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APPENDIX

Appendix A: Questionnaire for sugarcane farm

1. Questionnaire for field survey sugarcane farm management in Eastern Region, Year 2006 (in Thai)

แบบสอบถามการสำรวจพื้นที่ปลูกอ้อย ปี 2549 จ. ชลบุรี

วันที่ .....เดือน.....พ.ศ.....

1. ชื่อเจ้าของไร่.....เบอร์โทร.....
2. ที่อยู่ .....
3. พื้นที่ปลูก .....ไร่ พันธุ์อ้อย.....
4. ลักษณะการถือครองที่ดิน ☐ เจ้าของ ☐ เช่า ☐ ในโควต้า ☐ นอกโควต้า
5. ฤดูปลูก เริ่มเดือน ..... เก็บเกี่ยวเดือน.....
   การเตรียมพื้นที่ปลูกใช้เวลาประมาณ..... เดือน.....วัน
6. วิธีปลูก ☐ ฝังกลบ ☐ เสียบ ☐ อ้อยตอปีที่ 1 ☐ อ้อยตอปีที่ 2
   ☐ รดน้ำ .....เที่ยว/ฤดูปลูก
7. การไถพรวน กี่ครั้งต่อฤดูปลูก
   ผาน 7 .....ครั้ง/ฤดู ใช้เวลา.....วัน ต่อ.....ไร่
   ผาน 3 .....ครั้ง/ฤดู ใช้เวลา.....วัน ต่อ.....ไร่
   ซอยพรวน.....ครั้ง/ฤดู ใช้เวลา.....วัน ต่อ.....ไร่
   ใช้รถไถ พลังงานที่ใช้ ☐ น้ำมันดีเซล ☐ เบนซิล ☐ อื่น ๆ.....ลิตร/ฤดูปลูก
8. การใส่ปุ๋ย ☐ ไม่ใส่ปุ๋ย ☐ ใส่ปุ๋ย วิธีการใส่คือ.....
   ชนิดปุ๋ยที่ใช้คือ☐ ปุ๋ยคอก-พืชสด ☐ ปุ๋ยชีวภาพ ☐ ปุ๋ยเคมี (สูตร .....)
   อัตราการใช้ .....ครั้ง/ปี ครั้งละ ..... กก./ไร่
9. โรคและแมลง ☐ มี ☐ ไม่มี
10. ความเสียหายอื่น ๆ .....
    .....
11. การใช้ยาฆ่าแมลง ☐ ไม่ใช้ ☐ ใช้
    ยี่ห้อ.....ปริมาณการใช้.....ครั้ง/ปี.....กก./ไร่
    การฉีดยาใช้แรงงาน ☐ คน ☐ เครื่องจักร
    จำนวนเที่ยว.....เที่ยว/ไร่
12. การใช้ยาฆ่าหญ้า ☐ ไม่ใช้ ☐ ใช้
    ยี่ห้อ.....ปริมาณการใช้.....ครั้ง/ปี.....กก./ไร่
    การฉีดยาใช้แรงงาน ☐ คน ☐ เครื่องจักร
    จำนวนเที่ยว.....เที่ยว/ไร่
13. แหล่งน้ำ ☐ ชลประทาน ☐ น้ำฝน ☐ สูบน้ำ
    ปริมาณน้ำ .....ลิตร/ครั้ง จำนวนครั้ง.....ครั้ง/ฤดูปลูก อื่น ๆ

รายละเอียดการให้น้ำ.....

14. ปริมาณน้ำ ☐ พอ ☐ ไม่เพียงพอ

15. ผลผลิตรวม..... ตัน ผลผลิตเฉลี่ย ..... ตัน/ไร่

16. การเก็บเกี่ยว ☐ เครื่องจักร ☐ แรงงาน

☐ เผาก่อนตัด ☐ ไม่เผาก่อนตัด

17. การจัดการก่อนเพาะปลูกเผาใบก่อนเตรียมพื้นที่ปลูกหรือไม่ ☐ เผา ☐ ไม่เผา

18. วิธีการขาย ☐ อ้อยสดส่งโรงงาน ☐ ผลิตท่อนพันธุ์

โรงงานที่ส่ง..... ระยะทาง.....กิโลเมตร

19. การขนส่ง.....ตัน/เที่ยว

20.ราคาที่เกษตรกรขายได้จริง.....บาท/ตัน

22. ลักษณะดินที่สังเกตุได้

☐ ดินทราย ☐ ดินร่วน ☐ ดินร่วนปนทราย ☐ ดินร่วนเหนียว

23. รายละเอียดอื่นเพิ่มเติม.....

.....

2. Questionnaire for field survey of sugarcane farm management in Eastern Region, 2006 Production Year (in English)

Date .....Month.....Year.....

