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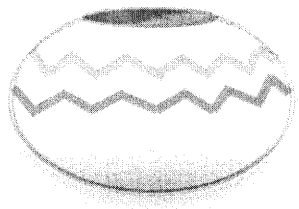
Report on Archaeological Survey

on portions of the farm

Moriah 238 KT

Compiled by



Kudzala Antiquity

July 14, 2003

Surveyor, Mr JP Celliers BA (Hons) Archaeology.

Introduction

The National Heritage Resources Act (Act no. 25 of 1999) requires all developers (engineers, farmers, mines) to undertake impact assessment studies whenever any development activities are undertaken.
The law also provides guidelines for impact assessment studies to be done whenever cultural resources may be destroyed by development activities.

Against this background an archaeological survey was carried out on July 5, 2003 on the farm Moriah, situated a couple of kilometers to the west of Hoedspruit in Limpopo Province.

During the survey some cultural remains, particular to the Iron Age of Southern Africa were found on various locations.

These included some broken shards of pottery (ceramics) associated with Iron Age communities and settlement. Some items reminiscent of more historic times such as pieces of iron and broken bottle shards were also found. Weathered stone structures that remind one of stone walls that are also associated with Iron Age communities are scattered on the property. There is very little evidence to suggest large scale settlement by historic communities. It must be noted though, that most archaeological remains are situated beneath the soil surface and a survey of this nature alone is not enough to identify extensive remains.

It is important to note that the survey carried out must be seen as a preliminary survey which purpose is to identify and locate surface materials associated with previous occupation by people of the past.

During such a survey, it is not possible to accurately date any archaeological site, detailed excavation and examination of artefacts (cultural remains) is required to do so.

When the archaeologist encounters a situation where the planned project will lead to the destruction of an archaeological site, a second phase in the archaeological survey is normally recommended. During this second phase, archaeological excavation is carried out in order to accurately and extensively document and preserve the cultural heritage.

This is not always the case (destruction by development) and depending on the situation, communication between the developer and archaeologist may

1. Description of area

The survey was carried out on the farm Moriah 238 KT which is situated 22 km west of Hoedspruit in Limpopo province. The farm extends over a total area of 330, 45 hectares and is situated within the Maruleng Local Municipality and Bohlabela Municipality's area of jurisdiction.

The Blyde River flows past on the eastern boundary and the Drakensberg Mountains are situated on the western side of the property. The farm is divided into sections of natural Bushveld as well as orchards which include mango, citrus and guava trees.

There is a variety of game on the farm, including impala, blesbok and wildebeest among others.

The survey was mostly carried out in the least disturbed areas of the farm. This included the natural Bushveld and excluded cultivated sections as well as areas where there are structures such as homesteads and store or packhouse facilities.

2. Aim of survey

The archaeological survey was carried out in order to establish whether any cultural remains on top of or under the soil surface, are in danger of being damaged by development activities planned on the property.

During an initial survey it is not possible to detect archaeological remains beneath the soil surface, it is therefore important and recommended that an archaeologist be present when the soil surface is disturbed during construction, or at least summoned during such activities when items likened to those described in this report are discovered.

Such cultural remains, when found, would be considered part of South Africa's cultural heritage and are therefore referred to as cultural resources. According to van Vollenhoven (1995:3) cultural resources can be described as all unique and non-renewable physical phenomena (of natural occurrence or made by humans) that can be associated with human (cultural) activities. This includes settlements, structures and artefacts which have value for an individual or group of people in terms of historical, archaeological, architectural and human (cultural) development.

soil surface, but the shape of the rim and side of the vessel indicates that it most probably belongs to the Late Iron Age.
"In general terms Early Iron Age pottery tends to be thick, pale (pink, buff, or reddish) in color and freely and boldly decorated. By contrast the Later Iron Age pottery is generally thinner and almost invariably grey...," Inskeep, 1978: 124.

