

DAWLADDA DEGAANKA SOOMAALIDA ITOOBIYA



FARSAMOOYINKA SOOSAARIDDA DALAGYDA KHUDRADDA

BUUGGA LOOGU TALOGALAY IN LAGU TABABARO BEERALAYDA



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Hordhac

Dalkani Itoobiya iyo caalamka intiisa kaleba, waxa jirta aqoon aad u ballaadhan oo ku kaydsan khaanadaha xafiisyada culumada sayniska, hay'adaha, maktabadaha iyo wasaaradaha kala duwanba. Haddii aan soo qaadano dhinaca xoolaha, dalagyada iyo kheyraadka dabiiciga ah, oo ah masuuliyadda culus ee la saaray xafiiska Horumarinta Xoolaha, Dalagyada iyo Kheyraadka Dabiiciga ah, wali meeshii la hiigsanaayey lama gaadhin.

Dawaladdu waxay samaysay dadaalo aad u badan, kharasha aad u badan ayaana loo horuyay sidii farsamooyinka casriga ah ee ku saabsan xoolaha, dalagyada iyo kheyraadka dabiicigaba loo gaadhsiin lahaa xoolo dhaqatada, beeralayda iyo kuwa kale ee u baahanba. Si arimahani loo hirgaliyo waxa la tababaray khirfadlayaal kala duwan oo qaabilsan waxsoosaarka xoolaha, dalagyada, calafka xoolaha, dhirta iyo keymaha, ilaalinta carrada iyo biyaha, iyo xirfadlayaasha fidinta aqoonta beeraha. Waxa kale oo qorshaynsan in la dhiso xarumo lagu tababaro beeralayda iyo xoolodhaqatada.

Hase ahaatee, aqoontaa aadka u farabadan ee jirta waa mid ku qoran afafka qalaad, wax ilaa hadda lagu turjumay afka Soomali, si ay uga faa'iidaystaan dadweynha degaankani ku nooli weli ma jirto. Isku dayo farabadan ayaa la sameyey, dhamaantoodna ma suurta galin.

Waxase farxad ah, inay hadda suuragal noqotay in la helo aqoon yahanno degaanka u dhashay oo aqoon aad u sarysana u leh hawlahani. Aqoonyahanadaasi waxa ka mid ah Dr. Cabdulqaadir Imaan, oo ah aqoonyahanka diyaariyay buugani cinwaakiisu yahay " Farsamooyinka soo saaridda dalagyada khudradda". Fursadda kale ee iyana la helay waa mashruuca kobcinta awoodda dadka ree miyiga ah (Rural capacity building project) oo fangareeyey hawshani.

Buugani oo loogu talo galay beeralayda, fidiyayaasha cilmiga xoolaha iyo beeraha iwm, waxa uu si ballaadhan uga hadlayaa faa'iidooyinka khudradda, heerka waxsoosaarkooda, xulashada goobta abaqaalka, naqshadaynta iyo diyaarinta goobta abaqaalka, maaraynta khudraddaha kala duwan: Tamaandhada/yaanyada, basasho, xabxabka/qaraha, dubada, kaarootka, kaabajka, baytaraafka, baradhada, barbarooniga, qajida, toonta, basal baarta, baamiyaha iyo midaadiska

Buuggani oo maskax iyo waqti badaniba ku baxeen, waxaan filaynaa in aad looga faa'iidaystaan doono. Waxa dhici karta, inuu waxoogaa qaladaal xagga daabacaada ah oo yari dhaco, tanina macnaha iyo ujeedada buugga waxba uma dhimayso. Sidoo kale buuggani maadaama uu yahay daabacaadii koowaad ee Af-Soomali ku soo baxda, qoraha ayaa ah ka lala xidhiidhayo, si uu mustaqabalka u saxo wixii qalalaa yar-yar ah ee jira.

C/ Rashiid Shariif Muxamed

K/S Madaxa Xafiiska Horumarinta Xoolaha, Dalagga iyo Kheyraada Dabiiciga ah

Dawladda Degaanka Soomaalida

Itoobiya

Mahadnaq

Waxaa mahad iska leh Allaha awoodda weyn leh, kaasi oo suuragal iiga dhigay inaan hirgaliyo fikir maxkaxdayda ka guuxaysay sandihii 2003-2006. Sanadahaasi oo aan waxbarasho u joogay wadanka Maleesiya, waxa aan arkay buugaag aad u farabadn oo Af-Malaay (waa afka looga hadlo wadankaasi) ku qoran. Markaas baa waxa isgu soo dhacday fikrad ah in xooladaqatada iyo beeralyda Af-Soomaaliga ku hadla ee ku nool dalka Itoobiya , gaar haan inta akhrin karta Af-Soomaaliga ay u baahanyihiin buugaag luuqadadaasi ku qoran.

Isla sanadkani 2008, ayaa xafiiska Horumarinta Xoolaha iyo Beeruhu ii soo bandhigay inaan buugani u diyaariyo, waan ka aqbalay. Mahad ballaadhan ayaanan u soo jeedinayaa xafiiskani. Waxa muhiima inaan halkani aad ugu xuso mashruuca Kabcinta Awoodda Miyiga (Rural Capacity Building) oo bixiyay kharashka diyaarinta iyo turjumidda buugan.

Waxa kale oo aan la ilaawi karin kaalintii ay hawshani ka qaateen saaxiibo kala duwan, ha i siiyaan sawiro, talooyin ama buugaag aan wax ka qoraba. Raggaas waxa ka mid ah Cali Maxamuud Geeddi, Mahad Da'ud, C/Rashiid Shariif Muxamed, Maxamed Shariif Cali, iyo C/xakiim Maxmed yuusuf. Waxaan aad ugu mahadnaqayaa xaaskayga Suleekha Aadam oo kombuytarka iigu garaacday buugan. Waxa kale oo xusid mudan C/qaadir Cusmaan oo iskaanin iigu sameeyey sawidda qaarkood.

