



Province of the
EASTERN CAPE
EDUCATION

Iphondo leMpuma Kapa: Isebe leMfundo
Provinsie van die Oos Kaap: Departement van Onderwys
Porafensie Ya Kapa Botjhabela: Lefapha la Thuto

NATIONAL SENIOR CERTIFICATE

KEREITI 12

LOETSE 2024

**DISAENSE TSA TEMO P2
(AGRICULTURAL SCIENCES)**

MATSHWAO: 150

NAKO: Dihora tse 2½

Pampiri ena e na le maqephe a 14.

DITAELO LE TLHAHISOLESEDING

1. Pampiri ena e na le dikarolo tse PEDI e leng KAROLO ya A le KAROLO ya B.
2. Araba dipotso TSOHLE BUKENG YA DIKARABO.
3. Qala potso E NNGWE le E NNGWE leqepheng le LETJHA.
4. Nomora dikarabo tsa hao ho ya ka tsela eo dipotso di nomorilweng ka yona pampiring ena ya dipotso.
5. O ka sebedisa khaltjhuleitha e seng porokeramebole.
6. Bontsha dikhaltjhuleishene TSOHLE ho kenyelletswa le difomula moo di sebetsang
7. Ngola ka mongolo o makgethe, o balehang.

KAROLO YA A**POTSO YA 1**

1.1 Ho fanwe ka dikgetho tse fapaneng e le dikarabo tse ka nepahalang dipotsong tse latelang. Kgetha karabo mme o ngole tlhaku feela (A–D) pela dinomoro tsa dipotso (1.1.1 ho ya ho 1.1.10) BUKENG YA DIKARABO, mohlala 1.1.11 D.

1.1.1 Free marketing tjhanele ke moo porojusara e rekisetsang moreki ntle le middle man kapa ho beha sebaka sa ho rekisetsa se tsebisahala ka ... marketing.

- A stock sales
- B internet
- C fresh produce
- D direct

1.1.2 Moreki a lepotlapotla a sa tsotelleng hore ditheko di reng.

- A Adopter
- B Traditionalist
- C Innovative
- D Early majority

1.1.3 Tse latelang ke di aspekethe tse bohlokwa tsa ho ba entrepreneur:

- (i) Identifying an opportunity
- (ii) Not determined to take business risks
- (iii) Being rewarded
- (iv) Innovation and creativity

Kgetha motswako o NEPAHETSENG:

- A (i), (ii) le (iii)
- B (i), (iii) le (iv)
- C (i), (ii) le (iv)
- D (ii), (iii) le (iv)

1.1.4 Bisenese polene e na le dikahare tse latelang:

- (i) Title page
- (ii) Contents page
- (iii) Executive summary
- (iv) Feasibility study

Kgetha motswako o NEPAHETSENG:

- A (i), (ii) le (iii)
- B (i), (iii) le (iv)
- C (i), (ii) le (iv)
- D (ii), (iii) le (iv)

- 1.1.5 Labour Legislation Act e ikemiseditse ho nyolla menyetla e lekanang le tshwaro e hlokanng leeme mosebetsing:
- A Skills Development Act
 - B Labour Relations Act
 - C Unemployment Insurance Act
 - D Employment Equity Act
- 1.1.6 Ke EFE ho tse latelang eo E SENG ikhonomiki kharektharistiki ya mobu?
- A Land can be bought and sold
 - B Land is a passive factor of production
 - C Land is destructible
 - D Land varies in production potential
- 1.1.7 Ho etsa khaphithale ka ho adima di instetjhusheneng tsa ditjhelete ho bitswa ...
- A capital.
 - B a grant.
 - C credit.
 - D debt.
- 1.1.8 ... HA SE fose ya kante e ka amang kgwebo.
- A Politics
 - B Competition
 - C Technology
 - D Economics
- 1.1.9 Mofuta wa selection o etsahalang ha poresha ya kgetho e ama katleho ya reproductive ya ntho e le nngwe:
- A Mass selection
 - B Artificial selection
 - C Pedigree selection
 - D Natural section
- 1.1.10 Tse latelang ke mefuta ya chromosomal mutation ntle le ...
- A inversion.
 - B translocation.
 - C duplication.
 - D insertion.
- (10 x 2) (20)

- 1.2 Kgetha term/phrase ho tswa ho KHOLOMO YA B le tsamaelanang le tlhaloso e ho KHOLOMO YA A. Ngola tlhaku fela (A–H) pela dinomoro tsa dipotso (1.2.1 ho ya ho 1.2.5) BUKENG YA DIKARABO, mohlala 1.2.6 J.

