

Appendix A.1 : Understanding of the target farmers and area**I. Socio-economic information**

1. Name..... Surname.....

2. Gender Male Female

3. Age.....years

4. Education level

 Grade 4 High school Grade 6 Vocational school Secondary school Other.....

5. Number of member in your family.....person.

6. How many labors in your family ?

 Male.....person Female.....person

7. Total agricultural areasrai.

Kaew mango orchard.....rai, other mango cultivar.....rai, other fruit trees.....rai.

8. If you are used to plant Kaew mango but now you stop to plant it or plant other mango cultivars instead on Kaew mango. What is your reason for ending Kaew mango planting ?

 Pest and disease problems Low price Markets requirement Farmers requirement Low yield or alternate bearing High income from other fruit tree**General information**

1. Years experience of planting Kaew mangoyears.

2. The characteristic of mango orchard located on

3. The environment of mango orchard composed of.....

Type of plant, which grow insert in mango orchard.....

4. Total number of Kaew mango trees in your orchard.....trees.

The space for planting Kaew mango by treemeters row..... meters.

5. Kaew mango area characteristic

- There is water source which can be used through the year. The water source is
 - Rain Irrigation water
 - Underground water Creek/Stream
 - Seeping water Other, specify.....
- Droughty area depend on rain only
- Other, specify.....

6. Net income in 2002 (1 Jan – 31 Dec 2002) from these careers

Mango orchard.....Baht/year Other plantBaht/year
 Livestock.....Baht/year Out farm (labor).....Baht/year

7. What are the sources of local knowledge on mango orchard management ?

- Own education and exploration Leader farmers
- Representatives from fertilizer/chemical company Farm visiting
- Neighbors Extension officers
- Newspaper Radio
- Television Relatives
- Other.....

8. What is the local knowledge gained by mango growers ?

1.....
 2.....

9. Are you interested in late season Kaew mango ?.

- Yes, because.....
- No, because.....

10. Have you ever practiced any technology in the delayed harvesting of Kaew mango ?

- Yes No

11. If you answered yes, what is your practice ?

11.1 Pruning takes place at datemonth.....
 11.2 Fruit bagging conducted with fruits age about.....days after full bloom or about date..... month.....

11.3 Fruit stalk toughness application spray when fruit agedays after full bloom or about date..... month.....

11.4.....

11.5.....

12. If you answered point 11, Are you success in any method which can be extended Kaew mango harvest time ?

12.1 Pruning

Yes, it can be extended harvest time from original for.....days

No

12.2 Fruit bagging

Yes, it can be extended harvest time from original for.....days

No

12.3 Fruit stalk toughness application

Yes, it can be extended harvest time from original for.....days

No

12.4.....

Yes, it can be extended harvest time from original for.....days

No

12.5.....