Hawshani maadaama ay mid cusub tahay, islamarkaana aanay jirin buugaag cilmigani ku saabsan oo Af-Soomali hore loogu qoray, waxa dhici kara in meelaha qaar aad loo fahmin, tanina waa mid mustaqbalka la sixi doono

Cabdulqaadir Iimaan (PhD)

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1. Faa'iidooyinka, heerka waxsoosaarkooda, doorashada beerta abaqaalka ee dalagyada khudraddaha

1.1. Faa'iidooyinka khudraddaha iyo heerkooda waxsoosaar

Waxsoosaarka khudraddu waxay muhiim u yihiin aadanaha, waxsoosaarkooduna waxa uu u kala baxaa mid kooban oo ku eg sagarooyinka amaba guriga agtiisa wax laga beero ilaa beeraha waawayn ee ganacsi ahaan loo beerto.

1.1.1 Faa'iidooyinka laga helo beerashada khudraddaha

Khudradda waa qayb muhiim ah oo ka mid ah cuntada dadku cuno. Faa'iidooyinkooduna waxa ka mid ah:

1. Waxa khudradda laga helaa fiitamiino kala duwan;
2. Waxa kale oo aan ka hellaa macdano kala duwan, waxa kale oo ay socodsiiyaan caloosha iyagoo inaga ilaaliya calool istaagga;
3. Waaxa ay wanaajaan dhadhanka cuntada, ha noqoto marka suugada lagu darsado, saladh laga samaysto amaba kaligood loo cuno;
4. Waxa dakhli iyo dhaqaale fiican ka hela beeralayda beerata. Waxsoosaarkooduna aad buu uga sareeyaa ka firilayda;
5. Dad badan ayaa shaqo ka hela, kuwaasi oo ah beeralayda iyo dadka ka ganacsada.

Khudraduhu waxay hodan ku yihiin fiitamiinada iyo macdanaha jidhku u baahanyahay sida ku cad shaxda hoose (Shaxda 1).

Shaxda 1: Waxyaalaha ku jira khudradaha kala duwan

| Khudradda | Hadhaa (%) | Maaratka engegen (g) | Tamar Kcal | Borotiin | Fiber (g) | Ca (mg) | Xadiid (mg) | Fiitamin A (IU) | Fiitamin C |
|------------|------------|----------------------|------------|----------|-----------|---------|-------------|-----------------|------------|
| Tamaandho | 6 | 6.2 | 20 | 1.2 | 0.7 | 7 | 0.6 | 900 | 23 |
| Barbarooni | 13 | 34.6 | 116 | 6.3 | 15.0 | 8.6 | 3.6 | 20,000 | 96 |
| Baamiye | 10 | 10.4 | 31 | 1.8 | 0.9 | 90 | 1.0 | 490 | 18 |
| Dube | 17 | 8.1 | 27 | 0.7 | 0.8 | 24 | 0.7 | 3,400 | 14 |
| Kaaroot | 10 | 10 | 33 | 1.0 | 0.8 | 40 | 0.7 | 12,000 | 6 |
| Xabxab | 37 | 6.8 | 21 | 0.6 | 0.2 | 8.0 | 0.2 | 30 | 6 |
| Midaadis | - | 30 | 114 | 1.5 | 1.0 | 25 | 1.0 | 0.06 | 30 |
| Bsal | 6 | 11.4 | 38 | 1.6 | 0.7 | 30 | 1.0 | 0.0 | 9 |
| Kaabaj | 15 | 7.0 | 22 | 1.6 | 0.8 | 55 | 0.8 | 30 | 46 |

1.1.2 Heerka waxsoosaarka khudraddaha ee waqtiga xaadirka ah

Nuucyo kala gadisan oo khudrad ah baa laga beeraa degaanada kala duwan ee dalka, badanaana waxa beera beeralayda yar-yar, iyagoo u beeranaya inay dhaqaale ama cunto ka dhigraanka. Sidoo kale dad badan oo ganacsato ah ayaa iyaguna maalgashada khudradda, kuwasina way beertaan, dhoofiyaan amaba warshadayeeyaan. Khudradaha cimilda kulul u baahan sida tamaandhada, basasha, barbarooniga, waxa aad looga beeraa dhulka joogiisu hooseeyo sida agagaarka wabiga shabeelle, waana la waraabiyaa. Dhulka joogiisu koreeyo sida Jigjiga oo kale, waxa laga beeraa khudradaha qabawga u baahan sida kaabajka, toonta, kaarootka iyo baradhada.

Guud ahaan, dalkani Itoobiya khudradda inteeda badan waxa laga beeraa dhulka joogiisu hooseeyo ee ku yaal badhtamaha a iyo bariga wadanaka, dhulkaasi oo cimiladiisa, carradiisa iyo helitaanka waraabkuba ay ka dhigeen dhul ku haboon beerashada dalagyada khudradda.

Dalagyada khudraddu waa cuntooyinka ugu muhiimsan ee laga helo fiitamiinda iyo macdanaha kala duwanba, halka qaarkoodna ay leeyihiin borotiin badan (Shaxda1). Sidaas darteedna waxay lagama maarmaan u yihiin dalalaka Itoobiya ka mid tahay, maadaama ay nafaqo darro saamaysay dad badan oo ka mid ah bulshada dalka ku dhaqan. Sababtoo ah khudraddu waxay xal u tahay cidhibtirka nafaqadarrda ka dhacda meelo badan oo dalka ka mid ah ah xilliyada qaarkood.

