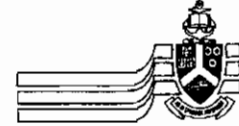


APPENDIX A



EKONOMIESE IMPAK VAN GENETIES GEMANIPULEERDE (GM) PRODUKTE IN ONTWIKKELENDE LANDE

Opname onder kommersiële katoenboere in Suid-Afrika

Hierdie vraelys is deel van 'n navorsingsprojek uitgevoer deur die Universiteit van Pretoria met geen kommersiële belange nie. Die doel van die vraelys is om belangrike inligting van kommersiële boere te bekom om sodoende die ekonomiese impak van geneties gemanipuleerde gewasse op plaas-vlak te bepaal en ook om die verdere effek op die bedryf, op streek sowel as nasionale vlak te voorspel.

Ons sal dit hoog op die prys stel as u van u tyd kan afstaan aan die invul van hierdie vraelys. Ons wil u verseker dat hierdie inligting slegs vir navorsingsdoeleindes gebruik sal word en alle inligting sal dus as konfidentiële gesien word. Vir enige navrae skakel Marnus Gouse by (012) 420 4583 of 082 646 5980

AFDELING A: Die Boerdery

1.1 Naam van eienaar / bestuurder

1.2 Naam van naaste dorp

1.3 U ouderdom? 20-29 30-39 40-49 50+

Produksie en Inkomste

1.4 Wat was die hoof boerdery aktiwiteite vir 2000.

Boerdery aktiwiteite	
Gewas produksie:	
Lewende hawe:	

AFDELING B Gewas produksie

2.1 Watter gesaaides is verbou? Spesifiseer asb. gewas variëteit en aantal hektaar per seisoen en dui asb. aan of dit onder besproeiing of droëland toestande verbou is.

Tipe gewas		1998/99	1999/00	2000/1
		Area geplant	Area geplant	Area geplant
K a t o e n	Variëteit			

2.2 Totale grootte van plaas?

2.3 Wisselbou stelsel? Met wat?

2.4 Watter landboukundige probleme ervaar u met die produksie van katoen.? (Bv. Versouting, onvrugbare grond, lae reënval, onkruid, plaë, siektes ens.)

Landboukundige probleme

2.5 Watter insekte het die grootste negatiewe effek op u katoen?

Insek

Insette

2.6 By wie koop u, u katoensaad?

Saad maatskappy

2.7 Waarom koop u die katoensaad van hiedie spesifieke saad maatskappy?

.....
.....

2.8 Wat is u duurste insette tov. katoen? (Saad, plaagbeheermiddels, onkruidbeheermiddels, spuitkoste (vliegtuig/trekker), versekering, besproeiing, arbeid, kunsmis ens.)

1	
2	
3	
4	

2.9 Hoeveel katoensaad plant u ongeveer per hektaar? Konvensionele katoen.....kg/ha
Bollgard katoen.....kg/ha

Chemikalië

2.10 Aanwending van plaagbeheermiddels by konvensionele katoen variëteite.

Tyd in seisoen	Plaag	Naam van produk aangewend	Aantal kere aangewend	Hoev./ ha (of merk net indien u aanwend soos voorgeskryf deur verskaffer ✓)
Vroeë seisoen (week 0-7)				
Vroeë middel seisoen (8-11)				
Laat middel seisoen (12-20)				
Laat seisoen (week 21-22)				

2.11 Aanwending van plaagbeheermiddels by **Bollgard Katoen**.

Tyd in seisoen	Plaag	Naam van produk aangewend	Aantal kere aangewend	Hoëv./ ha (of merk net indien u aanwend soos voorgeskryf deur verskaffer ✓)
Vroeë seisoen (week 0-7)				
Vroeë middel seisoen (8-11)				
Laat middel seisoen (12-20)				
Laat seisoen (week 21-22)				

Produksie

2.12 Wie is die grootste aankopers van katoen in die omgewing?

--	--

2.13 Waarvoor word u katoen gebruik?

Saad

Lint (vesel)

Ander (spesifiseer)

--

AFDELING C: Bollgard Katoen

Boere wat Bollgard Katoen plant asook boere wat dit nie plant nie moet hierdie afdeling asb. invul.