Yes, it can be extended harvest time from original for.....days

No

13. Did you hire labor (point 12) to work for extending Kaew mango harvesting time ?

13.1 Pruning

Hire

The number of hire labors

1-2 persons

3-5 persons

More than 5 persons

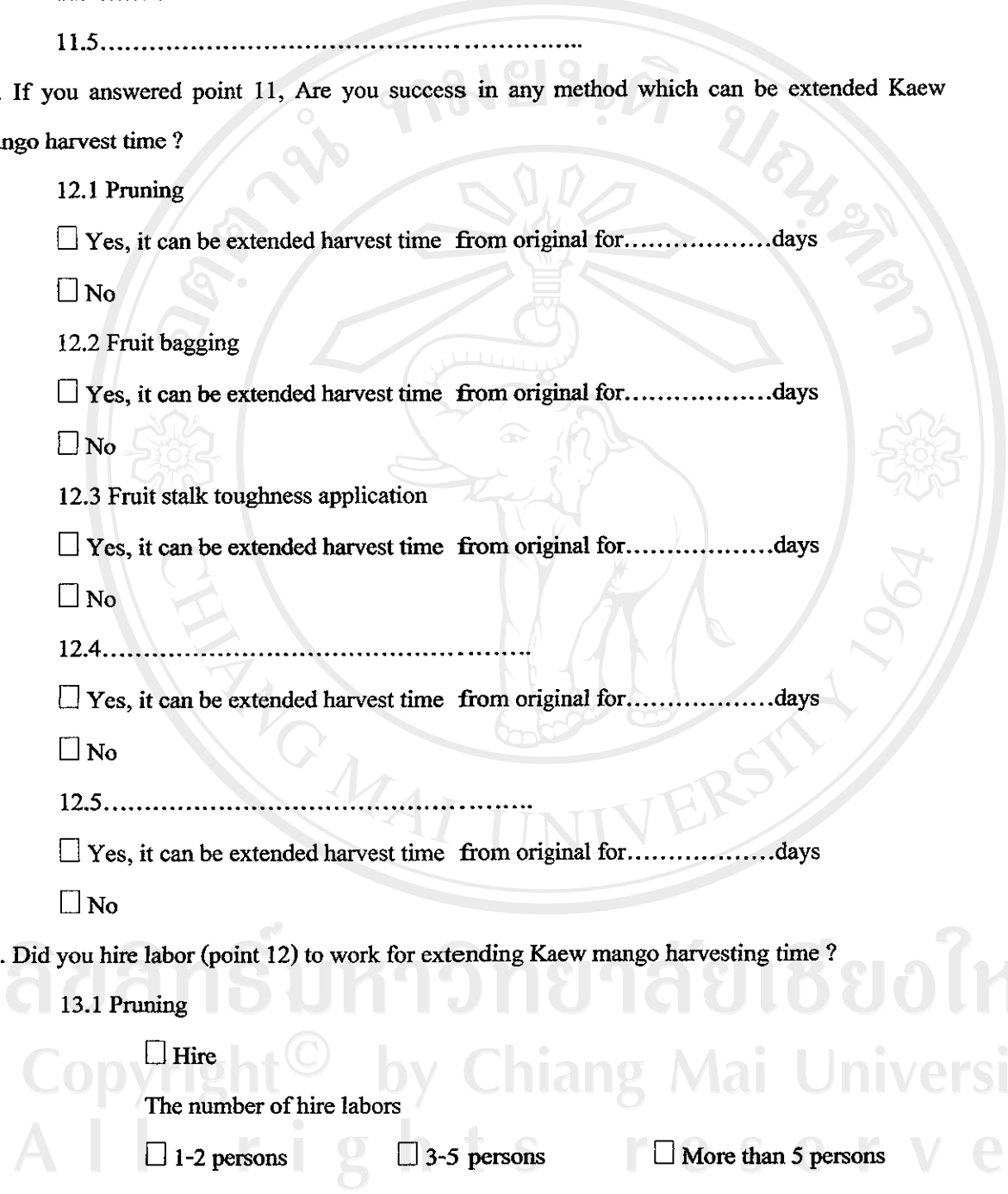
Wage rate

30 – 50 Baht/person/day

51-100 Baht/person/day

More than 100 Baht/person/day

Other specify.....



Wage period.....days

Not hire

Does it worthwhile to hire labor for pruning to extend Kaew mango harvesting time ?

Yes

No

13.2 Fruit bagging

Hire

The number of hire labors

1-2 persons

3-5 persons

More than 5 persons

Wage rate

30 – 50 Baht/person/day

51-100 Baht/person/day

More than 100 Baht/person/day

Other (specify).....

Wage period.....days

Not hire

Does it worthwhile to hire labor for pruning to extend Kaew mango harvesting time ?

Yes

No

13.3 Fruit stalk toughness application

Name of chemical..... Price.....Baht/bottle. Dose /Usage bottles/orchard

Hire

The number of labors

1-2 persons

3-5 persons

more than 5 persons

Wage rate

30 – 50 Baht/person/day

51-100 Baht/person/day

More than 100 Baht/person/day

Other (specify).....

Wage period.....days

Not hire

Does it worthwhile to hire labor for chemical apply to extend Kaew mango harvesting time ?

Yes

No

14. If you want to produce late season Kaew mango, when did you require harvesting time ?

Date.....monthbecause.....