KHOLMO YA A		KHOLOMO YA B	
1.2.1	Impruva boitshepo ba bareki ho reka dihlaiswa tse environmentally friendly	A	Cartel
1.2.2	Kopano ya disapolaya ka sepheo sa ho beha ditheko tse hodimo le ho fokotsa tlhodisano	B	Monopoly
1.2.3	Bophelo ba mobu ha bo na tekanyetso	C	Risk sharing
1.2.4	Tsela ya ho fokotsa riski ka ho sebetsa le batho ba bang	D	Atavism
1.2.5	Homozygous recessive gene e hlahang hape lesumatha phophuleisheneng	E	Eco-labelling
		F	Diversification
		G	Durable
		H	Prepotency

(5 x 2) (10)

- 1.3 Fana ka lentswe/themo e le NNGWE bakeng sa tlhaloso ka nngwe ho tse latelang. Ngola lentswe feela pela dinomoro tsa potso (1.3.1 ho ya ho 1.3.5) BUKENG YA DIKARABO.

- 1.3.1 Makete o nang le barekisi ba bangata le moreki a le mong feela wa dihlaiswa
- 1.3.2 Bonono ba ho etsa batho ba bang ba o etsetse mosebetsi ka kgokahano
- 1.3.3 Porophoshene ya varieyishene phophuleisheng e bakwang ke genetic influence
- 1.3.4 Diphapano pakeng tsa di indivijuale tsa species se le seng
- 1.3.5 Bana ba Heterozygous ba bontsha finothaepe e leng motswako wa batswadi ba homozygous

(5 x 2) (10)

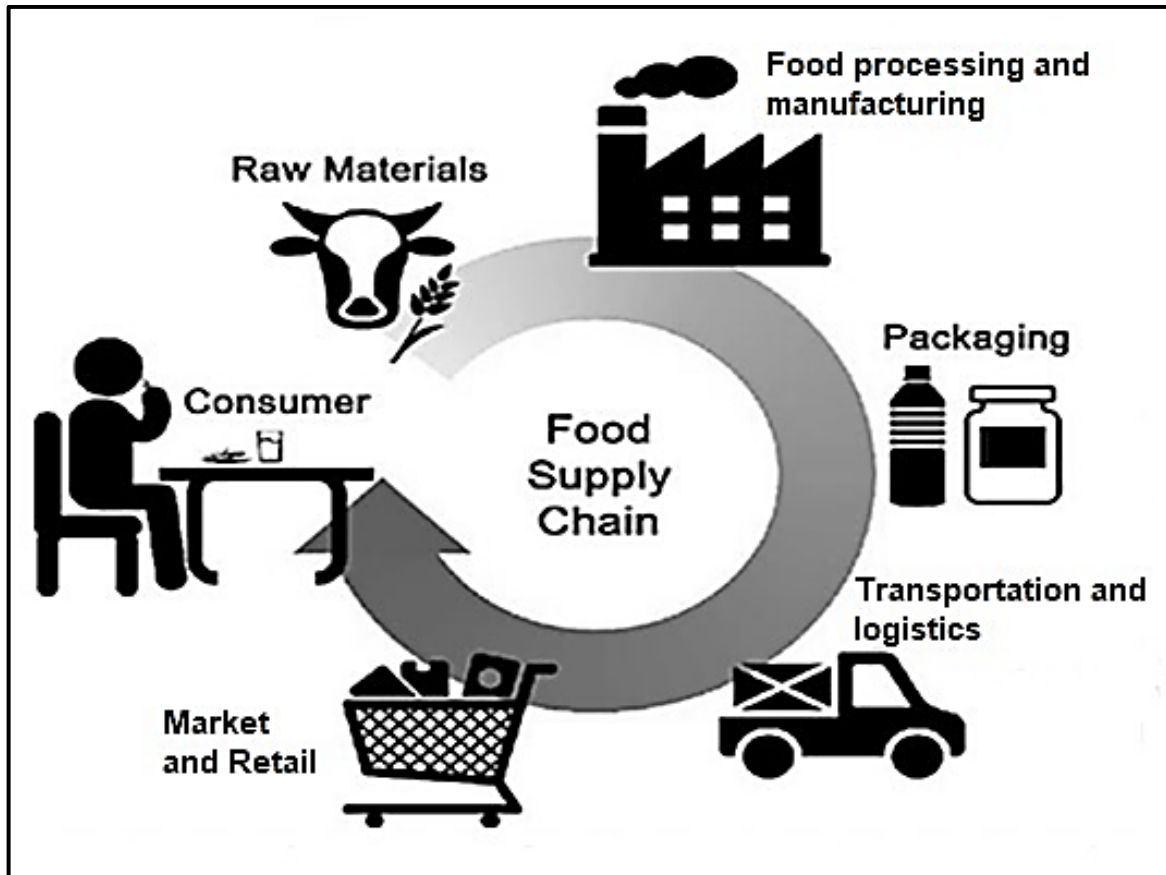
- 1.4 Fetola MANTSWE A SEHELLETSWENG MELA polelong ka nngwe ho tse latelang ho di NNETEFATSA. Ngola karabo feela pela dinomoro tsa dipotso (1.4.1 ho ya ho 1.4.5) BUKENG YA DIKARABO.
- 1.4.1 Management Ke ketso ya ho qala, pokello ya disebediswa ho nka monyetla wa kgwebo le ho atolla kgwebo.
- 1.4.2 Working capital ke di-asete tsa medium term tse sebediswang hofeta dilemo tse pedi ho ya ho tse leshome.
- 1.4.3 Dihybrid cross ke genetic cross e pakeng tsa batswadi ba nang le di-allele tse fapaneng jining e itseng.
- 1.4.4 Duplication mutation e etsahala ha jenethiki matheriale e tloswa koromosomung e ngwe ho ya ho engwe.
- 1.4.5 Gene silencing ke porosese ya ho kenya le ho eketsa jini ho DNA ya hoste o sebedisa di-enzaeme. (5 x 1) (5)