3.1 Wat is volgens u die voordele verbonde aan Bollgard Katoen?

.....

.....

.....

3.2 Wat is volgens u die nadele verbonde aan Bollgard Katoen?

.....

.....

.....

Afdeling D

Hierdie afdeling is slegs vir boere wat al Bollgard Katoen geplant het of huidiglik plant.

4.1 Wanneer het u die eerste keer van Bollgard Katoen gehoor

--

en van wie?

--

4.2 Waarom plant u Bollgard Katoen? Merk asb. en dui die belangrikste 3 redes aan. Met 1 die heel belangrikste.

Redes	✓	1-3
Hoë opbrengs		
Laer chemikalië kostes		
Arbeid besparing		
Beter plaag beheer		
Prys wat u vir u katoen kry		
Omgewings voordele		
Gemoedsrus ten opsigte van bolwurms		
Vergemaklik bestuur		
Ander (Spesifiseer asb.)		

4.3 Wat is die hoof rede waarom u Bollgard Katoen plant?

.....
.....

4.4 Wie het u besluit om Bollgard Katoen te plant beïnvloed?

.....
.....

4.5 Het u enige ekstra opleiding/inligting ontvang in verband met die produksie van Bollgard Katoen?

Ja Nee

4.6 Wie het die opleiding georganiseer?

Voorligters Saad maatskappy Ander (Spesifiseer)

4.7 Enige opmerkings oor opleiding of verskaffing van inligting ivm. Bollgard Katoen?

.....
.....

4.8 Bemerkt u 'n toename in natuurlike predatore in u Bollgard lande?

Meer Minder Onseker Wat ?

4.9 Is u tevrede met die Bollgard Katoen wat u geplant het. **Hoekom?** Ja Nee

.....
.....

4.10 Wat is die tegnologie-fooi wat u betaal, en dink u die prestasie van die saad wat deur die tegnologie moontlik gemaak is, regverdig die fooi?

Fooi

.....
.....

4.11 Indien die tegnologie fooi sou daal, sal u meer Bollgard katoensaad koop en plant?

Ja Nee

4.12 Sou u bereid wees om 'n hoër tegnologie fooi te betaal, indien die voordeel wat u uit hierdie saad verkry konstant bly? Bv. as die tegnologie-fooi sou styg met dieselfde persentasie as die prys van plaagbeheermiddels.

.....
.....

Afdeling E

Boere wat nie Bollgard Katoen plant nie moet asb. hierdie afdeling invul asook boere wat in die verlede Bollgard Katoen geplant het maar nie meer plant nie.

5.1 Sal u dit oorweeg om in die toekoms / weer Bollgard Katoen te plant?

Ja Nee

Indien Ja:

5.2 Wanneer?

.....
.....

5.3 Waarom sal u Bollgard Katoen plant?

.....
.....

5.4 Waarom plant u nie huidiglik Bollgard Katoen nie? Merk asb.

Redes	
Ken nie die variëteit nie	✓
Nie genoeg inligting oor die produksie van die variëteit nie	
Huidige Bollgard variëteit is nie regte variëteit vir u omgewing nie.	
Ontvang hoër prys vir Nie-Bollgard katoen	
Koste van die saad is te hoog	
Die plaag waarvoor Bollgard ontwikkel is, is nie 'n probleem in die gebied nie	
Bekommerd oor verbruiker/aankoper se reaksie/houding	
Nie goed vir die omgewing nie	
Nie winsgewend nie	
Ander (Spesifiseer asb.)	

5.5 Wat is die hoof rede/s dat u nie Bollgard Katoen plant nie?

.....