15. If you could extend Kaew mango harvest time, how much the price of your produce in this late harvesting period ?

June	grade 1 amount	fruits/kg	price.....	Baht/kg.
	grade 2 amount	fruits/kg	price.....	Baht/kg.
July	grade 1 amount	fruits/kg	price.....	Baht/kg.
	grade 2 amount	fruits/kg	price.....	Baht/kg.
August	grade 1 amount	fruits/kg	price.....	Baht/kg.
	grade 2 amount	fruits/kg	price.....	Baht/kg.
September	grade 1 amount	fruits/kg	price.....	Baht/kg.
	grade 2 amount	fruits/kg	price.....	Baht/kg.

III. Kaew mango practice information

1. Varieties of mango which are planted in your orchard. (You can answer more than 1 choices)

Kaew.....rai amount.....trees. Tree spacing.....

Chokeanan.....rai amount.....trees. Tree spacing.....

Khaeosaveay.....rai amount.....trees. Tree spacing.....

Talabnak.....rai amount.....trees. Tree spacing.....

Other (specify)rai amount.....trees. Tree spacing.....

2. Reason for choice of Kaew mango planting ?

- Already existing in orchard Low cost
- Fast growing and drought tolerance Simple management
- Early harvesting within.....years Regular fruit bearing
- Market availability
- Other.....

3. Varieties of mango in your orchard

- Kaew Hua Juk
Fruit characteristics.....
- Kaew Kao
Fruit characteristics.....
- Kaew Dum

Fruit characteristics.....

Kaew Hua Paan

Fruit characteristics.....

Kaew Kiew

Fruit characteristics.....

Other (specify).....

Fruit characteristics.....

4. Kaew mango which were planted in your orchard came from

Seed cultivation

Grafting by using rootstock variety..... scion variety.....

Other.....

5. Number of harvesting time of Kaew mango in your orchardtime/year.

6. Natural harvesting time was concentrated between

7. Did you ever prune Kaew mango trees in your orchard ?

Yes when.....time in (month)

No

8. What are the objectives of mango pruning in your opinion ? (Please arrange by the importance,

1=the most important)

Tree vigor

Pest and disease removal

Flowering and fruit set

Delay harvesting

Other (specify).....

9. Amount of tree pruning which you thinned out the mango trees.....%.

10. Pruning method for your practice.

Cut off wholly branch

Cut off only the tip branch

Other (specify).....

11. When did you prune your mango trees ?

- After harvesting in (month).....
- Before flowering in (month).....
- After harvesting in (month).....and before flowering in (month).....
- Other (specify).....

12. The capacity of pruning Kaew mango trees was.....tree/day.

13. Cost for pruning activity wasBaht/per year.

14. Besides manure and chemical fertilizer, Are you used to apply other substances ? such as

14.1

14.2

14.3

15. Did you ever use any plant bioregulator in your orchard ?

- Yes

Name of substance.....by using with tree/fruit at the stage of.....

Objective for using this substance is to.....

Rate of application.....

Application method

- Fruit spraying Tree spraying
- Covering at the bole of tree Other (specify).....
- No

16. Cost for plant bioregulator in your orchard for the last year.....Baht.

17. Do you interest to test the plant bioregulator in order to delay harvesting Kaew mango in your orchard ?

- Yes because.....
- No because.....

18. Criteria for a choice of plant bioregulator in order to extend the harvesting Kaew mango ?

- Low price
- Safety
- Effectiveness

- Ease of use
- No residue effect

IV. Marketing and price

1. For the past year you started to harvest Kaew mango from date.....month.....

From total produce, there are% in grade A price.....Baht/kg

there are% in grade B price.....Baht/kg

2. Did you satisfy with the price ?

- Yes
- No because.....

3. Total yield of Kaew mango from your orchard in the past year.....kg.

Appendix A.2 : Assessment of the farmers' opinions and views on the practicality of the new technology

I. General personal data

1. Name

Age.....year Gender Male Female

Address

2. Education level.....

3. Kaew mango orchard size.....rai. Age of Kaew mango trees.....years.

4. Years of farmers' experience in mango production.....years.

5. Total agricultural size included all fruit trees and other plantsrai.

6. Other occupation excluded agricultural sector.

- Trader Government official
- Labor Others

7. Family assess

- Land Bank deposit
- Pick-up Local truck (E-tan)
- Television Radio
- Telephone

II. Basic production data

1. From past 3 years, When did you harvest your produce ?

In 2002 harvested between date.....month.....to date.....month.....