Markaan eegno xaddiga waxsoosarka dalagyada khudradda ee dalkani Itoobiya, ma hayno xog aad loogu kalsoonaan karo. Hase ahaatee, markaan eegno warbixinaha ay qortay wakaalada tirakoobka ee dalkani Itoobiya (2002), baaxadda dhulka laga beero dalagyada khudradda waxa lagu qiyaasay 185,614 hikaar, halka xaddiga waxsoosaarkuna yahay 14.2 milyan tan. Xaddiga khudradda ee halkii hikaarba laga goostaa dalkani Itoobiya aad buu u yaryahay. Tusaale ahaa, xaddiga waxsoosaarka ee basasha, tamaandhada iyo barbaroonigu waa 90, 70 and 5 kiintaal/hiktaarkiiba, siday u kala horeeyaan, laakiin xaddiga la gaadhsiiin karo waxsoosaarku waa 400, 350 and 25 kiintaal/hiktaarkiiba. Xaddiga waxsoosaarka iyo baaxadda dhulka khudradda laga beero degaanka Soomaalida Itoobiya waa sida ku cad shaxda 2.

Shaxda 2: Xaddiga waxsoosaarka khudradda ee Degaanka Soomaalida Itoobiya

| Dallga khudradda | Baaxadda dhulka laga beero (ha) | Xaddiga waxsoosaarka hiksaarkiiba (Kiintaal) | Xaddiga waxsoosaarka guud ee sanadkiiba (kiintaan) |
|---------------------------------|---------------------------------|--|--|
| Midaadis | 126 | 150 | 18900 |
| Baradho | 105 | 120 | 12600 |
| Basal | 150 | 100 | 15000 |
| Tamaandho | 120 | 90 | 10800 |
| Qaji | 80 | 10 | 800 |
| Kaabaj | 45 | 250 | 11250 |
| Baytaraaf | 32 | 180 | 5760 |
| Kaarood | 20 | 160 | 3200 |
| Kuwa kale ee caleentoda la cuno | 65 | - | 65 |

1.2 Xulashada goobta abqaalka iyo diyaarinta goobta abqaalka

1.2.1. Cimilada loo baahanyahay

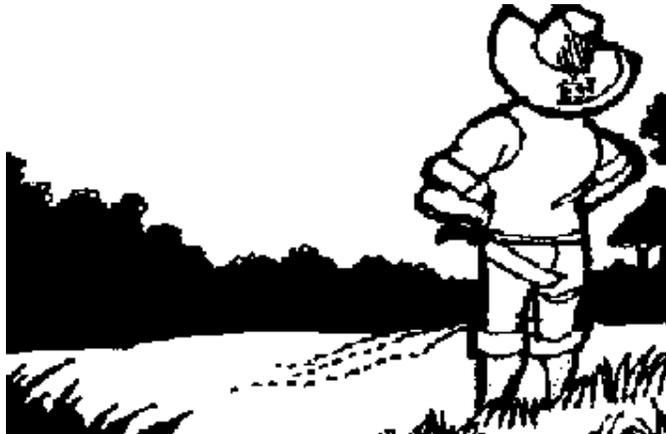
Khudradaha intooda badani waxay u baahanyihiin if qoraxeed ku filan, roob fiican, dabayl yar, isla markaana waa inaanay goobtu lahayn qabaw aama kulayl aad u daran. Arimahani in tixgalin badan la siiyaa waa lagama maarmaan, haddii aan u baahanahay inaan hello waxsoosaar badan oo tayo wanaagsan leh.

1.2.2. Doorashada goobta laga beerayo khudrada

Haddii la rabo in la helo waxsoosaar wanaagsan oo ah dalagyada khudradda, waa in dhulku leeyahay biyo shub fiican si xididadu si wanaagsan dhulka u qabsadaan, ilays qoraxeed badanna waa in la helo, beertu waa inay ka fogaato geedaha waawaayn iyo dhismayaasha dhaadheerba. Arimahani haddii la helo waxa kordhaya waxsoosaarka dalagyada khudradda iyo tayadoodaba. Beertu waa inay noqoto mid si fiican carradeeda la iskugu simay, islamarkaan aanan lahayn harama, cudurrad carrada ku

dhasha. Marka la xulanayo beerta la rabo in khudrad laga beero waa in arimaha hoose aad loo tixgaliyo:

- Beertu waa inay ku taal meel (Jaantus 1):
 - ✓ Biyaha u dhaw (Tani waa muhiim xilliga oomanaha ah);
 - ✓ Dhulku waa inuu biyo shub fiican leeyahay (haddii uu dhulku yahay mid aad isku siman, beerta ka dhex qod moosas ay biyaha saa'idka ahi ka baxaan);
 - ✓ Dhulka waa in carradiisu aad u nafaqaysantahay (khudraddu si ay si fiican ugu baxdo waa inay carradu leedahay nafaqo badan);
 - ✓ Dhulku waa inuu noqda mid hela ilays qoaraxeed badan (dhirtu si ay cuntadeeda u samaysato waxay u baahantahay ilayska qoraxda),
 - ✓ Meeshu waa inay tahay meel hawadu si fiican u socoto;



Jaantus 1 Beertu waa inay ku taallo meel aad ugu haboon khudradda

- Waxa kale oo aad tixgalisaa helitaanka dhulka: Iyadoo ay ku xidhantahay qiyaasta khudradda ee la rabo in la soo saaro, xulo dhul ku filaan karra inuu soo saaro xaddiga khudradda ee aad rabto inaad goosato. Tusaale ahaan dhulka loo baahanyahay inuu khudrad daray ah siiyo maalinkasta qoys dhan 6 ruux waa 96-100 mitir laba jibaaran, dhulkaasi oo ah 6 x 16 mitir .