AFDELING F Veranderinge en Inligting
(Almal vul asseblief hierdie afdeling in.)

6.1 Volgens u ervaring is daar hierdie seisoen 'n verandering in die aantal bolwurms op konvensionele katoen?

Minder Selfde Meer

6.2 Bemerk u 'n toename of 'n afname in die verskynsel van ander skadelike insekte. Spesifiseer asb.

Insek	Meer of minder

6.3 In vergelyking met vorige jare is bolwurms gevoeliger vir chemikalië.

Minder Geen verandering Meer

6.4 Van waar ontvang u inligting oor:

Produksie	
Insette	
Uitsette (bemarking)	
Plaag beheer	

6.5 Wat dink u is die toekoms van biotegnologie in die landbou?

.....

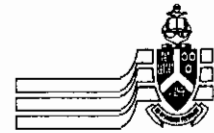
6.6 Enige ander opmerkings oor biotegnologie:

.....

6.7 Sou u belang stel om in die toekoms geneties gemanipuleerde katoen te plant wat Roundup bestand is?

Ja Nee Waarom?

.....

APPENDIX B


Yieldgard Maize vs. Conventional Maize

Questionnaire for South African Small Holders

This questionnaire is part of a research project conducted by the University of Pretoria in collaboration with Monsanto. The aim of this survey is to collect necessary information from farmers to determine the possible reasons for adoption and to evaluate the performance of Bt maize as produced under smallholder conditions.

All information will be treated with utmost confidentiality.

Section 1. Personal information

1.1	Respondent Number																			
1.2	Name of Interviewer																			
1.3	Date of interview	2	0	0	2															
1.4	Nr on certificate																			
1.5	Language																			
1.6	Province																			
1.7	Area																			
1.8	Village																			
1.9	Family name of respondent (surname)																			
1.10	Own name																			
1.11	Identification number																			
1.12	Phone number (if available)																			
1.13	Residential address																			
1.14	Position in household																			
1.15	Gender	Male									Female									
1.16	Age group	<20	20-29	30-39	40-49	50+														
1.17	How long have your household been farming with maize?										Years									
1.18	Did you personally attend the Yieldgard training course? If no, who did?																			

Section 2. Household Background

2.1 Who are the members of your current household? Please specify below.

	Members of household (e.g. father, mother, uncle, son)	Age / Year of birth	Family members working on farm Land preparation and planting (1), applying pesticides (2), fetching water (3), weed hoeing (4), harvesting and shelling (5), other please specify (6)		Wage earner Living in household	Migrant worker Work in town or city. Do not sleep at home	Local business
			Full time / part time	Days work in maize season			
1	Head						
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							

2.2 Who is responsible for on-farm decision-making? Male Female

2.3 What is decision maker's highest level of education?

None	
Grade 1-3 (Grade 1 – Standard 1)	
Grade 4-7 (Standard 2 – Standard 5)	
Grade 8-10 (Standard 6 – Standard 8)	
Grade 11-12 (Standard 9 – Standard 10)	
Degree/Diploma	
Training on commercial farm	
Other	

2.4 What are the sources of household income?

Source	Estimated income in Rand value. Please specify whether it is monthly or yearly
Crop Production: Green mealies	
Maize grain	
Cotton	
Other (specify)	
Livestock (specify)	

Off-farm income: (From whom / where?)	
Wage earner:	
Migrant workers:	
Other business:	
Pension:	
Total	

2.5 Please name your 5 biggest household expenses?

1	
2	
3	
4	
5	

2.6 If you an extra R1000 in, what would you spend it on?

Section 3. Farm and products

3.1 Area of total farm in 2001/2002 (Please specify units)

Area owned Area rented

3.2 Hectares of farm. (If farmer is not totally sure, or do not know this, go with farmer to measure the pastures and draw picture on back of page, indicating crop layout and size of pastures.)