1. Name.....Telephone Number.....
2. Address.....
3. Planting area size .....rai Commercial name.....
4. Type of ownership area ☐ Owner ☐ Rent ☐ In the quota ☐ Out of quota
5. Planting date ..... Harvesting date .....
   Period for preparing area for plant.....month.....days
6. Planting method ☐ Bury ☐ Skewer ☐ Ratoon year 1 ☐ Ratoon year 2
   ☐ Sprinkle Water .....time/planting season
7. Tillage type Time/Planting season
   Chisel plow .....time/season Spent time.....days per.....rai
   Deep rip .....time/season Spent time.....days per.....rai
   Strip-tillage.....time/season Spent time.....days per.....rai
   Energy uses for Tractor ☐ Diesel ☐ Gasoline
   ☐ Others.....liter/planting season
8. Fertilizer ☐ No-fertilizer ☐ Use-fertilizer Method.....
   Type of fertilizer ☐ Manure ☐ Bio-fertilizer
   ☐ Chemical-fertilizer a chemical formula .....
   Rate use.....time/year rate .....kg/rai
9. Disease and Insect ☐ Yes ☐ No
10. Others damage .....
.....
11. Pesticide ☐ Yes ☐ No
    Brand.....Quantity.....time/year.....kg./rai
    Power ☐ Man Power ☐ Machine
    Rate.....time/rai
12. Herbicide ☐ Yes ☐ No
    Brand.....Quantity.....time/year.....kg./rai
    Power ☐ Man Power ☐ Machine
    Rate.....time/rai
13. Water sources ☐ Irrigation ☐ Rain water ☐ Pump
    Water supply.....liter/time Rate.....time/season
    Detail of water sprinkle .....
14. Amount of water supply ☐ Enough ☐ Not enough
15. Total production..... Tons Average production ..... ton/rai
16. Harvest method ☐ Machine ☐ Man power
    ☐ Burning before harvest ☐ No- burning before harvest

17. Management sugarcane biomass before planting ☐ Burning ☐ Unburnt
18. Sale Method ☐ Fresh production ☐ Produce for sugarcane sprout
    Sugar mill name..... Distance.....kilometers
19. Transportation.....ton/truck
20. Price.....bath/ton
22. Soil characteristics
    ☐ Sand ☐ Silt ☐ Sand and silt ☐ Clay
23. Other details.....

Appendix B: Questionnaire of Sugar mill factory

The questionnaire for energy utilization in sugar mill factory

Date.....
Factory name.....
Name.....
Telephone.....

NO.	Descriptions		2003/04	2004/05	2005/06	2006/07	Note
1	Sugarcane Yields (tons)	Fresh yield					
		Burned					
		Total					
2	White sugar (100 kg)						
3	Raw sugar (100 kg)						
4	Molasses from 1 tone of cane (ton)						
5	Other factory to sold molasses						
6	Price of molasses (price per ton)						
7	Bagasse produce from 1 ton of cane (kg)						
8	Filter cake (ton)						
9	Filter cake price (bath/ton)						

NO.	Descriptions		2003/04	2004/05	2005/06	2006/07	Note
10	The number of date to sugar process (days)						
11	Time of day produce sugar (hour)						
12	Electricity produce for bagasse (kWh)						
13	Electricity produce for bagasse (kWh)/ton cane)						
14	Electricity from commercial grid (kWh)						
15	Other energy sources						
16	Capacity (ton cane/day)						
17	Age of factory (year)						
18	First day to operation						
19	The last day of operation						
20	Flow chart for sugarcane						
21	Name of sugarcane farmer in the area that send						
	sugarcane to the factory						
22	Number of sugarcane farm						
23	Other data						