4.1 Pottery

Broken potsherds were found on three locations removed from one another by at least a couple of hundred meters. The first of these locations LM 3 (see list of site locations) contained very little broken pottery shards and none of them were decorated in any way. It is therefore difficult to ascribe them to a specific period in our history. Suffice to say that where these were found, is near to the location LM 4 (see list of site locations) where the nature of the pottery is better known and thus might also be of Late Iron Age origin.

The Iron Age in Southern Africa is divided into three time frames namely the Early Iron Age (200 – 900 A.D.), Middle Iron Age (900 – 1500 A.D.) and the Late Iron Age (1500 – 1800 A.D.).

Archaeological evidence suggests that Iron Age communities have been settled in Southern Africa (south of the Limpopo River) since at least 200 A.D. (Hall 1987:13) In other words 200 years after the birth of Christ.

The Late Iron Age can be viewed in terms of historic times as historic documents and ethnic legend and traditions contain information about the history of the indigenous cultures. Various Sotho groups settled in the northern and north eastern areas of the South African interior during this time but they were incredibly diverse in terms of ancestry which makes any ethno-historic study a very difficult task indeed (Evers, 1974: 79).

Archaeologists ascribe ceramics (pottery) to specific traditions or modes of manufacture, this places the pottery in a rough chronological sequence and serves as a relative dating technique. One of these traditions is known as the Lydenburg tradition (500-800 AD) which is probably too early a date for these remains. It is however, possible that these remains represent a later stage of the Lydenburg tradition.

A later Iron Age tradition called the Phalaborwa Culture can also be linked to the pottery found on location. According to Evers (1974) most of the information on the north-eastern Lowveld Iron Age is ascribable to this

5. Findings and recommendation

Early settlement on this site probably extended over a bigger area. A lot of the settlement locations might unknowingly have been disturbed by farming activities.

Surface materials representative of these sites is not always visible as most of the material evidence present on all archaeological sites is under the soil surface. It is therefore essential that an archaeologist be notified immediately if future excavation works reveal materials of a similar nature. This might lead to a situation where further archaeological investigation is necessary and also have further financial implications.

List of photos

Photos appear in a folder named Moriah and are numbered 1-25.

Moriah 1, 10: Photos of the possible stone wall across the motor track on location LM 1.

Moriah 2: Potshards found on location LM 4. Note decoration.

Moriah 3: Potshards found on location LM 4 with Middle Stone Age flake.

Moriah 4, 5: General photo of location LM 4. Photo taken in southern direction

Moriah 6, 7: Photos of Late Iron Age ceramic vessel (bowl) found on location LM 4.

Moriah 8: General photo of location LM 3. Photo taken in eastern direction

Moriah 9: Photo of pot shards and bottle base on location LM 3.

Moriah 11: General photo of area where Lodge is to be constructed, photo taken in eastern direction. Location LM 5

Moriah 12: Some iron objects found on location LM 6. Pen indicates piece of old bottle neck.

Moriah 13: Photo of potshards found on location LM 6.

Moriah 14, 23: Photos of possible graves at location LM 6.

Moriah 15, 16: Photos of rocks arranged in straight line in east-west direction. Location LM 6

Moriah 17, 18: Photos of possible grave site at location LM 6.

Moriah 19, 20: General photos of location LM 6. Note Sisal trees.

Moriah 24, 25: Photos of where once a grave must have been. Location LM 7

Site name: LM 4

Date of compilation: 05/07/03
GPS reading: Longitude, 30° 49, 005' E
Latitude, 24° 25, 431' S
Altitude, 524 meters
Description: Open patch of sandy soil around 20 meters north of motor track. Numerous pot shards scattered on the soil surface.
Photo: Moriah 2, 3. Potshards found on location.
Moriah 4, 5. General photo of location, taken in southern direction
Moriah 6, 7. Photos of Late Iron Age ceramic vessel