In 2003 harvested between date.....month.....to date.....month.....

In 2004 harvested between date.....month.....to date.....month.....

2. Price of Kaew mango in past 3 years

Year	Value (Baht/kg)		
	Grade A	Grade B	Grade C
2002			
2003			
2004			

3. Did you satisfy with mango price for past 3 years ?

Satisfy

Dissatisfy

III. Opinion

4. From point 3, What is the reason of low value of Kaew mango?

Low quality

Dealer forced the price down.

Market limitation

Harvesting at the same time as the other areas

Limited consumer

Other, specify.....

5. The opinion which you think that it is the best alternative for increasing the Kaew mango value ?

Better orchard management

Delay harvesting time

Change cultivar

Other, specify.....

6. Do you recognize the area where produces late season Kaew mango ?

Yes at

No

7. Do you recognize that better earning by delayed harvesting of Kaew mango ?

Yes

No

8. Have you ever experience of practicing delayed harvesting of Kaew mango ? What is your practice?

Yes

Early season mango. Practice by

Early harvest which faster than ordinary fordays

Should harvest before usual time for.....days, will be remarkable value added.

Mango late season. Practice by

Late harvest than ordinary for.....days, will be remarkable value added

Out of seasonal mango. Practice by.....

Harvest produce on date.....month.....

No

9. Do you accept with late season mango production by using plant bioregulator ?

Agree because.....

Disagree because.....

Possibility

10. What is your opinion on increasing Kaew mango value by late season production in Mae Ore Nai village Chiang Dao district ?

Possible, because

Impossible, because

No comment

11. Do you require for producing late season mango by using plant bioregulator ?

Require, because.....

Did not require, because.....

12. What is your opinion about the practical method to produce late season Kaew mango ?

- Simple and ease of practice
- Complicated and difficult to practice

13. What is your expectation of the delayed harvesting technology ?

- Agreed with the previous experiment
- Disagreed with the previous experiment
- No comment
- Other, specify.....

14. What is the limitation of the delayed harvesting technique ? (Please arrange in order to rank the most 3 important, which 1=the most important)

14.1 Environmental factors

- Climate
- Wind and storm problem
- Other, specify.....

14.2 Pests and diseases

- Other, specify.....

14.3 Production factors

- Capital
- Water
- Hormone purchasing
- Other, specify.....

14.4 Application technique

- Hormone preparation
- Period of spraying hormone
- Longer time to look after the tree
- Other, specify.....

Appropriateness

15. Usefulness of the delayed harvesting technology ?

Useful, because.....

Useless, because.....

16. Appropriateness of the delayed harvesting technology.

Appropriate

Inappropriate

17. Do you satisfy with the result of extended Kaew mango harvesting time by using growth bioregulator ? Why ?

Satisfy, because.....

Dissatisfy, because.....

18. Farmers' opinion about input cost of producing a kilogram in season of Kaew mango isBaht.

19. Farmers' acceptance of the additional cost for producing a kilogram of late season Kaew mango.

0.50 Baht

1 Baht

2 Baht

3 Baht

More than 3 Baht

Other, specify.....

20. The farmers' opinion about target harvesting period of Kaew mango.

Month	date 1-10	date 11-20	date 21-30
June			
July			
August			

Why you choose this period ? Because.....

21. From point 19 answer, farmers' requirement the minimum price/kg for late season Kaew mango should be

- 5-8 Baht/kg
- 9-12 Baht/kg
- 13-16 Baht/kg
- 17-20 Baht/kg
- More than 20 Baht/kg
- Other.....Baht/kg

Confidence

22. Farmers' confidence in delayed harvesting experiment.

- Very little (1 – 20%) Little (21-40%)
- Medium (41-60%) Much (61-80%)
- Very much (81-100%)

23. Practicability of the delayed harvesting technology.

- Likely to work
- Unlikely to work
- No comment

24. Transfer of the delayed harvesting technology to the neighbor.

- Yes
- No
- No comment

25. What is the faults of this technique ?

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Curriculum vitae

Name Mrs. Benjawan Chutichudet

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Educational background

1981-1985	B. Sc. Agriculture (Horticulture) Kasetsart University, Bangkok, Thailand
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Work experience

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