Appendix C: Sugarcane farm management data from questionnaire

1. Data of chemical fertilizer utilization (Note: QN= questionnaire)

QN. NO.	Types		Fertilizer				Herbicide	Insecticide	Transportation	
	Fertilizer	Unit	kg/ha				kg/ha	kg/ha	ton/ha	km
	Area (Rai)	Area (ha)	Urea	N	P_2O_5	K_2O	Quantity	Quantity	Production	Distance
Q1	40	6.40	-	313	69	175	-	-	78.13	70
Q2	120	19.20	-	94	94	94	-	12.50	52.08	20
Q3	120	19.20	-	45	30	90	-	37.50	78.13	7
Q4	200	32.00	-	281	281	281	-	12.50	50.00	8
Q5	200	32.00	-	19	14	21	-	31.25	78.13	15
Q6	150	24.00	-	219	219	94	-	37.50	56.25	20
Q7	250	40.00	287.5	288	0	0	-	0	65.00	10
Q8	300	48.00	-	41	41	66	-	-	62.50	15
Q9	100	16.00	-	94	94	94	-	6.25	75.00	23
Q10	200	32.00	-	141	141	141	-	3.13	78.13	25
Q11	210	33.60	-	47	47	47	-	56.25	53.57	10
Q12	60	9.60	-	271	201	201	-	18.75	66.69	20
Q13	320	51.20	-	344	94	94	-	6.25	68.75	40
Q14	50	8.00	-	194	144	144	-	9.38	62.50	40
Q15	150	24.00	-	225	175	50	-	6.25	62.50	15
Q16	300	48.00	-	188	188	188	-	0	62.50	20
Q17	100	16.00	-	141	141	141	-	18.75	62.50	22
Q18	70	11.20	-	141	141	141	-	37.50	44.64	30
Q19	100	16.00	-	169	169	169	-	-	62.50	17
Q20	200	32.00	-	188	144	144	-	31.25	93.75	5
Q21	100	16.00	-	900	375	375	-	0	56.25	10
Q22	160	25.60	-	94	94	94	-	-	62.50	20
Q23	350	56.00	-	94	94	94	-	-	62.50	75
Q24	35	5.60	-	94	94	94	-	-	62.50	15
Q25	150	24.00	-	94	94	94	-	-	62.50	10
Q26	90	14.40	-	250	138	138	-	6.25	61.81	15
Q27	120	19.20	-	188	188	188	-	-	62.50	5
Q28	150	24.00	-	94	94	94	-	6.67	60.42	25
Q29	300	48.00	-	315	201	201	-	25.00	79.17	20
Q30	60	9.60	-	47	47	47	-	12.50	50.00	6
Q31	350	56.00	-	47	47	47	-	12.50	67.86	8
Q32	200	32.00	-	94	94	94	-	12.50	62.50	20
Q33	70	11.20	-	100	100	100	56.25	56.25	43.75	30
Q34	60	9.60	-	572	141	141	-	6.25	36.46	30
Q35	250	40.00	-	94	94	94	-	25.00	62.50	15
Q36	200	32.00	-	94	94	94	-	-	56.25	26
Q37	600	96.00	431.25	94	94	94	-	50.00	52.08	10
Q38	150	24.00	-	141	141	141	-	46.88	56.25	22
Q39	150	24.00	-	47	47	47	1.25	1.25	62.50	10
Q40	100	16.00	-	47	47	47	-	12.50	50.00	30
Q41	125	20.00	-	188	188	188	6.25	15.00	35.00	23
Q42	200	32.00	-	141	141	141	-	18.75	46.88	50
Q43	20	3.20		94	94	94	-	-	40.63	16
Q44	100	16.00	-	141	141	141	-	37.50	62.50	15
Q45	120	19.20	-	94	94	94	-	-	119.79	15
Q46	300	48.00	-	281	281	281	-	3.13	52.08	15
Q47	140	22.40	-	94	94	94	-	37.50	80.36	18
Q48	80	12.80	-	188	188	188	-	-	50.00	10
Q49	196	31.36	-	94	94	94	6.25	-	31.89	10
Q50	500	80.00	-	47	47	47	-	-	75.00	10
Q51	50	8.00	431.25	572	141	141	-	-	37.50	7
Q52	150	24.00	-	550	450	550	-	12.50	62.50	8
Q53	110	17.60	-	50	25	25	-	18.75	106.25	4
Q54	150	24.00	-	844	844	844	-	3.13	83.33	10
Q55	120	19.20	-	94	26	26	-	25.00	104.17	8
Q56	10	1.60	-	94	94	94	-	-	50.00	15
Q57	200	32.00	-	94	94	94	-	6.25	62.50	10
Q58	200	32.00	-	188	88	225	-	6.25	43.75	25
Q59	120	19.2	143.75	938	938	938	-	18.75	50	60