Site name: LM 5

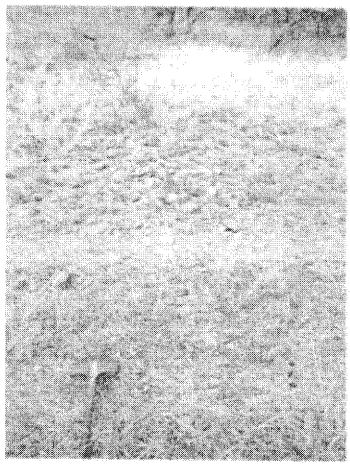
Date of compilation: 05/07/03
GPS reading: Longitude, 30° 49, 099' E
Latitude, 24° 25, 336' S
Altitude, 558 meters
Description: Open rocky piece of earth where planned lodge is to be constructed. Photo taken in eastern direction
Photo: Moriah 11.

Site name: LM 6

Date of compilation: 05/07/03
GPS reading: Longitude, 30° 49, 236' E
Latitude, 24° 25, 086' S
Altitude, 555 meters
Description: A site marked by the occurrence of various Sisal trees, indicative of human occupation, on the right hand side of the motor track.
Photo: Moriah 19, 20. General photo of location taken in eastern direction.
Moriah 17, 18. Possible graves
Moriah 15, 16. Rocks aligned in straight line, east-west direction.
Moriah 13. Potshards found on location LM 6.
Moriah 12. Some iron objects found on location LM 6.

MORIAHA

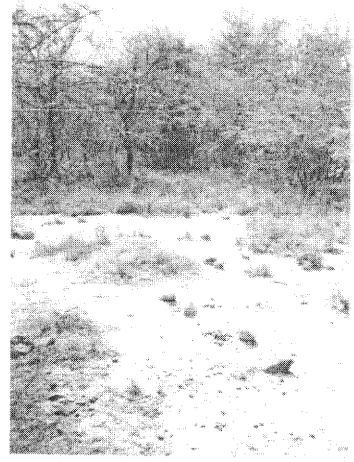
The "L" represents Limpopo (Province) and the "M" represents Moriah.