MATSHWAO KAOFELA A KAROLO YA A: 45

KAROLO YA B**POTSO YA 2: TSAMAIISO YA TEMO LE MAKHETHING**

Qala potso ena leqepheng le LETJHA.

- 2.1 Ilasetereishene e ka tlase e bontsha mosebetsi wa makething le tsela e nkuwang ke dihlaiswa tsa temo ho tloha tlhaisong ho ya ho moreki.



- 2.1.1 Hlwaya mosebetsi wa makething ho ilasetereishene e ka hodimo o tsamaellanang le ditlhaloso tse latelang. (1)
- (a) Ho kenya dihlaiswa tsa temo ka hara dikhontheinara (1)
- (b) Ho etsa dihlaiswa di fumanehe o sebedisa tsela tse fapaneng (1)
- 2.1.2 Fana ka diadvantage tse PEDI tsa ho porosesa dihlaiswa tsa temo ho bareki. (2)
- 2.1.3 Bolela hore hobaneng ho kereita dihlaiswa tsa temo ho le bohlokwa. (1)
- 2.1.4 Hlalosa environmental concern tse PEDI tseo o ka di hlokomela ha o dizaena phakhejing matheriyale ya dihlaiswa tsa temo. (2)

2.2 Theko ya ho fetola disapolaya le botshepehi ho brorende e entse bareki ba bangata hore di tswelopele ba reke sehlaiswa se tswanang le ha theko e se e hodimo.

2.2.1 Hlwaya khonsepte ya ikhonomi e hlalowsang ke moreki seratswaneng se kahodimo. (1)

2.2.2 Bolela difekthara tse ding tse PEDI tse susumetsang responsiveness ya moreki ho fetoheng ha ditheko, ntle le tse boletsweng seratswaneng se kahodimo. (2)

2.2.3 Sebedisa data ho tswa tafoleng e ka tlase ho teroya line graph e bontshang kamano dipakeng tsa theko le bongata ba nama e sapolailweng. (6)

PORAESE (R)	QUANTITY OF MEAT DEMANDED (KG)	QUANTITY OF MEAT SUPPLIED (KG)
R40	30	5
R60	25	10
R80	20	15
R100	15	20
R120	10	25

2.2.4 Fumana kamano dipakeng tsa theko le bongana ba nama e sapolailweng. (2)

2.2.5 Hlalosa hore maemo a tikoloho a ka ama sapolae ha bohloko jwang. (2)

2.3 Setshwantsho se ka tlase se bontsha ka moo mass marketing e fihlellang odiense e kgolo ka teng.



2.3.1 Fana ka ditsela tse PEDI tsa ho bapatsa tse ka sebediswang ho mass marketing to fihlella bareki ba ngata. (2)

2.3.2 Bolela marketing approach moo rapolasi a kgethang dihlopha tsa makete tse pedi kapa tse ngata tse fapaneng ho etsa marketing mix e itseng. (1)

2.3.3 Bolela feketshara e le NGWE o ka e hlokomelang ha o beha theko ya goods le services. (1)

Difupergeng tsa pampiri ena ha di se sebeditswe ntle le tumello.