2. Data of herbicide and insecticide

QN. NO.	Area (ha)	Herbicide (kg/ha)	Insecticide (kg/ha)
Q1	6.40	-	-
Q2	19.20	-	12.50
Q3	19.20	-	37.50
Q4	32.00	-	12.50
Q5	32.00	-	31.25
Q6	24.00	-	37.50
Q7	40.00	-	0.00
Q8	48.00	-	-
Q9	16.00	-	6.25
Q10	32.00	-	3.13
Q11	33.60	-	56.25
Q12	9.60	-	18.75
Q13	51.20	-	6.25
Q14	8.00	-	9.38
Q15	24.00	-	6.25
Q16	48.00	-	0.00
Q17	16.00	-	18.75
Q18	11.20	-	37.50
Q19	16.00	-	-
Q20	32.00	125.00	31.25
Q21	16.00	-	0.00
Q22	25.60	-	-
Q23	56.00	-	-
Q24	5.60	-	-
Q25	24.00	-	-
Q26	14.40	-	6.25
Q27	19.20	-	-
Q28	24.00	-	6.67
Q29	48.00	-	25.00
Q30	9.60	-	12.50
Q31	56.00	-	12.50
Q32	32.00	-	12.50
Q33	11.20	56.25	56.25
Q34	9.60	-	6.25
Q35	40.00	-	25.00
Q36	32.00	-	-
Q37	96.00	-	50.00
Q38	24.00	-	46.88
Q39	24.00	1.25	1.25
Q40	16.00	-	12.50
Q41	20.00	6.25	15.00
Q42	32.00	250.00	18.75
Q43	3.20	-	-
Q44	16.00	-	37.50
Q45	19.20	-	-
Q46	48.00	-	3.13
Q47	22.40	-	37.50
Q48	12.80	-	-
Q49	31.36	6.25	-
Q50	80.00	-	-
Q51	8.00	-	-
Q52	24.00	-	12.50
Q53	17.60	-	18.75
Q54	24.00	-	3.13
Q55	19.20	-	25.00
Q56	1.60	-	-
Q57	32.00	-	6.25
Q58	32.00	-	6.25
Q59	19.2	-	18.75

Note: QN= questionnaire

3. Data of diesel utilization from farm operation and management

QN. NO.	Area (ha)	liters/ha					
		Machinery	Herbicide	Insecticide	Irrigation	Transportation	Total
Q1	6.40	117.19	-	4.22	43.75	125.00	290.16
Q2	19.20	98.13	-	9.38	-	83.33	190.84
Q3	19.20	233.75	-	18.75	18.23	125.00	395.73
Q4	32.00	266.67	-	9.38	-	80.00	356.05
Q5	32.00	102.08	-	4.69	10.94	125.00	242.71
Q6	24.00	225.00	-	14.06	10.94	90.00	340
Q7	40.00	256.25	-	37.50	10.94	104.00	408.69
Q8	48.00	62.50	-	-	10.94	100.00	173.44
Q9	16.00	169.58	-	37.50	10.94	120.00	338.02
Q10	32.00	118.75	-	2.34	10.94	125.00	257.03
Q11	33.60	92.50	-	14.11	10.94	85.71	203.26
Q12	9.60	291.67	-	9.38	13.13	106.71	420.89
Q13	51.20	116.67	-	4.69	-	110.00	231.36
Q14	8.00	116.67	-	3.38	10.94	100.00	230.99
Q15	24.00	175.00	-	4.75	3.13	100.00	282.88
Q16	48.00	79.17	-	4.69	10.94	100.00	194.8
Q17	16.00	212.50	-	56.25	43.75	100.00	412.5
Q18	11.20	106.25	-	-	-	71.43	177.68
Q19	16.00	197.50	-	-	10.94	100.00	308.44
Q20	32.00	156.25	-	9.38	3.13	150.00	318.76
Q21	16.00	95.00	-	18.75	10.94	90.00	214.69
Q22	25.60	158.93	-	-	-	100.00	258.93
Q23	56.00	97.92	-	-	-	100.00	197.92
Q24	5.60	225.00	-	-	-	100.00	325
Q25	24.00	108.33	-	-	-	100.00	208.33
Q26	14.40	139.58	-	-	10.94	98.89	249.41
Q27	19.20	97.92	-	-	-	100.00	197.92
Q28	24.00	240.00	-	-	-	90.63	330.63
Q29	48.00	75.83	-	9.38	10.94	126.67	222.82
Q30	9.60	212.50	-	9.38	-	80.00	301.88
Q31	56.00	60.42	-	-	10.94	108.57	179.93
Q32	32.00	62.50	-	18.75	-	100.00	181.25
Q33	11.20	139.58	3.00		-	70.00	212.58
Q34	9.60	212.50	-	-	4.69	58.33	275.52
Q35	40.00	165.00	-	-	10.94	100.00	275.94
Q36	32.00	97.92	-	0.47	-	90.00	188.39
Q37	96.00	150.00	-	4.69	-	83.33	238.02
Q38	24.00	116.67	-	4.69	10.94	90.00	222.3
Q39	24.00	175.00	0.15	-	-	100.00	275.15
Q40	16.00	112.50	-	4.69	4.69	80.00	201.88
Q41	20.00	460.00	0.30	56.25	10.94	56.00	583.49
Q42	32.00	160.00	-	14.06	11.38	75.00	260.44
Q43	3.20	281.25	-	-	-	65.00	346.25
Q44	16.00	87.50	-	56.25	-	100.00	243.75
Q45	19.20	187.50	-	-	10.94	191.67	390.11
Q46	48.00	250.00	-	75.00	10.94	83.33	419.27
Q47	22.40	390.77	-	37.50	10.94	128.57	567.78
Q48	12.80	187.50	-	-	-	80.00	267.5
Q49	31.36	65.05	3.00	75.00	10.94	51.02	205.01
Q50	80.00	60.00	-	18.75	10.94	120.00	209.69
Q51	8.00	27.50	-	-	-	60.00	87.5
Q52	24.00	450.00	-	37.50	10.94	100.00	598.44
Q53	17.60	292.86	-		21.88	170.00	484.74
Q54	24.00	77.08	-	18.75	10.94	133.33	240.1
Q55	19.20	81.25	-	56.25	10.94	166.67	315.11
Q56	1.60	50.00	-	-	-	80.00	130
Q57	32.00	162.50	-	-	10.94	100.00	273.44
Q58	32.00	125.00	-	18.75	10.94	70.00	224.69
Q59	19.2	120.8	-	4.69	9.11	80	214.6