LM 1

LM 2

LM 3

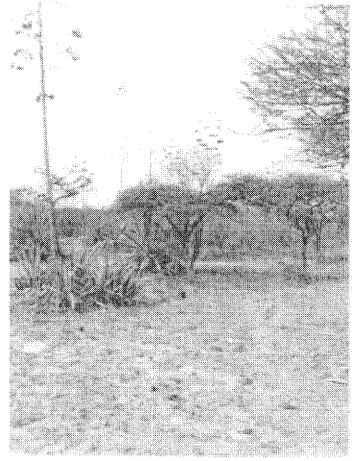


LM 4

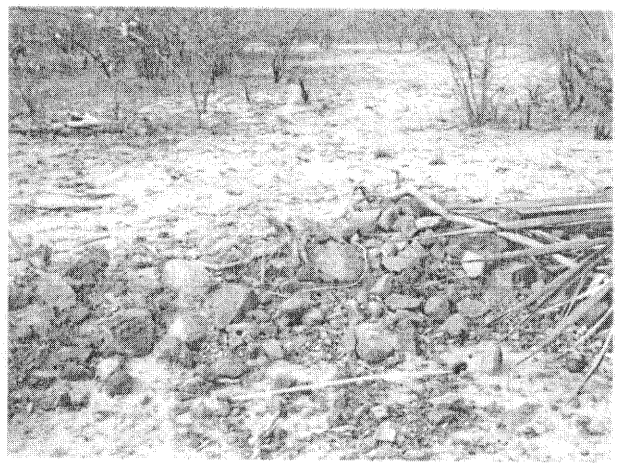
LM 5

LM 6

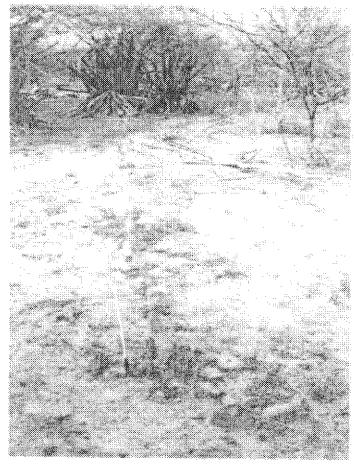
LM 14



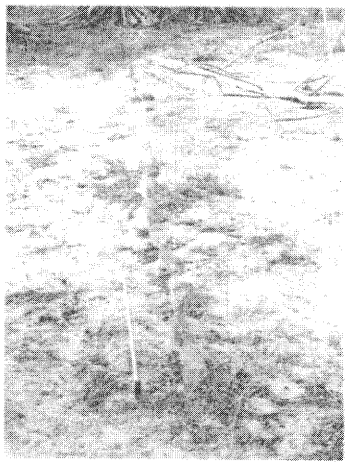
LM 15



LM 16



LM 17



LM 18

LM 19

APPENDIX L

- Group 1:

The veld is dominated by young Acacia trees especially Flaky thorn (*A. exuvialis*) which grows very dense here (Photo 1).

Photo 1

Plot 1-3 and 15-18 is also heavy overgrown with exotic species (guava tree and *Lantana camara* spp.) which is currently being eradicated. Sickle bush is also a common species but unlike in most cases it is not encroaching anywhere on the farm.

Plot 15-20 and 1-3 can be described as wet areas because of the seepage water from the dams on the neighbouring farm. This then explains the small reed patches and the water loving species e.g. Ficus sycomorus, growing there.

Plot 4-14 and 20-26 has big Nyala trees, Apple leaf trees, River bushwillows, Weeping boer-beans (Photo 2), Tree wisterias, Lead wood and Buffalo thorn. On Plot 8-10 a patch of Tambotis can be found. (The stream indicated on the map, in this area is a small loop and mostly dry).

On Plot 3-5 grows two of three Baobabs on the farm (Photo 3)

Photo 2

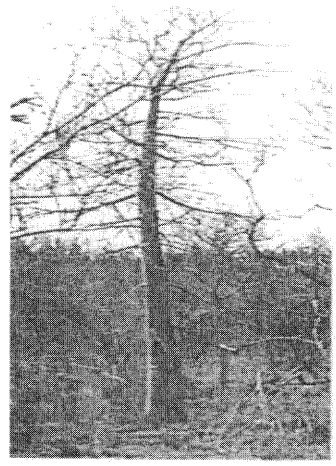


Photo 3

Shepard's tree (Photo 10) and Savanna gardenia (Photo 11) are also commonly found in this group of plots.

Photo 8

Photo 9

Photo 10

Photo 11

Plot 38-70 is very similar to the rest of the veld with species like Tree wisterias, River bushwillows, Weeping boer-beans, Common spike thorn, Marula etc.

Plot 65-70 is very rocky as are most of the areas next to the old land

- Group 3:

This group is very similar to Group 2, with species like the Nyala tree, Marula, Puzzle bush and other moist loving species along the river (Photo 12 & 13).

Plot 58-64 is also very rocky and Mother in laws tongue (Photo 14) can be found growing in places. The rocky areas are more open and species like the Scented thorn and Red bushwillow are dominant.

veld will recover itself. The same goes for trees but it takes much longer for this to happen.

4. Conclusion:

All the above mentioned information should be taken into consideration when developing the area.

The Baobabs, Amaryllis, Short thorn pomegranate, Silver Cluster Leaf and Shepard trees must be conserved. Ideally the big trees should also be reserved.

