

CHAPTER VIII

CONCLUSION AND RECOMENDATION

The study was classified the results into 3 issues as follow; 1) comparison of the production practices 2) economic impact assessment and 3) social impact assessment. The results of the study can be concluded that as follows;

The study of the production practices was compare between both systems of the strawberry and runner production. The RVFS and RNS interviewed were 15 and 17 farmers. The SVFS and SNS were 46 and 61 farmers. The average strawberry production areas of the SVFS and SNS farmers were 0.45 and 2.18 rai per household, respectively. Because of the lower areas of NS in the strawberry production were the limited production areas. All SVFS farmers lived in the upland areas. So, the expanding of the production areas is limited. The SVFS income was 94,463 baht/household. As well as the RVFS farmers had lower income per household than RNS farmers.

Also, this study estimated the income and profitability of the runner production using NS and VFS. This result of the study was found that the variable cost of

The cultivation activities of both systems were quite similar except the use seedlings and input applications. The strawberry production in the VFS used the virus-free seedlings (certified seedlings). The NS used the normal seedling produced by RNS farmers. For input application of both systems was different especially, pesticide used. Since, the VFS farmers were in contract with the RPF, the farming pesticide use was controlled as well.

The estimation of the production yield of the both systems, it was found that the strawberry production yield in NS was higher than the VFS. The result can explained that the lower production yield of VFS caused by the effect of tissue plants (VFS) which it will be give high yield and small fruit size. Due to here was many small fruit size of the VFS strawberry leading to low production yield. However, the effect was the effect of G1 strawberry tissue plants (runners produced from tissue culture plant in generation I). But when the G3-G4 (Generation III –IV) is used in runner production it will be better production yield because of higher constant gene.

The economic impact assessment was estimated in the study such as, budget, farmer surplus, factors affecting strawberry price, and market orientation. The budget analysis indicated that total variable cost excluding imputed labor cost in VFS strawberry was lower than that of NS. They were 17,919.92 and 35,028.39 baht per rai respectively. But the variable cost including imputed labor cost of VFS was higher than that of NS (50,375.14 and 39,353.71 baht per rai, respectively). It can be concluded that labor use in VFS strawberry production was intensive labor use.

The gross revenue of the VFS strawberry system was 109,888.28 baht per rai by average which was much than that of the NS (which was 50,110.50 baht per rai). The corresponding gross margins excluding imputed labor cost (about total variable cost) were 90,928.43 and 13,010.50 baht/rai. Also, the corresponding gross margins including imputed labor cost were 58,473.21 and 8,685.18 baht/rai (which were the VFS and NS strawberry production, respectively).

The variable cost of the runner production in both systems, the results was found that the RVFS variable cost was lower than that of NS which were 0.152 and 0.514 baht/plant. Though, the variable cost of RVFS was lower the other systems. However, the cost share of virus free mother stock was higher than of the RVFS

(which were 55.9% and 5.25%, respectively). Since, the virus free mother stocks were higher cost production than normal stocks. By the average, prices of runner in the VFS and NS were 1 and 0.9 baht/plant. The result was concluded that the net income per plant of VFS runner production was 0.84 baht/plant, which was higher than of the NS by 0.39 baht/rai.

Even, the result of revenue and profitability of VFS were higher than of NS. It can not be concluded that the runner and strawberry production using the VFS were better than of NS. Since, the data collection was the first year data of promoting to growers. So, it was verified for supporting the reason in using VFS.

From the result of the farmer surplus analysis, it was concluded that the farmer surplus of VFS strawberry production was higher than that enjoyed by NS farmers. The high profitability accrued to VFS strawberry growers were due to extraordinarily high price paid by the Royal Project to its farmers. Evidently, VFS strawberry production possessed much higher cost structure which implies less productivity and efficiency than those of NS strawberry products. This study did not analyze the farmer surplus of the runner production. Since, there were 17 and 15 sampling of the RNS and RNS, so they were not enough to run model of cost function.

The hedonic analysis was concluded that it should be note that, price of P20 especially P50 and P70 paid by he Royal Project were not competitive market price. Rather, they were set relative to production cost and marketing service charge. Therefore, interpretation of hedonic price analysis in this study differs from conventional practice. Here, the value of each attribute as shown by its marginal effect does not reflect consumer's utility but value implicitly judge by the Royal Project.

There are labor uses, food safety, farmer's healthy which are included in the social impact assessment. The labor use in farming activities of the strawberry production system was consisted of land preparation, mulching, watering, and chemical application, harvesting and weeding. The result of the study about labor use was found that most NS farmers employed their household labor. The manday/rai of household labor in VFS and NS strawberry production were 242.97 and 71.42 manday/rai. The manday/rai of hired labor of NS strawberry production were 58.79 manday/rai which were higher than of the VFS strawberry production (19.15 manday/rai). The total manday/rai of VFS strawberry production were higher than of the NS (which were 275.43 and 145.59 manday/rai, respective). However, this result can not be concluded that using the VFS effected to labor use. Since, the differentiation of the both farming systems was such a using normal seedling and virus-free seedling. So, the using VFS can not have impact on the labor use.

The result of pesticide test kid of the VFS and NS strawberry fruits was found that approximately, 80% of samples in VFS strawberry fruits were not found pesticide residue which were higher than of the NS strawberry fruits. This sampling was found that the samples of VFS have higher safety than samples of NS. However, the study can not be concluded that using VFS can reduce pesticide use obviously. Since the VFS farmers were in contract of the RPF, they had to be set program in production which can control pesticide use. So, using VFS can not show that they can reduce pesticide use, evidently.

According to the pesticide of using VFS mentioned in above, they could not reduce the pesticide by using VFS. From the study, it was found that even using VFS, the farmers still used pesticide. Because, the strawberry are sensitive to pathogen. However, the farmers in both systems had to use chemical or pesticide in control

diseases. It was concluded that using VFS could not control pesticide used therefore the strawberry farmers had to face to effect of pesticide.

The attitudes of people involving with strawberry development are the impact in medium term. The individual groups including with the strawberry development were the farmers, the consumers, processors and exporters. The attitude of the individual groups involving with the strawberry development is the adoption of changing technology. The adoption in changing cultivation technology seems to be hard in making decision. The project tries to achieve the purpose. Thus, the project subsidizes the farmers the cost of runners. In the first year 1997/98 of the promotion in transferring technology—promoting free-virus runners, there were many damaged plants caused from weakness of those runners and poor understanding of farmers on VF and promoting officers effected to damage of strawberry plants. These discouraged adoption of VF technology. The following year of the technological transferring was so hard to introduce the new technology.