4. Data of gasoline utilization from farm operation and management

QN. NO.	Area (ha)	liters/ha			
		Herbicide	Insecticide	Irrigation	Total
Q1	6.40	-	11.72	62.50	74.22
Q2	19.20	-	15.63	-	15.63
Q3	19.20	-	31.25	6.51	37.76
Q4	32.00	-	15.63	-	15.63
Q5	32.00	-	7.81	3.91	11.72
Q6	24.00	-	23.54	3.91	27.45
Q7	40.00	-	62.50	3.91	66.41
Q8	48.00	-	-	3.91	3.91
Q9	16.00	-	62.50	3.91	66.41
Q10	32.00	-	3.91	3.91	7.81
Q11	33.60	-	23.51	3.91	27.42
Q12	9.60	-	5.86	4.69	10.55
Q13	51.20	-	7.81	-	7.81
Q14	8.00	-	5.63	3.91	9.53
Q15	24.00	-	7.92	3.91	11.82
Q16	48.00	-	7.81	3.91	11.72
Q17	16.00	-	93.75	15.63	109.38
Q18	11.20	-	-	65.10	65.10
Q19	16.00	-	-	3.91	3.91
Q20	32.00	0.25	15.63	3.91	19.53
Q21	16.00	-	3.91	3.91	7.81
Q22	25.60	-	-	-	-
Q23	56.00	-	-	-	-
Q24	5.60	-	-	-	-
Q25	24.00	-	-	-	-
Q26	14.40	-	-	3.91	3.91
Q27	19.20	-	-	3.91	3.91
Q28	24.00	-	-	-	-
Q29	48.00	-	15.63	3.91	19.53
Q30	9.60	-	15.63	-	15.63
Q31	56.00	-	-	3.91	3.91
Q32	32.00	-	31.25	195.31	226.56
Q33	11.20	5.00	281.25	-	281.25
Q34	9.60	-	-	7.81	7.81
Q35	40.00	-	-	3.91	3.91
Q36	32.00	-	0.78	3.91	4.69
Q37	96.00	-	7.81	-	7.81
Q38	24.00	-	7.92	3.91	11.82
Q39	24.00	-	-	-	-
Q40	16.00	-	7.81	7.81	15.63
Q41	20.00	15.00	93.75	3.91	97.66
Q42	32.00	0.60	23.44	4.55	27.98
Q43	3.20	-	-	-	-
Q44	16.00	-	93.75	-	93.75
Q45	19.20	-	-	3.91	3.91
Q46	48.00	-	125.00	3.91	128.91
Q47	22.40	-	62.50	3.91	66.41
Q48	12.80	-	-	-	-
Q49	31.36	5.00	62.50	3.91	66.41
Q50	80.00	-	31.25	3.91	35.16
Q51	8.00	-	-	-	-
Q52	24.00	-	62.50	3.91	66.41
Q53	17.60	-	281.25	82.03	363.28
Q54	24.00	-	31.25	3.91	35.16
Q55	19.20	-	93.75	3.91	97.66
Q56	1.60	-	-	-	-
Q57	32.00	-	-	3.91	3.91
Q58	32.00	-	31.25	3.91	35.16
Q59	19.2	-	7.81	11.39	19.21