Phetla

- 2.4 Setshwantsho se ka tlase se bontsha marketing channel moo rapolasi a rekisang dikhukhamba hantle moo di hlaiswang.



- 2.4.1 Bolela marketing channel e hlaisitsweng ka hodimo. (1)
- 2.4.2 Fana ka di disadvantage tse PEDI tsa marketing channel e kahodimo ho rapolasi. (2)
- 2.4.3 Fana ka tsela tse PEDI tsa ho ntlafatsa tsela ya agribusiness chain. (2)
- 2.4.4 Hlalosa ka bokgutshwane hore porinsipole, open membership e katlase e ka dumella ho thehwa ha di cooperatives tsa temo jwang. (2)
- 2.5 Bisinesse polene ke tokomane ya mantlha eo rapolasi a lokelang ho e etsa ka hlokolosi ho fumana tjhelete ya ho hodisa kgwebo.
- 2.5.1 Fana ka mabaka a MABEDI a ho teroya bisinesse polene. (2)
- 2.5.2 Ngola potso e ka sebediswang ho hlwela fisibilithi ya bisinesse iyediye. (1)
- 2.5.3 Hlalosa hore enthaprinyeshipi e bhlokwa jwang ikhonoming ya Aforika Borwa. (1)

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POTSO YA 3: PRODUCTION FACTORS

Qala potso ena leqepheng le LETJHA.

- 3.1 Porodakthivithi ya temo ka dilemo tsa 1950 e ile ya ntlafatswa ka ho eketsa sebaka se lengwang. Le ha hole jwalo, maqalong a 2000, phophuleishene e ile ya eketseha kapele mme ebeniseishene ya fokotsa sebaka se ka lemehang, ka hoo borapolasi ba hloka ho leka ditsela tse ntjha ho nyolla porodakthivithi ya mobu.

- 3.1.1 Hlwaya ikhonomiki kharektharistiki ya mobu e bonahaditsweng ho seratswana se ka hodimo. (1)
- 3.1.2 Bontsha ditsela tse PEDI tse sayenthifiki tseo borapolasi ba ka di sebedisang ho nyolla kotulo ya dijalo tsa bona mobung wa temo. (2)
- 3.1.3 Hlalosa hore hobaneng mobu wa temo o na le porodakshene khaphasithi e lekanyeditsweng. (2)
- 3.1.4 Bolela di ekhonomiki fankshene tse PEDI tsa mobu. (2)

- 3.2 Setshwantsho se ka tlase se bontsha basebetsi ba polasi ba lema rayese ka dinako tsa dipula.



- 3.2.1 Fumana setshwantsong se ka hodimo, mofuta wa basebetsi o itshetlehile ho mesebetsi eo ba e etsang. (1)
- 3.2.2 Fana ka amabaka a MABEDI a susumelletsang ho tsamaeng ha basebetsi bao o ba hlwaileng ho POTSO ya 3.2.1 ho ya di indastering tse ding. (2)
- 3.2.3 Ngola lebitso la mofuta wa basebetsi ba nang le bokgoni bo hlokahalang ho etsa mesebetsi e latelang:
- (a) Spraying using a knapsack sprayer (1)
- (b) Interpreting farm records (1)

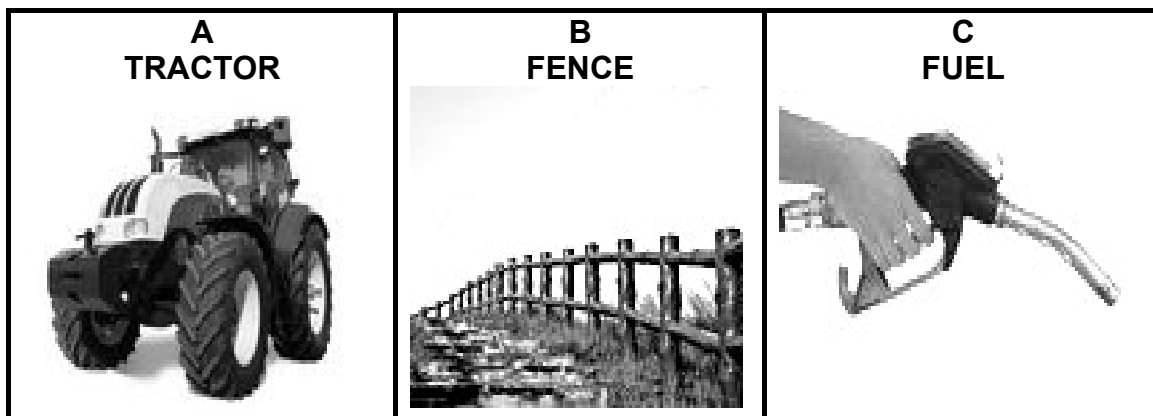
Difuperweng tsa pampiri ena ha di se sebeditswe ntle le tumello.