Species list:

Common name	Scientific name
Amaryllis	*Crinum delagoense*
Black monkey orange	*Strychnos madagascariensis*
Baobab	*Adansonia digitata*
Brown ivory	*Berchemia discolor*
Buffalo thorn	*Ziziphus mucronata*
Common cluster fig	*Ficus sycomorus*
Common spike thorn	*Maytenus heterophylla*
Flaky thorn	*Acacia exuvialis*
False Marula	*Lannea stuhlmannii*
Jackal-berry	*Diospyros mespiliformes*
Jacket-plum	*Pappea capensis*
Knob thorn	*Acacia nigrescens*
Leadwood	*Combretum imberbe*
Lowveld Cluster Leaf	*Brachylaena huilleensis*
Magic guarri	*Euclea divinorum*
Marula	*Sclerocarya birrea*
Mother in Laws tongue	
Nyala tree	Xanthoceris zambesiaca
Olive tree	*Olea europea*
Paperbark thorn	*Acacia sieberiana*
Puzzle bush	*Ehretria regida*
Red bushwillow	*Combretum apiculatum*
Red thorn	*Acacia gerrardii*
Red ivory	*Berchemia zeyherri*
River bushwillow	*Combretum erythrophyllum*
Savanna gardenia	*Gardenia volkensii (spathulifolia)*
Scented thorn	*Acacia nilotica*
Shepard's tree	*Boscia albitrunca*
Short thorn pomegranate	*Rhigozum brevispinosum*
Sickle bush	*Dichrostachys cinerea*
Silver clusterleaf	*Terminalia sericea*
Tamboti	*Spirostachys africana*
Three-hook thorn	*Acacia Senegal*
Tree wisterias	*Bolusanthus speciosus*
Weeping boer-bean	*Schotia brachypetala*
White raisin	*Grewia bicolour*

APPENDIX M

APPENDIX N

Inleiding

Vrugteboerdery in Hoedspruit het aanvanklik langs die Olifants- en Blyderiviere ontstaan. Dit is in die veertigerjare van die vorige eeu uitgebrei met die ingebruikneming van die grond-kanaalsisteem. Die derde fase van uitbreiding is tans in proses met die inwerkingstelling van meer as 100km pype wat uiteindelik die kanale sal vervang. Dit kan lei tot vrug- en groente produksie op meer as 8 000 hektaar landbougrond. Dit sal waarskynlik ook verseker dat primêre water vir huishoudelike doeleindes aan sekere gebiede verskaf kan word.

Die betalendste mark vir vrugte is in die buiteland, veral Europa, Japan en die Midde-Ooste. Vrugte vry van merke en residue is 'n vereiste, nie net vir markkragte nie maar ook uit 'n voedselveiligheids-oogpunt. Weens die grootskaalse aanplanting van monokulture word die natuurlike balanse gereeld versteur en word chemikalieë benodig om volgehoue produksie te verseker. Hierdie chemikalieë is duur en moet daarom met presisie op die teiken-areas aangewend word. Die aanwending van chemikalieë word meestal met spuitmasjiene gedoen.

Daar is egter al vir 'n paar dekades die besef dat om volhoubaar te boer sal aanpassings gemaak moet word. Sommige produsente meen die oplossing lê in die integrasie van verskillende praktyke. In sulke gevalle word bestuurspraktyke, chemikalieë en biologiese beheermetodes saam ingespan om onkruide, insekte, swamme en bakterieë te beheer. Dit staan algemeen as Geintegreerde Vrugproduksie ("Integrated Fruit Production") bekend.

1. Die aard van die dreuning van spuitkarre

Spuitmasjiene in die Hoedspruit-area bestaan hoofsaaklik, vir die doeleindes van hierdie verslag, uit twee tipes:

a) Spuitkarre met handspuite toegerus wat gebruik word sonder dat 'n waaier aangeskakel word en
b) Spuitkarre wat met waaierhulp funksioneer.

Laasgenoemde se dreuning word deur die waaier veroorsaak. Die hoek waarteen die waaierlemme werk is meestal verstelbaar en hoe groter die hoek hoe meer is die weerstand om meer lug te genereer en daarom dan harder klank. 'n Groter hoek verg egter meer energie en daarom vind die meeste boere 'n kompromie teen ongeveer 25°.