5. Data of area burn (area ha)

QN. NO.	Area (ha)	Pre harvest (ha)			Post Harvest (ha)		
		Burnt	Unburnt	Total area	Burnt	Unburnt	Total area
Q1	6.4	2.13	2.13	4.26	2.13	0	2.13
Q2	19.2	9.6	0	9.6	9.6	0	9.6
Q3	19.2	0	9.6	9.6	9.6	0	9.6
Q4	32	0	16	16	16	0	16
Q5	32	0	0	0	0	32	32
Q6	24	12	0	12	12	0	12
Q7	40	13.33	13.33	26.66	13.33	0	13.33
Q8	48	0	24	24	24	0	24
Q9	16	5.33	5.33	10.66	5.33	0	5.33
Q10	32	8	8	16	8	8	16
Q11	33.6	16.8	0	16.8	16.8	0	16.8
Q12	9.6	3.2	3.2	6.4	3.2	0	3.2
Q13	51.2	25.6	0	25.6	25.6	0	25.6
Q14	8	4	0	4	4	0	4
Q15	24	12	0	12	12	0	12
Q16	48	0	24	24	0	24	24
Q17	16	8	0	8	8	0	8
Q18	11.2	3.73	3.73	7.46	3.73	0	3.73
Q19	16	8	0	8	8	0	8
Q20	32	16.66	16.66	33.32	16.66	0	16.66
Q21	16	5.33	5.33	10.66	5.33	0	5.33
Q22	25.6	8.53	8.53	17.06	8.53	0	8.53
Q23	56	28	0	28	28	0	28
Q24	5.6	2.8	0	2.8	2.8	0	2.8
Q25	24	8	8	16	8	0	8
Q26	14.4	4.8	4.8	9.6	4.8	0	4.8
Q27	19.2	6.4	6.4	12.8	6.4	0	6.4
Q28	24	0	0	0	24	0	24
Q29	48	16	16	32	16	0	16
Q30	9.6	0	4.8	4.8	4.8	0	4.8
Q31	56	18.66	18.66	37.32	18.66	0	18.66
Q32	32	16	0	16	16	0	16
Q33	11.2	3.73	3.73	7.46	3.73	0	3.73
Q34	9.6	0	4.8	4.8	4.8	0	4.8
Q35	40	0	0	0	40	0	40
Q36	32	10.66	10.66	21.32	10.66	0	10.66
Q37	96	0	48	48	48	0	48
Q38	24	12	12	24	12	0	12
Q39	24	12	12	24	12	0	12
Q40	16	8	0	8	8	0	8
Q41	20	0	10	10	10	0	10
Q42	32	16	0	16	16	0	16
Q43	3.2	0	1.6	1.6	1.6	0	1.6
Q44	16	5.33	5.33	10.66	5.33	0	5.33
Q45	19.2	6.4	6.4	12.8	6.4	0	6.4
Q46	48	24	0	24	24	0	24
Q47	22.4	7.46	7.46	14.92	7.46	0	7.46
Q48	12.8	6.4	0	6.4	6.4	0	6.4
Q49	31.36	10.45	10.45	20.9	10.45	0	10.45
Q50	80	26.66	26.66	53.32	26.66	0	26.66
Q51	8	2.66	2.66	5.32	2.66	0	2.66
Q52	24	8	8	16	8	0	8
Q53	17.6	4.4	4.4	8.8	4.4	4.4	8.8
Q54	24	8	8	16	8	0	8
Q55	19.2	6.4	6.4	12.8	6.4	0	6.4
Q56	1.6	0.53	0.53	1.06	0.53	0	0.53
Q57	32	0	16	16	0	16	16
Q58	32	10.66	10.66	21.32	10.66	0	10.66
Q59	19.2	0	19.2	19.2	0	0	0

Appendix D: CO_2, CH_4 flux

1. CO_2 and CH_4 flux from sugarcane (standard error in blanket)

Month-Code	Month	CO_2 flux ($mg/m^2/hr$)	CH_4 flux ($mg/m^2/hr$)
M0	March	550.25 (8.4)	0.061 (0.02)
M1	April	812.78 (32.0)	0.170 (0.04)
M2	May	1327.77 (74.5)	-0.160 (0)
M3	June	303.25 (70.3)	-0.110 (0.01)
M4	July	488.09 (69.3)	0.077 (0.01)
M5	August	918.63 (131.0)	0.030 (0.05)
M7	October	1035.97 (92.6)	-0.241 (0.02)
M8	November	533.93 (66.1)	-0.184 (0.09)
M9	December	276.10 (63.7)	-0.170 (0.05)
M10	January	204.00 (56.9)	No data

Note: M0=sampled before planting; M1= sampled at 1 months; M2= sampled at 2 months; M3= sampled at 3 months; M4= sampled at 4 months; M5= sampled at 5 months; M6= sampled at 6 months; M7= sampled at 7months; M8= sampled at 8 months; M9= sampled at 9 months; M10=sampled at 10 months)