1.2.3 Xulashada midhaha abuurka iyo waxyaalaha kale ee beeritaanka loo isticmaalo

Sida caadiga ah, xulashada dalagga la rabo in la beero waxa ay ku xidhantahay:

- ✓ Ku haboonaanta dhulku ku haboonyahay beeridda dalagaas- taas oo ah carrada nuuceeda, xaaldda roobka, helitaanka biyo waraab iwm;
- ✓ Helitaanka midhaha abuurka iyo qaybaha khudradda ee beeritaanka loo isticmaalo;
- ✓ Suuqa ay leeyihiin dalagyada kala duwani;
- ✓ Nuuca cuntada ee degaanka laga isticmaalo.

Waxaa beeraleyda lagula talinyaa inay doortan dalag khudradeed waxsoosaarkiisu badanyahay isla markaana degaanka si fiican ula qabsan kara suuqna leh. Nuuca khudradda ee la xulanayaa waa inuu noqdo mid u adkaysta cudurada iyo cayayaanada dalagga waxyeela.

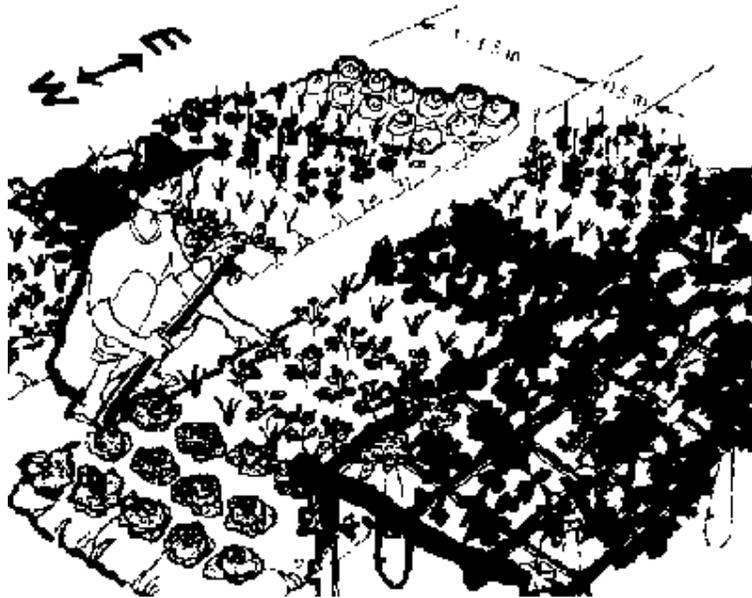
1.3 Naqshadaynta, qorhsaynta iyo diyaarinta goobta abaqalka khudradda

Goobta abaqalku waa meesha geedka aadka u yare e khudradda lagu xanaaneeyo ilaa u ka gaadho heer lagu beeri karo beerta caadiga ah ee waxsoosaarka loogu talo galay. Sidaas darteed khudradda maadaama la cunaayo amaba la suuq gaynaayo waa in si fiican loogu naqshadeeyo isla markaana loo qorsheeyo goobta abaqalka.

1.3.1 Naqshadaynta beerta iyo habaynteeda

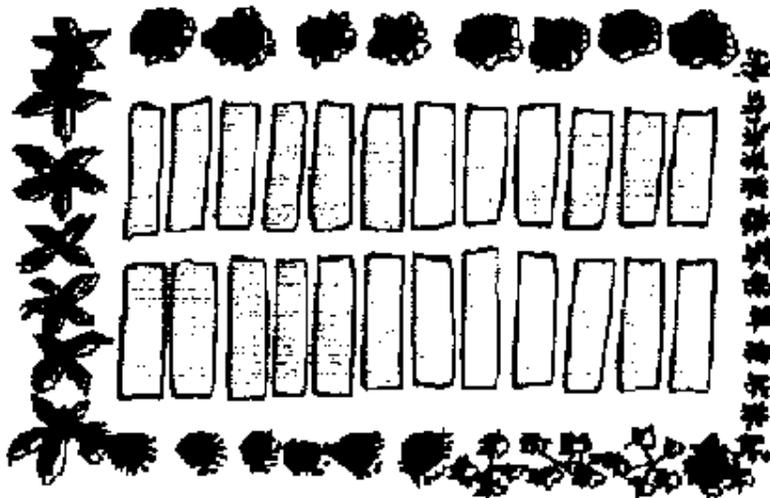
Naqshadaynta beerta iyo habaynteeduba waxay ku xidhanatahay nuucyada dalagyada ee laga beerayo, dhulka baaxadiisa iyo adeegyada beerta jira. Sidaas darteed marka aan rabno inaan abaqalka u diyaarino dhul waa inaan tixgalin siinno arimaha hoos ku xusan:

- Xariijimaha dalagga lagu beerayo waa inay u jeedaan bari-galbeed si looga hortago in dalagga is hadheeyo (Jaantus 2).



Jaantus 2 : Jihada loo jeedinayo xariijimaha wax lagu beero (Row orientation in the nursery)

- Beerta abaqaalka waa in loo qaybiyo qaybo midiiba ballaceedu yahay 1.5 mitir, isla markaana labadii qaybood ee isku xigaba loo dhaxaysiiyo ilaa 0.5 mitir oo la maro si aanan loogu tuman goobta abaqaalka laga beeray amaba beerta waxsoosaarka (jaantus 3).