Lugondersteunde bespuiting (spuitkar toegerus met 'n waaier) word tans beskou as die effektiefste vorm van verspreiding van chemikalieë in 'n vrugteboom. Die alternatiewe naamlik drukgesteunde bespuiting, lugbespuitings (m.b.v 'n vliegtuig), stamverwe of grondbehandelinge het almal beperkinge wat die algemene gebruik daarvan inkort. Selfs organiese boerdery (tans sowat 100 ha in Hoedspruit) is onderhewig aan lugondersteunde bespuitings.

2. Die periode wanneer die spuitkarre behoort te werk

Spuitkarre se aktiwiteit is direk gebonde aan die groeisiklus (fenologie) van 'n gewas. Die area rondom Calienta is hoofsaaklik beplant met sitrus en mango.

praat omdat voedingstowwe, stimulante, pH stabiliseerders, benatters, kleefmiddels, penetreerders, olies en sonbeskermingsmiddels ook gespuit word met spuitkarre (Tabelle 3, 4 en 5). Sommige van hierdie middels is gelys as organiese produkte.

Die belangrikste chemikalieë wat gebruik word kan verdeel word in drie groepe naamlik Onkruiddoders, Insekdoders en Swam/Bakterie doders. Breedweg kan hierdie chemikalieë almal in twee groepe verdeel word naamlik die met 'n kontakwerking en die met 'n sistemiese werking. Met kontakwerking word bedoel dat waar die chemikalie op 'n onkruid, insek of swam/bakterie beland, dit met aanraking gedood word. Met sistemiese werking word bedoel dat dat die chemikalie deur die plant opgeneem word. Die onkruid se fotosintese proses word dan byvoorbeeld gestaak/benadeel. 'n insek neem die gif op wanneer dit aan die plant vreet of suig of 'n swam/bakterie word gedood wanneer dit in aanraking met die plant se sappe kom.

Sommige onkruiddoders word gedeaktiveer wanneer dit met organiese materiaal in water in aanraking kom. Dit maak dit dus veiliger om langs riviere of damme te gebruik.

Insekdoders wat gebruik word val onder verskeie groepe soos karbamate, organofosfate, piretroiede, organochloriene, insekgroeireguleerders en andere. Dit is hierdie groep wat oor die algemeen die grootste gevaar vir die mens en natuur inhou.

5. Toksisiteit van gifstowwe

Die relatiewe giftigheid van onkruiddoders, swammiddels en insekdoders kan aansienlik verskil (sien Tabelle 3 en 4). Dit word as 'n LD_{50} syfer uitgedruk in milligram gif per kilogram liggaamsmassa. Hierdie syfer word in laboratoriums bepaal met proefdiere (meestal muise of rotte) en word toegedien totdat 50% van die populasie sterf. Enige chemikalie besit 'n LD_{50}. Tafelsout het 'n LD_{50} van 3 320mg/kg, aspirien 1 240mg/kg en strignien 1 – 25mg/kg. Dit beteken dat 'n volwassene van 70kg wat 232g sout inneem in 'n gegewe periode 'n 50% kans staan om te sterf indien die ekstrapolering van laboratoriumdiere na mense geldig is.

Die wêreld gesondheidsorganisasie het streng reëls oor die klassifikasie van gifstowwe. Gifstowwe word in vier klasse verdeel naamlik klas 1 (a en b), 2, 3 en 4.