	Ha of crop in 2001/2002 season
Maize	
Cotton	
Sugarcane	
Other field crops	
Area planted for vegetables	
Grazing	
Other	

3.3 Do you have any Yes No livestock?

3.4 If yes, fill in the table below about the type and number of animals you own.

Livestock	Number owned
1. Cattle	
2. Goats	
3. Chickens	
4. Sheep	
5. Donkeys	
6. Other	

Maize seed

3.5 Where do you normally get the maize seed you plant? Please tick or fill in?

Buy hybrid seed from seed company / coop / agents (Go to 3.6)	I bought/received seed from neighbours/family that they saved from last season's harvest. (Go to 3.9)
I plant seed I save from the previous season's harvest (Go to 3.9)	I plant traditional maize seed (Go to 3.9)
If farmer does not buy hybrid seed. Why not?	

3.6 Who do you normally buy your maize seed from and how far do you have to travel to collect it?

Who? (coop.,company)	
Distance	

3.7 How much do you normally pay for your maize seed? Please specify units?

2001/2002 (this season)	
2000/2001 (previous season)	

3.8 If the price of hybrid maize seed went up/down how much less/more seed would you buy? Using price at question 3.7

Price up by 25%		Price up by 50%		Price up by 100%		Price down by 25%	
No change	% Less	No change	% Less	No change	% Less	No change	% More

3.9 What are the names of the maize seed types you have planted the last 2 seasons? (Not including the Monsanto seed)

2001/2002	
2000/2001	

3.10 How much maize seed did you plant this year and when did you plant which seed?

	How much seed? (Please specify units)	When did you plant?
Own seed		
Non Bt seed (White sticker)		
Yieldgard seed (Yellow sticker)		

3.11 Plant density. Please specify units. (Distance in steps.)

	How many rows or hectares	How long is the row (steps)	How many plants in a row	Distance between plants in row	Distance between rows
Own seed					
Non Bt seed (White sticker)					
Yieldgard seed (Yellow sticker)					

3.12 Do you practice intercropping with maize? Please name crops and explain how?

Yes No

Green Mealies:

3.13	Did you harvest green mealies this year?	Yes	No	
3.14	From which maize seed did these green mealies come?	Own seed	White sticker	Yellow sticker Yieldgard seed
3.15	Did you sell green mealies in the community?	Yes	No	
3.16	From which maize seed did these green mealies come?	Own seed	White sticker	Yellow sticker Yieldgard seed

3.17 How many green mealies did you **harvest**? (Please specify mealies, bags containing how many mealies, rows etc.)

Seed	Quantity	Unit
Own seed		
White sticker		
Yellow sticker Yieldgard seed		
Total		

3.18 How many green mealies did you sell?

3.19 How much did you sell your green mealies for? (Specify unit e.g. R10 for 12 mealies or R2 per mealie)

Own seed	
White sticker	
Yellow sticker Yieldgard seed	

3.20 Which seed rendered the best green mealies according to the following? Tick and fill in reason?

		Own seed	White sticker seed	Yellow sticker Yieldgard seed	Please give a reason why you think the one you chose is better?
1	Length of mealie				
2	Size of kernels				
3	Colour				
4	Insects present and damage caused				
5	Taste				
6	Which green mealies did you and the community prefer?				

3.21 How do you like your green mealies? Please describe? (Size, colour, cooked how?)

3.22 Any notes or interesting stories about green mealies:

Grain

3.23 Use of maize. What do you do with your maize? (Can tick more than one)

Green mealies for own consumption	Green mealies sold in community	Sell grain to miller and get maize meal in return
Sell maize grain to millers for money	My maize is milled for me, by the miller at a cost	Sell maize grain to community
Animal feed	Other:	

3.24 Please tick the blocks and fill in the quantities that describe the bags you delivered your maize grain in. (To the coop or the miller)