Jaantus 3.Habaynta goobta abaqaalka

- Qayb kasta oo beerta abaqaalka ka mid ahba waa in si fiican wax looga beero. Isla markaana halkii qayba waa in lagu beero dalag gaar ah. Dalagayada halkii qayba lagu beeri karaa waa inay noqdaan kuwa caleentooda la cuno, kuwa xididkooda la cuno, digiraha iyo kuwa midha khudradeedkooda la cuno.
- Khudrada waa in lagu dhex beero dhirta carafta leh ee xawaash ahaan loo isticmaalo si ay u eryaan cayayaanada (waxa ka mid ah kamsarada, toonta iwm).
- Goobta abaqaalka waa in lagu xeero dhir ama wax kale oo beerta ka celiya dabaysha xoogga leh ee dalagga waxyeesha.

1.3.2 Samaynta dhismayaasha beerta looga baahanyahay

Beer khudradeedda si fiican loo qorsheeyey waxay u baahanatahay inay lahaato dhismayaasha asaasiga ah, kuwaasina waa:

- **Bakhaar:** Waxa loo baahanyahay beertu inay lahaato bakhaar yar oo lagu kaydiyo ama la dhigo qalabka beerta lagaga shaqeeyo iyo beer gashigaba.
- **Wadooyin:** Si aanan dalagga loo dhexmarmarin, waa in beerta dhexdeeda laga sameeyo wadooyin la maro marka beerta laga shaqaynayo.
- **Kanaalada waraabka iyo kuwa biyaha dheeriga ahi ka baxaan:** beerta waa in loo sameeyo kanaalada biyaha waraabka beerta u geeya, sidoo kale waa inay beertu lahaato meel ay ka baxaan biyaha dheeriga ahi, si aanay beerta u fadhiisan oo aanay dalagga u waxyeelayn.

1.3.3. Diyaarinat dhulka abaqaalka (Establishing nurseries)

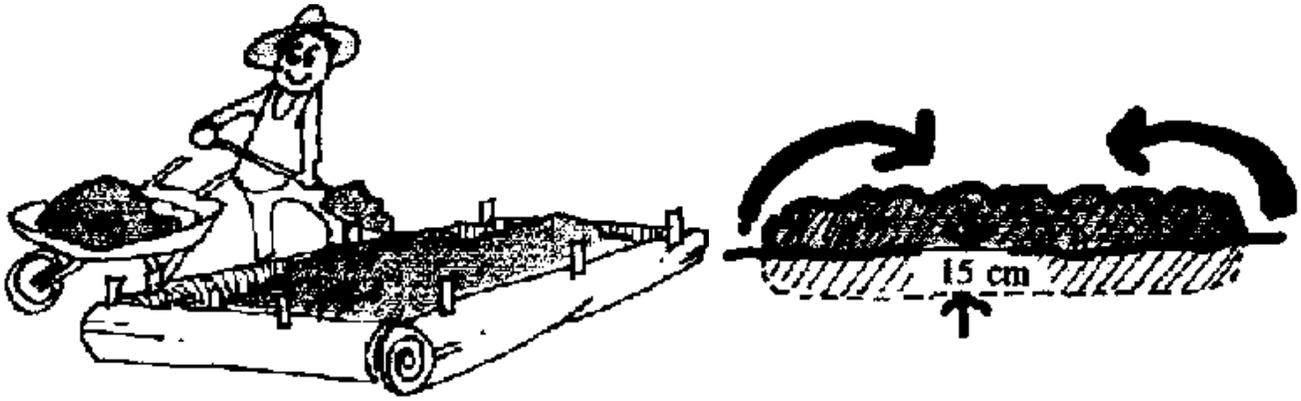
Beerta lagu abaqaalo khudradda waxa loo diyaarin karaa sida soo socota:

- Dhulka oo la baneeyo: beerta ka jar geedaha, ka dhexgur dhagxaanta, islamarkaana isku sin dhulka.
- Dhulka u diyaari qaybqayb: adigoo isticmaalaya yaambo, xagaaf, faralay iwm (jaantus 4), dhulka si fiican u jilci. Daaqa iyio haramaha aad beerta ka gurtana intaad god u qoddo ku rid oo komboosti aad beerta ku darto ka samee. Beerta ilaa laba jeer qod (qalabka beerta qodayaa waa inuu dhexgalo carrada 15-20 santi mitir).