Tabel 2: Gifklasse

Klas	Relatiewe Giftigheid LD_{50} vir rot (mg/kg ligg massa)		Kleurkode	Spesiale merke
	Oraal			
	Vaste stowwe	Vloeistowwe		
1a Uiters giftig	5 of minder	20 of minder	Rooi	Doodshoof
1b Giftig	5 - 50	20 – 200	Rooi	Doodshoof
2 Gevaarlik	50 - 500	200 – 2 000	Geel	Maltese kruis
3 Versigtig	>500	>2 000	Blou	Geen
4 Geen spesiale voorskrifte	>2 000	>3 000	Groen	Geen

Klas 1 is die giftigste stowwe en word aangedui met 'n rooi band op die etiket. Die doodshoof met kruisbeendere ("skull and crossbones) moet op die rooi band verskyn. Klas 2 gifstowwe word aangedui met 'n geel band wat onderbreek word met 'n Maltese kruis. Klas 3 word met 'n blou band aangedui en Klas 4 met 'n groen band

TABEL 3: Gewas beskermingprodukte op Sitrus

Chemikalie	Tipe	Wagperiode RSA	MRL RSA (mg/kg)	LD_{50} Oraal (mg/kg Ligg massa)
Acetamiprid	I	150 – 180	0.2	146 – 217
Aldicarb	I	100 – 150	0.2	0.93
Amitraz	I	28	0.2	400 -800
Avermectin	I	7	0.01	10
Azinphos-methyl	I	21	2.0	9
Azoxystrobin	S	77	0.5	>5 000
Bromopropylate	I	10	3.0	>5 000
Buprofezin	I	45	0.05	2 198 – 2 355
Cadusafos	S	-	0.05	
Carberdazim	S	14	5.0	>5 000
Chinomethionat	S	14	0.5	2 500 -3 000
Chlorfenapyr	I	140	0.01	441 – 1152
Chlorpyrifos	I	60	0.3	135 – 163
Cyhexatin	I	14	2.0	540
Cypermethrin	I	28	0.2	250 – 4 150
Dicofol	I	7	5.0	587 – 595
Difenoconazole	S	-	None	
Dimethoate	I	14 – 42	2.0	290 – 325
Dithiocarbamate	I + S	14	3.0	>5 000
Endosulfan	I	10	1.0	70
Ethoprophos	I	-	0.05	62
Fenamiphos	I	150	0.05	6
Fenazaquin	I	56	0.05	134 – 138
Fenbutatin-oxide	I	7	1.0	2 631
Fenpropathrin	I	28 – 120	0.5	66.7 – 70.6
Fipronil	I	-	None	100
Formetanate	I	90	0.5	14.8 – 26.4
Fosetyl-Al	S	0 – 60	15.0	5 800
Fosthiazate	I	43	0.5	57 – 73
Guazatine	S	Post harvest	5.0	227 – 300
Imazalil	S	Post harvest	5.0	227 – 343
Imidacloprid	I	212	0.5	450
Iprodione	S	115	1.0	>2 000
Isofenphos	S	42	0.2	20
Kresoxim-methyl	S	56	None	8 500
Mercaptothion	I	7	4.0	1 375 – 2 822
Metalaxyl	S	30	1.0	633

Aalwurmdoders en mytdoders is ingesluit onder insekdoders (I).

Tabel 4 : Gewasbeskermings produkte op mango.

