of technologies – the bunker type and the barrel type. We also explained applicable programs and the production cost of silage and its profitability. For enthusiastic farmer groups, we demonstrated experimentation on feeding of silage fodder to livestock. The result of the experimentation was that farmers could reduce fodder costs and at the same time increase milk production. These positive experimentation results were introduced in various activities to support silage production, and farmers were influenced to place more efforts into silage production.



Silage production field day

Farmers in the target areas could confirm the positive effect of silage through the above activities, and this led to active silage production in the areas. However, methods of silage utilization varied between farmers, which required another verification test to establish the optimal feeding system using silage. This verification test was kept simple so that it can be done by the farmers themselves. It was based on a very simplified method of replacing the hay part of the feeding system with silage, and the data was collected by farmers. As a result, it became clear that by replacing hay with silage, fodder cost can be reduced by 45-50 %.

In some areas, it is often observed that machinery provided by donors is left unattended once it gets broken. This reminds us that it is important to nurture a sense of ownership over any machinery and facility. Therefore, through our project, we promoted collective

use of silage production machinery using a rental system, in order to establish a sustainable maintenance and management regime. We procured machinery with particular specs based on pros and cons of existing types of machinery and the results of field surveys of actual use of different types of equipment by farmers. We provided a set of machinery comprising a harvester, compressor and mini-trolley as shown in photos below. The machinery is owned by the Department of Agriculture, and farmer groups that signed an agreement with the Department of Agriculture could use it. Use of the machinery is coordinated by agricultural extension staff, and storage, maintenance and management of the machinery is in principle done by farmer groups. Maintenance and management cost is borne by user fees that are collected.



Harvester

Compressor

Mini trolley

Machinery set for silage production



Crushing date palm leaves

The target areas were major date palm production areas and every year a large quantity of palm leaves are pruned. Despite the fact that these leaves are precious organic resources, most of them are currently burned and disposed of. If they can be effectively pulverized, they can be utilized as raw materials for compost and silage. Therefore, in this project, we introduced a Japanese crusher that can smash hard materials such as bamboos and wood. This machine proved to be very effective in pulverizing date palm leaves. Also for this crusher, sustainable maintenance and management is an extremely important challenge. We hope that many farmers will realize the importance of appropriate maintenance and management of machinery through this project. Furthermore, we hope that the farmers will be able to effectively utilize local resources and improve their livelihood and income.