Jaantus 4. Diraarinta dhulka

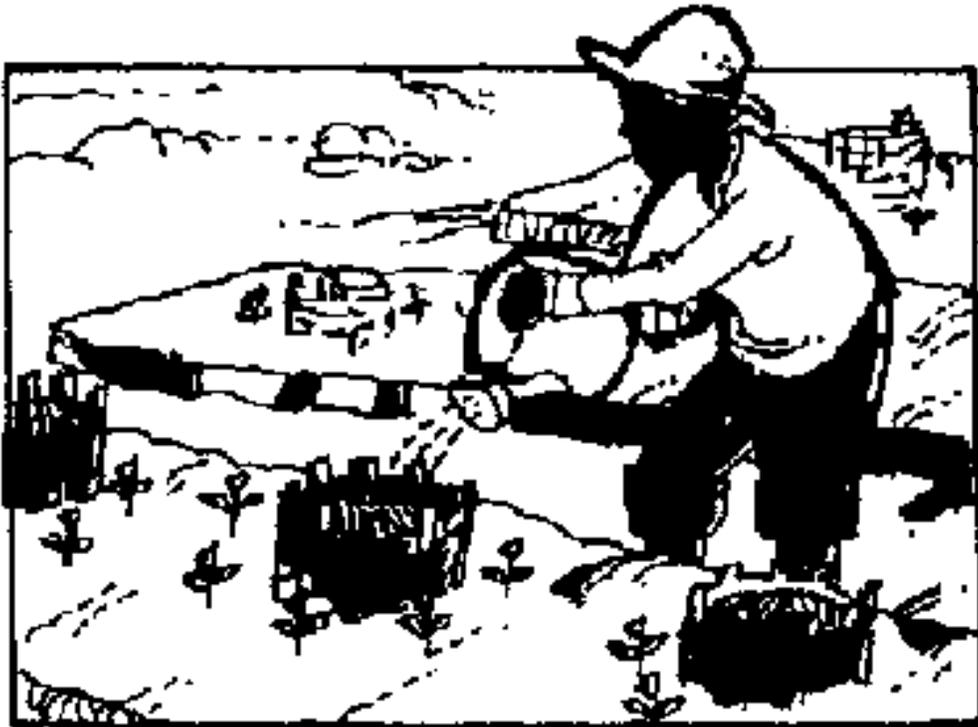
- Carrada aad u furfur oo kala bixi adoo isticmaalaya faralay, islamarkaana burburi fudadaka ad-adag ee carrada ah. Si aad beerta ugu samayso meel ay biyaha dheeriga ahi ka baxaan, qaybta aad ugu talo gashay inaad khudradda ka beerto waa inay dhulka kale ka sarayso 10-15 santi mitir;
- Haddiise uu xaddiga roobku aad u yaryay islamarkaana aanu jirin adeeg waraab, waa in dhulka waxa lag beerayaa uu ka hooseeyo ka agagaarkiisa ah. Tani waxay keenaysaa in roobka yare ee da'a biyihisu iskugu ururaan meesha dalagga laga beeray ee godan;
- Meesha dalagga laga beerayo ku dar komboosti ama diggo xoolaad aad u burburtay (Jaantus 5 B, T and J).



B

T

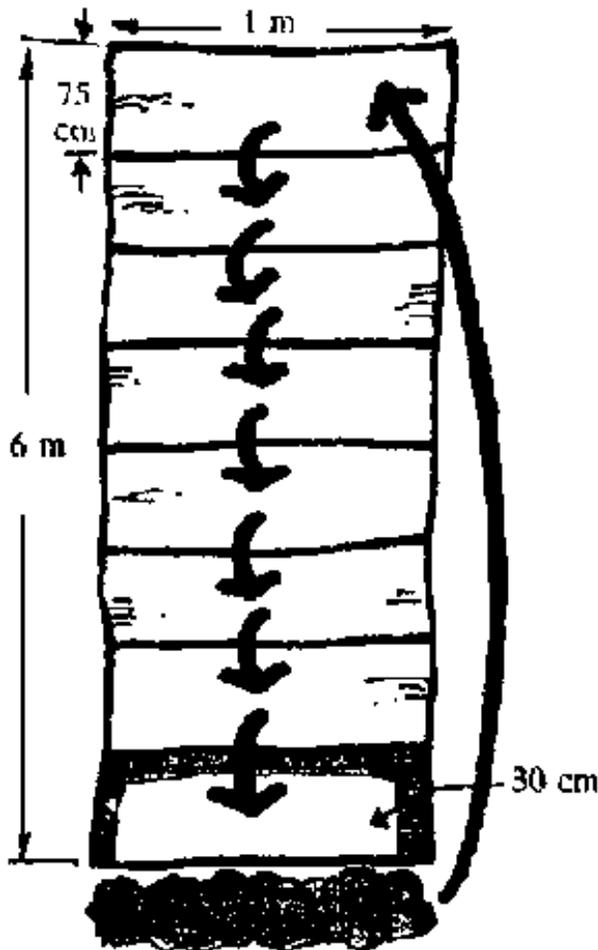
Jaantus 5, Qaadidda (B) iyo ku darista komboostiga beerta lagu darayo (T)



Jaantus 5 J. Komboosti lagu darao goobta abaqalka khudradda

1.3.3.1 Hababaka loo sameeyo goobta abaqalka (Types of nurseries)

- **Goobaha abaqalka ee laga saraysiiso dhulka agagaarkooda ah (Raised bed nurseries):** Goobta abaqalka ee dhulka agteeda ah laga saraysiiyo, waaxaa aad looga isticmalaa meelaha roobku ku badanyahay ama leh waraab la isku hallayn karo. Goobta abaqalka ee nuucan ah sida loo diyaariyo waa:
 - ✓ Waxaad cabirtaa dhul dhan 1 m x 6 m. Dhererku waa is badali karaa, waxana uu ku xidhanayhay helitaanka dhul beereedka ee la hayo (Jaantus 6). Dhulkani aad cabirtay waxaad u qaybisaa qaybo uu ballacoodu yahay 75 senti mitir adigoo isticmaalay loox ama qori dheer.



Jaantus: 6. Goob abaqalka dhulka kale ka koraysa (Raised nursery bed)

- ✓ Ku balladhi goobta abaqaalka lakab kobmoosti ah oo dhumucdiisu tahay 8 santi mitir (Jaantus 7).