Phetla

3.2.4 Fana ka advantage ele NGWE ya Mechanisation polasing. (1)

3.2.5 Bolela di aspekte tse PEDI tsa manejeменте tseo rapolasi a ka di sebedisang ho netefatsa hore basebetsi ba qeta mesebetsi ya bona ka nako. (2)

3.3 Setshwantsho se ka tlase se tshwauwe **A–C**, se bontsha di itheme tsa capithale polasing.



3.3.1 Hlopisa dintho tse ka hodimo ho ya ka mofuta wa khaphithale oo e nngwe le e nngwe e e emetseng. Ngola feela mofuta wa khaphithale pela tlhaku **A**, **B** le **C**. (3)

3.3.2 Hlwaya mofuta wa tsa ditjhelete o hlokehang ho reka di itheme tsa khaphithale **A** le **C**. (2)

3.3.3 Fumana bothata ba khaphithale bo maloka le khaphithale ya **A** ha nako e ntse e tsamaya. (1)

3.4 Tafole e ka tlase e botsha bajete ya polasi kaofela e etseditsweng polasi.

WHOLE FARM BUDGET FOR 2023 FINANCIAL YEAR			
GROSS MARGIN INCOME		OVERHEAD EXPENDITURE	
ENTERPRISE	INCOME	COSTS	TOTAL
Livestock sales	R34 500,00	General cost	R4 500,00
Maize sale	R20 000,00		
TOTAL	R54 500,00		
NET FARM RETURNS	...		

3.4.1 Bolela ditjeho tse PEDI tse fumanehang polasing e ka hodimo. (2)

3.4.2 Sebedisa fomula mme o khaletjhuleithe net farm returns tsa polasi ena o sebedisa data e tafoleng e ka hodimo. Botsha dikhaletjhuleishene KAOFELA. (3)

3.4.3 Fumana hore polasi ena e viable kapa tjhe. Tshehetsa karabo ya hao. (2)

3.4.4 Fana ka phapano dipakeng tsa *cash flow statement* le *income statement*. (2)

Difuperweng tsa pampiri ena ha di se sebeditswe ntle le tumello.

Phetla

3.5 Strategic management skills di dumella mookamedi wa polasi ho hlwaya di diphepetso tsa kgwebo mme a etse dipolane tsa thibelo ho lwantshana le maemo a mabe mme a fokotse menyetla ya hore a etsahale.

3.5.1 Bolela hotswa ho seratswana se ka hodimo hore hobaneng ho le bohlokwa hore polasi e be le strategic management skills. (1)