Chemikalie *	**Tipe**	**Wagperiode RSA (dae)**	**MRL RSA (mg/kg)**	**LD_{50} Mond (mg/kg Ligg massa)**
Bromopropylate	I	-	-	>5 000
Bromuconazole	S	0	-	365
Bupirimate	S	0	0.05	4 000
Bupirimate / Hexaconazole	S	0	0.05/0.01	4 000/2 189 – 6 071
Carbendazim / Flusilazole	S	0	-	>5 000/1 100
Copper Ammnonium Carbonate	S	14	20.0	2 055
Copper Hydroxide	S	14	20.0	890 – 1120
Copper Oxychloride	S	14	20.0	700 – 800
Cycloxydim	O	0	0.05	3 940
Deltamethrin	I	28	0.05	135 – 5 000
Diuron	O	45	0.05	3 400 – 7 500
Esfenvalerate	I	30	0.05	75 – 458
Fenthion	I	10	1.0	250
Fenvalerate	I	30	0.05	451
Fipronil	I	-	0.05	100
Fluazifop-P-butyl	O	0	0.05	3 328
Glufosinate ammonium	O	-	0.05	1 620 – 2 000
Glyphosate	O	-	0.05	4 320
Glyphosate trimesium	O	-	0.05	755
Halosulfuron	O	30	0.05	8 865
Mancozeb	S	14	3.0	>5 000
Methamidophos	I	28	1.0	20
Mineral Oil (light narrow)	I	-	-	>4 300
Paraquat	O	-	0.05	150
Phenthoate	I	60	0.2	300 – 400
Prochloraz	S	-	5.0	1 600
Prochoraz manganese chloride	S	0	5.0	1 600
Propiconazole	S	0	-	1 517
Prothiofos	I	45	0.05	1 500
Pyrifenox	S	0	0.05	2 912
Pyriproxyfen	I	60	0.02	>5 000
S-metolachlor/Terbuthylazine	O	180	0.05	2 672/2 000 – 2 160
Sulphur	S	0	50.0	Relatief nie-toksies
Tebuconazole	S	0	-	4 000
Thiabendazole	S	-	-	3 100
Triadimefon	S	0	0.05	1 000
Triadimenol	S	0	-	700
Triflummuron	I	28	0.2	>5 000
Triforine	S	0	-	>16 000

*Engelse name word internasionaal gebruik
S = Swamdoder; I = Insekdoder; O = Onkruiddoder

APPENDIX O

41	Bird migration sites	No
42	Aquifers and aquifer-recharge areas	No
43	Areas with a high natural water-table	No
44	Damaged land	Yes
45	Unstable soils	No
46	Natural resource areas (including minerals)	No
47	Sites of geological significance	No
48	Geologically and geotechnically unstable areas	No
49	Areas or sites of outstanding natural beauty	Yes
50	Scenic drives and panoramic views	No
51	Areas or sites of special scientific interest	No
52	Areas or sites of religious or spiritual significance	No
53	Areas or sites of special social, cultural or historical interest	No
54	State land	No

LIST OF ACTIVITIES

NUMBER	FEATURE	PREVALANT
POLICY AND PLANNING PROPOSALS		
1	Structure plans	Yes
2	Rezoning applications	Yes
3	Subdivisions	Yes
4	Land acquisition for National Parks, Nature Reserves, Marine Reserves, Protected natural Environments or wilderness areas	No
5	Establishment of Townships	No
6	Declaration of limited Development areas	No
7	Any Government Policy on the use of natural resources	No
PROJECT PROPOSALS		
8	Nuclear installations	No
9	The formal disposal of waste	No
10	The transportation of hazardous substances and radioactive waste	No
11	Mining, mineral extraction and mineral beneficiation	No
12	Power generation facilities with an output of 1 megawatt of more	No
13	Electrical substations and transmission lines having equipment with an operating voltage in excess of 30 000 volts rms phase-to-phase	No
14	Storage facilities for chemical products	No
15	Industrial installation for the bulk storage of fuels	No
16	Bulk distribution facilities	No
17	Scheduled Processes under Schedule 2 of the Atmospheric Pollution Prevention Act (45/1965)	No
18	Industries requiring a permit under section 12 of the Water Act (54/1956)	No
19	Manufacture of explosives	No
20	Control Measures under section 6 of the Conservation of Agricultural Resources Act (43/1983)	No
21	Battery and feedlot farming installations	No
22	Propagation of invasive alien plant and animal species	No
23	Afforestation projects	No
24	Genetic modification of organisms and release of such organisms	No
25	Major roads	No
26	Railways	No
27	Commercial aerodromes	No
28	Ports, harbours and marinas	No
29	Major pipelines	No
30	Cableways and cableway stations	No
31	Television and radio transmission masts	No