2. Dry weight remain in sugarcane components at 0 cm depth (% dry weight remained)

Month-code	Day	Sample Date	Leaf	Leaf sheath	Shoot	Root
M0	0	9-Mar	100	100	100	100
M1	27	5-Apr	82.18	59.95	95.39	95.41
M2	60	8-May	70.06	52.08	84.43	93.72
M3	91	8-Jun	67.91	44.23	77.13	91.95
M4	123	10-Jul	56.64	39.42	79.97	84.68
M5	153	10-Aug	41.38	28.79	67.23	80.58
M6	184	10-Sep	22.62	17.64	41.4	53.00
M7	214	9-Oct	21.68	15.66	43.37	43.22
M8	241	6-Nov	25.23	15.57	58.18	43.84
M9	267	2-Dec	23.93	15.07	41.00	38.42
M10	296	1-Jan	23.33	11.84	34.75	35.77

3. Dry weight remain in sugarcane components at 15 cm depth (% dry weight remained)

Month-code	Day	Sample Date	Leaf	Leaf sheath	Shoot	Root
M0	0	9-Mar	100	100	100	100
M1	27	5-Apr	68.96	51.62	93.77	91.07
M2	60	8-May	48.04	38.10	88.43	88.20
M3	91	8-Jun	38.91	33.70	81.26	76.62
M4	123	10-Jul	31.97	27.16	76.56	61.28
M5	153	10-Aug	27.20	11.90	52.25	59.42
M6	184	10-Sep	17.81	9.85	49.14	51.38
M7	214	9-Oct	8.06	6.87	36.73	29.66
M8	241	6-Nov	11.6	8.36	38.95	31.20
M9	267	2-Dec	9.72	3.92	24.2	31.63
M10	296	1-Jan	13.99	1.2	27.3	25.32

4. Total C in sugarcane component at 0 cm depth (g C/100 g dry weight biomass)

Month-code	Day	Sample Date	Leaf	Leaf sheath	Shoot	Root
M0	0	9-Mar	45.24 (0.35)	44.13 (0.17)	46.00 (0.22)	41.60 (0.34)
M1	27	5-Apr	32.98 (0.23)	23.35 (0.54)	34.21 (0.11)	36.4 (0.30)
M2	60	8-May	26.79 (0.29)	19.84 (0.29)	31.30 (0.70)	27.4 (0.17)
M3	91	8-Jun	23.88 (0.44)	16.94 (0.10)	30.66 (0.02)	23.68 (0.09)
M4	123	10-Jul	19.69 (0.07)	13.40 (0.48)	27.29 (0.08)	30.32 (0.07)
M5	153	10-Aug	13.63 (0.58)	9.80 (0.06)	27.31 (0.55)	18.52 (0.35)
M6	184	10-Sep	7.89 (0.16)	6.27 (0.12)	18.07 (0.09)	13.35 (0.15)
M7	214	9-Oct	8.01 (0.04)	5.48 (0.07)	13.44 (0.06)	15.15 (0.03)
M8	241	6-Nov	6.38 (0.11)	3.89 (0.08)	13.05 (0.13)	13.99 (0.10)
M9	267	2-Dec	7.43 (0.08)	3.89 (0.18)	9.68 (0.13)	14.16 (0.10)
M10	296	1-Jan	6.90 (0.27)	2.98 (0.22)	9.36 (0.05)	8.60 (0.11)

5. Total C in sugarcane component at 15 cm depth (g C/100 g dry weight biomass)

Month-code	Day	Sample Date	Leaf	Leaf sheath	Shoot	Root
			45.24	44.13	46.00	41.60
M0	0	9-Mar	(0.35)	(0.17)	(0.22)	(0.34)
			27.12	21.16	33.03	30.76
M1	27	5-Apr	(0.53)	(0.06)	(0.31)	(0.02)
			19.94	14.93	31.75	27.38
M2	60	8-May	(0.14)	(0.04)	(0.34)	(0.37)
			15.86	13.69	26.20	29.39
M3	91	8-Jun	(0.14)	(0.04)	(0.30)	(0.16)
			12.95	11.20	22.31	27.93
M4	123	10-Jul	(0.20)	(0.03)	(0.03)	(0.07)
			10.97	4.83	20.55	18.81
M5	153	10-Aug	(0.29)	(0.09)	(0.32)	(0.10)
			7.07	3.81	19.16	17.19
M6	184	10-Sep	(0.02)	(0.19)	(0.01)	(0.17)
			3.09	2.36	9.46	12.78
M7	214	9-Oct	(0.16)	(0.36)	(0.08)	(0.14)
			4.18	3.10	10.48	10.64
M8	241	6-Nov	(0.11)	(0.09)	(0.02)	(0.13)
			3.40	1.23	9.94	7.67
M9	267	2-Dec	(0.10)	(0.38)	(0.03)	(0.15)
			4.14	0.40	7.09	7.87
M10	296	1-Jan	(0.11)	(0.05)	(0.11)	(0.30)