Jaantus 7: goob abaqaal lagu daray komboosti (Nursery bed with applied compost)

- ✓ Qod takaari qotadeedu tahay 30 santi mitir ballaceeduna yahay 75 santi mitir. Takaarida waxa laga qodayaa cidhifyada qayabaha loo qaybiyay goobta abaqaalka. Carrada takaarida aad ka qodayan waa inaad dhigto cidhifka goobta abaqaalka (Jaantus 6)
 - ✓ Qod god kale oo barbarro lah kii hore. Takaarida koowaad ku dabool carrada aad ka soo saartay takaarida labaad.
 - ✓ Habkanina sidaas baa lagu wadaa ilaa la gaadho cidhifka kale ee goobta abaqaalka.
 - ✓ Goobta abaqaalka ku dar lakab komboosti ama digo ah oo dhan 2.5 santimitir, 1 kg oo damabs ah, iyo 1.5 kg oo caleemo qalalan ah (Jaantus 7).
 - ✓ Komboostiga iyo digada xoolaha ee aad goobta abaqaalka kor saartay si fiican ugu qas 15 ka santimitir ee ugu koraysa. Goobtani abaqaalku intaas ka dib waxay diyaar u tahay in wax laga beero.
- **Goobha abaqaalka ee godan (Sunken beds):** Goobta abqaalka lagu beerayo waxa laga hoosaysiiyaa dhulka agagaarkeeda ah. Habka nuucan ahna waxaa laga isticmaalaa meelaha roobku ku yaryahay islamarkaana aan lahayn waraab la isku hallayn karo. Habka loo samaynayaana waxa uu

la mid yahay ka kor ku xusan, waxa kaliya oo ay ku kala duwanyihiin kani waa god halka ka kalena ka korreeyo dhulka agagaarkiisa ah.

1.3.4 Qorshaynta iyo maaraynta goobta abaqaalka

Si loo helo waxsoosaar khudradeed joogto ah, waa in si fiican loo qorsheeyo intaan hawsha la guda galin. Marka hawsha la bilaabana waa in si haboon wax loo maareeyo. Sidaa darteed qorshaynta iyo maaraynta goobaha abaqaalka waxa fure u ah in arimaha hoose aad loo tixgaliyo;

- **Qorshaynta dalagga (Crop planning)**
 - ✓ Isku gadgadiska dalagyada (Crop rotation): waa in la isku gadgadiyo dalagyada kala duwan sida kuwa xididka la isticmaalo, digirha, kuwa midha khudradedka leh iwm. Arintani waxay caawisaa in cudurada iyo cayayaanada dalagga waxyeela dhibtooda looga hortago amaba loo yareeyo.
 - ✓ Waa in laga fikiro sidii dhulka abaqaalka si haboon loogu isticmaali laha, loogana hortagi lahaa dhul dayacma oon laga faa'iidaysan.
 - ✓ Waa in dalagyada kala duwan ee asal ahaan degaanka ka soo jeeda la beero, si looga hortago dabar go' ku yimaad dalagyada nuucan ah.
 - ✓ Waa in dalagyada la beerayo ay mar kasta ku jiraan kuwa nafaqada badan leh, dadkuna jecelyihiin sida basal baarta, kaabajka iyo kaarootka.
 - ✓ Waa in dalagyo kala duwan hal mar la beero si lo helo nafaqooyin kala duwan oo dadku u baahnayhay
 - ✓ Waa in la wada beero dalagyada mudada yar ku bislaada iyo kuwa mudada dheer ku bislaada, tanina waxay ka hortagaysaa cunto ama nafaqo darada dhacda xilliyada qaarkood.
- **Qorshaynta nafaqada beerta (Nutrient planning)**
 - ✓ Diyaari qiyaas beerta abaqaalka ku filan oo kombosti ama digada xoolaha ah.
 - ✓ Waxa kale oo aad isticmaali kartaa digada iyo kaadida xoolaha ee isku qasan dareerahana ah.

- ✓ Beerta qayb ka mid ah ku beer dalagyada nafaqada naytarojiin hawada ka soo daba sida digiraha .

- **Ilaalinta biyaha (Water conservation)**

- ✓ Dalaggayada oo marka la beerayo fogaan isku dhaw la isku jirsiiyo waxay yaraysaa biyaha dhulka ka uumi baxa.
- ✓ Dhulka oo korkiisa wax lagu goglo (caleemo, baco dhagxaan iwm) waxay hoos u dhigtaa heerkulka carrada isla markaana waxay yaraysaa biyaha carrada ka uumi baxaya.
- ✓ Beerta oo qoto dheer la qodo, waxyaalah orgaaninga ah sida digada iyo komboostigana lagu daro waxay kordhisaa biyaha dhulka hoos u galaya, sidaas daraadeed carradu waxay kaydin biyo fiican oo dalagu si hagaagsan ugu baxo.
- ✓ Haddii hababka aan kor ku soo sheegnay la hirgaliyo oo la isticmaalo, waxa la yarayn karaa biyaha loo baahanyahay qiyaas dhan 30-50%.

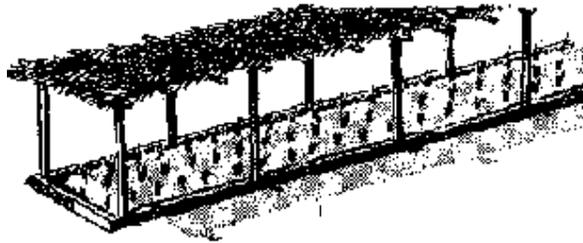
- **Haramaynta (Weeding)**

- ✓ Haramaha oo aad loo xakameeyo waxa uu aad muhiim ugu yahay sidii loo heli lahaa waxsoosaar khudradeed oo badan.
- ✓ Haramaha waxa aad loogu xakamayn karaa iyadoo beerta qota dheer la qodo, carrada oo korkeeda wax lagu goglo iyo dalagga oo marka la beerayo la isku jirsiiyo fogaan isku dhaw dhaw.

- **Xakamaynta dulinka beeraha (Pest control)**

- ✓ Carrada oo la wanaajo, biyo shub fiican loo yeelo, nafaqada carraduna noqoto mid isku dheelli tiran, islamrakaana carradu leedahay noolayaasha ili ma qabatayda ah ee carrada wax u tara, ayaa waxay dalagga ka ilaaliyaan dullino badan oo dalagga waxyeeli lahaa.
- ✓ Dalagyo kala duwan oo beerta hal mara laga wada beerto ayaa iyadna yaraysa dullino badan oo dalagga waxyeela.
- ✓ Dalagyada la isku gadgadinayo ayaa iyaguna yareeya dhibaatooyinka ay keenaan dullinada beeruhu.