1 Tick or fill in	My bags are filled with:	Shedded maize kernels (seeds)	Dried maize ears	?	?
2 Tick or fill in	My bags are:	Filled to the top and tied with rope or wire	Almost filled to the top and closed by making a knot with the bag	?	?
3 Tick or fill in	What type of bags do you use?	40 kg maize meal bag	50 kg maize meal bag	?	?
4 Fill in	Quantity of bags harvested according to type of bag:				
5 Fill in	How much do you think one of these filled bags weigh?				
6 Fill in	How many bags did you deliver to the miller in return for maize meal?				
7 Fill in	How many bags did you deliver to the local Coop. / community or buyer in return for money?				
8 Fill in	How many bags of grain have you kept for own use?				

3.25 How many bags of maize meal are you entitled to after delivering your grain to the miller?(in 3.24.6) Please specify size of meal bag and the cost you paid for the milling process?

3.26 Where is your maize usually milled, how far is it from you and how much do you have to pay to travel there? Please specify units?

3.27 If you sell your maize, who do you sell it to?

3.28 How much money did you receive from the coop. or community or buyer in return for the above-mentioned number of bags of grain? (in 2.24.7)

3.29 How far do you have to transport your maize and what is the cost of transport? Please specify units?

3.30 How many bags came from which maize seed? Please tick or fill in?

Type of bags you used	40 kg maize meal bags	50 kg maize meal bags	?	?
Own maize seed				
White sticker seed				
Yellow sticker Yieldgard seed				

3.31 What do you think the quality of the maize grain you harvested was? Please tick?

Own maize seed	Excellent	Good	Average	Below average	Bad
White sticker seed					
Yellow sticker Yieldgard seed					

Section 4. Maize Enterprise

4.1 Do you practice crop rotation? Name Yes No crops

4.2 What is the distance from your maize field to the nearest fresh water point? Please specify units?

4.3 How far is your house from your maize field?

4.4 What are your main reasons for growing maize?

4.5 What are the difficulties when growing maize on your farm?

Agronomical (infertile soil, low rainfall, weeds, insects)
Non –Agronomical (land tenure, labour, credit, vandalism, transport etc)

4.6 What are the 5 most expensive inputs used in maize production and how much do you spend on these inputs? E.g. fertiliser, land preparation, pesticides, total labour, seed)

Rank of expensiveness	Inputs	Amount in Rand value as used on your total maize area
1		
2		
3		
4		
5		

Fertilizer

4.7 Do you use any type of fertilizer? If Yes, what and how much? Please specify units eg. 120kg / ha. If No please give a reason why not?

Yes	No
-----	----

4.8 If farmer answered yes at 4.7: Where do you buy fertiliser and how far do you need to travel to collect your fertiliser?

Insects

4.9 Which insects have the biggest negative effect on your maize on the field, on your maize grain when harvested and in your stored maize meal?

Rank	Insects on maize in the field	Insects on stored maize	Insects in stored maize meal
1			
2			
3			
4			

4.10 Do you apply any pesticides on your maize crop? If so, please fill in?

On maize from which seed?	Name of product	Target insect	Times applied	Method of application (spraying, granules by hand)

Land Preparation, Planting and Weeding

4.11 How do you prepare your land for maize production? Please tick or fill in?

Land is prepared by a contractor	Plough with donkey or oxen	Prepared using own tractor
Don't plough (Conservation tillage)	Other	

4.12 How do you plant you maize seed? Please tick or fill in?

Land is planted by a contractor	Plant using an animal drawn planter	Plant with hand and hoe (skoffel)
Plant using own tractor and planter	Other	

4.13 How do you manage weed in your maize fields. Please tick or fill in?

Chemicals	Family labour	Hired labour	Other:
-----------	---------------	--------------	--------

4.14 Quantifying the weed labour: Including yourself, how many people work for how many days and for how many hours a day weeding on your maize field?