3.5.2 Etsa lethathamo la dicomponente tse PEDI tsa di strategic management e atlehileng ya farming enterprise. (2)

3.5.3 Fana ka di fose tse PEDI tsa ikhonomi tse ka amang farming enterprise. (2)

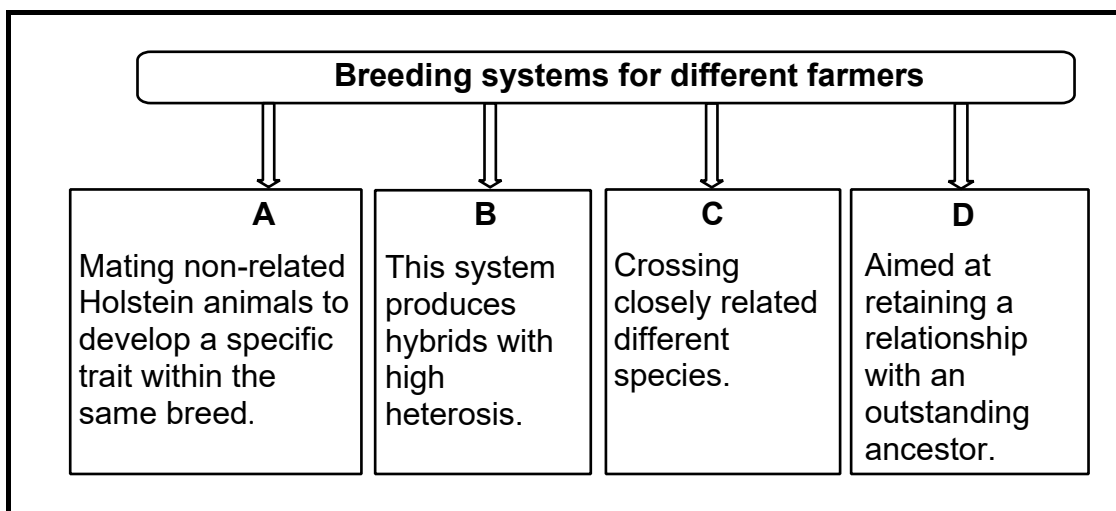
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POTSO YA 4: BASIC AGRICULTURAL GENETICS

Qala potso ena leqepheng le LETJHA.

- 4.1 Dikgomong tsa shorthorn, lekoko le mmala o motsho (**B**) le lekoko le mmala o mosweu (**W**) di hlaisitswe bobedi di le heterozygous ka bonngwe. Di hybrid tsa shorthorn tse pedi tsa batswadi di korusuwe.
- 4.1.1 Teroya punnet square ho fumana genotype ya cross ena e ka hodimo. (4)
- 4.1.2 Bolela resheo e phynotype ya cross e ka hodimo. (1)
- 4.1.3 Khaletjhuleitha phesente ya bana ba F_1 bao e leng di hybrid. (2)
- 4.1.4 Hlwaya mofuta wa Dominance ho tswa ho cross e ka hodimo. Tshehetsa karabo ya hao. (2)
- 4.1.5 Ngola Mendel's Laws of Inheritance e sebeditsweng di setatementeng tse latelang.
- (a) Ho behwa ha di-allele tsa ditereiti tse fapaneng ho di kamete ha ho amane. (1)
- (b) Kamete e na le allele e le ngwe feela ya batswadi. (1)
- 4.2 Disomatic cell tsa dikgomo di diploid mme di na le dipara tse 29 tsa di autosome hong le para e lengwe ya gonosome.
- 4.2.1 Fumana hore dikoromosomu tsa poho di tla ba le dikamete dife ka mora meiotic division. (2)
- 4.2.2 Fana ka phapano dipakeng tsa *autosomes* and *gonosomes*. (2)
- 4.2.3 Bolela quantitative tereiti dikgomong tsa lebese. (1)
- 4.3 Dibridara tsa diphoofolo di sheba ditereiti tse ka bang le molemo wa ikhonomi ebe di brida di kgetha ditereiti tsena.
- 4.3.1 Fana ka ditsela tse PEDI tsa selection tse sebediswang ke di bridara tsa diphoofolo. (2)
- 4.3.2 Hlwaya ditereiti tse PEDI tse ka bang le molemo wa ikhonomi tseo di deyiri bridara di di hlokang ho kgetha. (2)
- 4.3.3 Hlalosa hore meiosis e ka baka varieyishene jwang. (2)

4.4



4.4.1 Hlwaya di breeding systems **A–D** tse sebedisitsweng ke borapolasi ba ka hodimo. (4)

4.4.2 Fana ka di-advantage tse PEDI tsa breeding system ya **A**. (2)

4.4.3 Bolela di-disadvantage tse PEDI tsa inbreeding system. (2)

4.5

Di-gene di ka teranseferelwa ho di-indivjuale sele ka porosese e bitswang micro-projectile bombardment. Ke thekeniki e kenyang ho acceleratha di phathikle ho velosithi e kgonang ho kena ka hara sele wole ya semela ka firing mechanism.

4.5.1 Hlwaya equipment e sebedisitsweng ho gene firing. (1)

4.5.2 Bolela okanesemo e nang le gene tse fetotsweng. (1)

4.5.3 Hlwaya thekeniki e sebedisang motlakase ho eketsa permeability ya plasmalemma ho gene ya thahasello. (1)

4.5.4 Hlalosa hore genetically modified crops di ka thusa bo rapolasi jwang ho fokotsa ditheko tsa tlhaiso. (2)

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MATSHWAO KAOFELA A KAROLO YA B: 105
MATSHWAO KAOFELA: 150