6. Total N in sugarcane component at 0 cm (g N/100 g dry weight biomass)

Month-code	Day	Sample Date	Leaf	Leaf sheath	Shoot	Root
M0	0	9-Mar	0.82 (0.06)	0.48 (0.02)	0.40 (0.03)	0.42 (0.01)
M1	27	5-Apr	0.54 (0.04)	0.32 (0.13)	0.38 (0.06)	0.35 (0.12)
M2	60	8-May	0.41 (0.11)	0.28 (0.03)	0.40 (0.11)	0.32 (0.04)
M3	91	8-Jun	0.43 (0.11)	0.16 (0.05)	0.36 (0.04)	0.30 (0.08)
M4	123	10-Jul	0.42 (0.02)	0.22 (0.14)	0.38 (0.09)	0.43 (0.00)
M5	153	10-Aug	0.29 (0.09)	0.17 (0.04)	0.34 (0.18)	0.25 (0.02)
M6	184	10-Sep	0.19 (0.03)	0.15 (0.04)	0.28 (0.08)	0.19 (0.05)
M7	214	9-Oct	0.20 (0.11)	0.12 (0.00)	0.69 (0.44)	1.50 (0.03)
M8	241	6-Nov	0.62 (0.06)	0.32 (0.02)	0.85 (0.00)	1.02 (0.00)
M9	267	2-Dec	0.42 (0.06)	0.38 (0.01)	0.14 (0.01)	0.20 (0.12)
M10	296	1-Jan	0.82 (0.00)	0.48 (0.32)	0.40 (0.05)	0.42 (0.01)

7. Total N in sugarcane component at 15 cm (g N/100 g dry weight biomass)

Month-code	Day	Sample Date	Leaf	Leaf sheath	Shoot	Root
			0.82	0.48	0.40	0.42
M0	0	9-Mar	(0.06)	(0.02)	(0.03)	(0.01)
			0.64	0.40	0.50	0.33
M1	27	5-Apr	(0.05)	(0.09)	(0.09)	(0.04)
			0.50	0.32	0.46	0.43
M2	60	8-May	(0.02)	(0.10)	(0.01)	(0.08)
			0.54	0.26	0.45	0.47
M3	91	8-Jun	(0.04)	(0.01)	(0.04)	(0.02)
			0.40	0.22	0.30	0.54
M4	123	10-Jul	(0.07)	(0.01)	(0.04)	(0.07)
			0.38	0.13	0.40	0.36
M5	153	10-Aug	(0.01)	(0.02)	(0.11)	(0.03)
			0.25	0.10	0.22	0.33
M6	184	10-Sep	(0.02)	(0.03)	(0.14)	(0.01)
			0.11	0.10	0.59	0.82
M7	214	9-Oct	(0.06)	(0.01)	(0.12)	(0.03)
			0.32	0.17	0.56	0.91
M8	241	6-Nov	(0.02)	(0.01)	(0.01)	(0.04)
			0.22	0.08	0.16	0.12
M9	267	2-Dec	(0.02)	(0.03)	(0.10)	(0.12)
			0.13	0.01	0.12	0.13
M10	296	1-Jan	(0.03)	(0.07)	(0.01)	(0.02)

8. C:N ratio in sugarcane component at 0 cm

Month-code	Day	Sample Date	Leaf	Leaf sheath	Shoot	Root
M0	0	9-Mar	55	92	114	99
M1	27	5-Apr	61	73	90	105
M2	60	8-May	66	72	78	86
M3	91	8-Jun	56	103	86	78
M4	123	10-Jul	47	60	72	70
M5	153	10-Aug	46	59	81	74
M6	184	10-Sep	43	41	65	72
M7	214	9-Oct	39	46	19	10
M8	241	6-Nov	10	12	15	14
M9	267	2-Dec	18	10	69	72
M10	296	1-Jan	39	47	66	68

9. C:N ratio in sugarcane component at 15 cm

Month-code	Day	Sample Date	Leaf	Leaf sheath	Shoot	Root
M0	0	9-Mar	55	92	114	99
M1	27	5-Apr	42	53	66	94
M2	60	8-May	40	47	69	64
M3	91	8-Jun	30	52	59	62
M4	123	10-Jul	32	51	73	52
M5	153	10-Aug	29	37	52	52
M6	184	10-Sep	29	36	86	52
M7	214	9-Oct	28	25	16	16
M8	241	6-Nov	13	19	19	12
M9	267	2-Dec	15	15	61	66
M10	296	1-Jan	32	42	60	61