Number of people	Number of days	Hours of weeding in day	Total of weeding hours

4.15 Do you need to supply hired workers with food through the day?

Yes	No
-----	----

Section 5. Health

(If you apply pesticides please fill in this section)

5.1 Have you or a family member ever had any health problems after applying pesticides. Please supply the name of the pesticide or the insect the application was for and specify the health problem?

--

5.2 Have you or a family member ever had any health problems after eating mealies that were treated with any pesticides? Please supply the name of the pesticide or the insect the application was for and specify the health problem?

--

5.3 How do you apply the pesticide? Tick or fill in?

Apply granules by hand wearing protection	Apply granules by hand wearing no protection	Spraying with protective clothing
Spraying without protective clothing	Other:	

5.4 What do you do with the empty pesticide containers? Tick or fill in?

Wash it and through it away	Through it away without washing it	Wash it and use it to transport fresh water for household	Other:
-----------------------------	------------------------------------	---	--------

Section 6. Savings and credit

6.1 Where do you get your production credit? (Please tick)

	2000/2001	2001/2002
Own money		
Commercial Bank		
Family and friends		
Micro lenders		
Private money lender		
Farmer support programme		
Other (specify)		

6.2 How much of your loan were you able to repay this year? Why? %

6.3 Do you have any Yes No savings?

6.4 What is the main income source of this savings?

Section 7. Adoption of Bt Maize

7.1 According to your experience of maize production this season, what are the benefits and problems of Yieldgard maize? (Monsanto's yellow sticker maize seed) Please tick

Benefit		Problem	
Increased yield		Difficult to manage	
Better quality		Bt maize does not control stalk borer well enough	
Receive higher price for Bt maize		Lower quality	
Insecticide savings		Low yield	
Labour savings		Low price for Bt maize	
Green mealies are very tasty		The green mealies are not tasty	
Renders very good maize meal		The maize meal is not tasty	
Less chemical health hazard		Millers will not buy Bt maize	
Better pest management		Weak grower	
Easy to manage crop		Other problem insects	
Peace of mind about stalk borers		Big problems with birds	
Reduce need for spraying water		Other	
Less stalk borers on maize			
Other			

7.2 Compared to a normal year how many stalk borers are there this season on the maize from **your own** seed?

<input type="checkbox"/> Less than normal	<input type="checkbox"/> Same	<input type="checkbox"/> More than normal
---	-------------------------------	---

7.3 Compared to the maize from **your own seed** how many stalk borers are there on the **white sticker** maize?

<input type="checkbox"/> No stalk borers on the white sticker maize	<input type="checkbox"/> Less than on my own maize	<input type="checkbox"/> The same as on my own maize	<input type="checkbox"/> More on than on my own maize
---	--	--	---

7.4 Compared to the maize from the **white sticker** seed how many stalk borers are there on the **Yieldgard (yellow sticker)** maize?

<input type="checkbox"/> No stalk borers on the yellow sticker maize	<input type="checkbox"/> Less than on the white sticker maize	<input type="checkbox"/> The same as the white sticker maize	<input type="checkbox"/> More on than the white sticker maize
--	---	--	---

Section 8. Next season

8.1 What type of maize seed will you plant next year?

8.2 Based on the Yieldgard maize seed benefits you have seen, are you **willing to pay more for the Yieldgard** maize seed than for conventional maize seed?

Area	Total					Own conventional seed		CRN 3549 (White sticker)		Yieldgard seed (Yellow sticker)	
	Amount					Amount		Amount		Amount	
Value of maize production											
Income out of green mealies											
Income out of grain sold											
Value of green mealies consumed											
Value of maize meal consumed											
Cost of inputs											
Land preparation and planting											
Seed											
Fertilizer											
Weed control (Chemical)											
Pesticides (specify)											
	Workers	Days	Hours / day	Cost / day	Total cost						
Total Labour											
Land preparation and planting											
Labour for weed control											
Labour for harvesting and shedding											