- ✓ Iyadoo la beero dalagyada u adkaaysta cudurada iyo cayayaanada, kuwaasi oo ah kuwa degaanka iyo cimilada la qabsaday ayaa iaydana yaraysa dhibta dullinadu keenaan.
 - ✓ Iyadoo la isticmaalo dhirta daawada ama kuwa carafta leh ee cayayaanka erya ayaa iyaguna yareeyaa dhibta dullinada.
 - ✓ Dhirta cayayaanada ama cuduradu waxyeleeyeen oo si dagdag ah beerta inta laga gooyo lagana saaro. Tanina waxay ka hortagtaa fiditaanka cudurada.
- **Gabaad u yeelidda abaqalka (Shelter):** Khudradda abaqalka ahi waxay u baahantahay gabaad ka celiya kulaylka saa'idka ah ee qoraxda, waxaana laga samaynkaraa gabaadka nuucan ah qoryo iyo caws loo dhisay sida ka muuqata jaantuska 8.



Jaantus 8: Gabaadka loo sameeyo dhirta abaqalka (nursery shelter)

- ✓ Sidoo kale beerta khudradda laga beerayo waa inay lahaato dhir gabaad ah oo ka ilaalinaysa dabaysha xoogga badan.

2 Banaynta dhulka iyo dhul u diyaarinta dalagyada khudraddaha (Clearing and land preparation for the production vegetable crops)

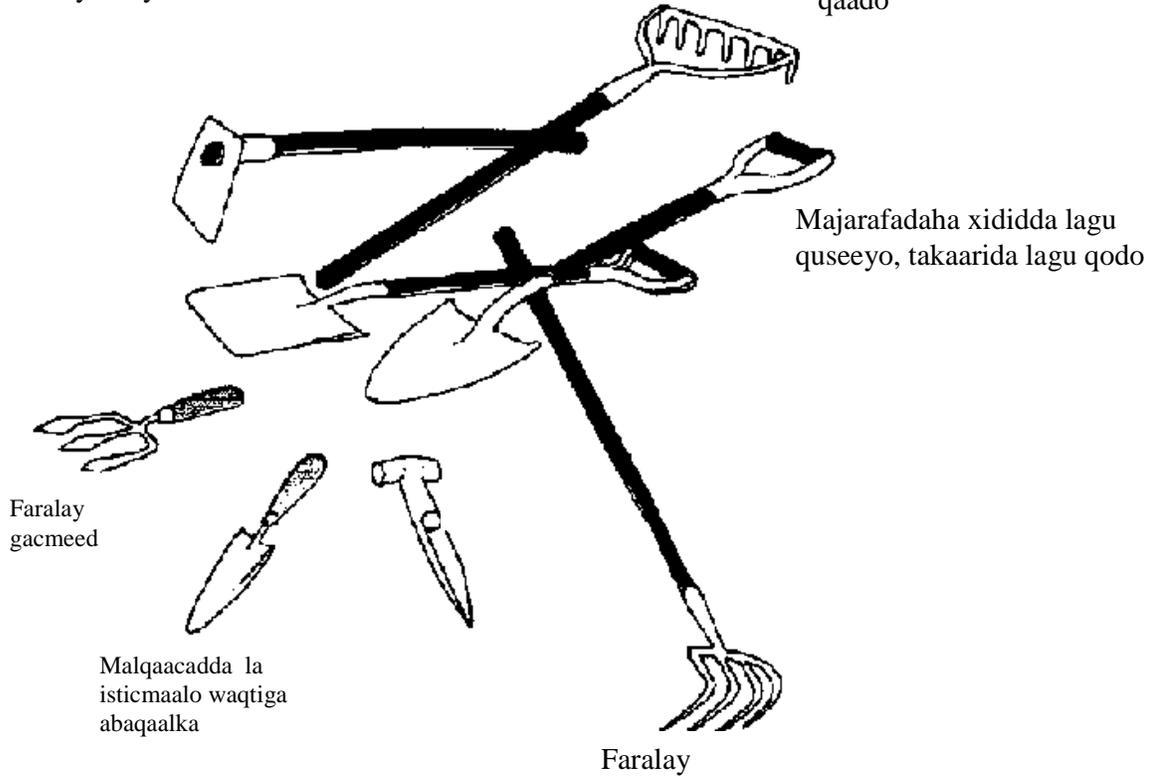
2.1 Banaynta dhulka iyo qalabyada la isticmaalo (Clearing the land and the tools used)

Dhulka la rabo in laga beero dalagyada khudradda waa inuu noqdaa mid aanan geedo lahayn, islamarkaana lahan gufiyo, harama ama dhagxaanba. Dhulku waa inuu noqdo mid si fiican la iskugu simay lehna kanaalada waraabka iyo kanaalada ay ka baxaan biyaha dheeriga ahi. Haddii dhulku aanu waraab lahayn, waa inuu degaankaasi helo roob ku filan.

Beeritaanka khudradda, ha noqoto ta lagu beerayo beerta abaqalka ama beerta waxsoosaarka loogu talagalay, waxa jira qalab la isticmaalo oo lagama maarmaan ah (Jaantus 9). Qalabkani waxa loo isticmaalaa hawlo kala duwan. Dhulka haddii uu kaymo leeyahay waxa loo baahanyahay in lagu baneeyo cagafyada culculus, haddii taas la waayana waxa la adeegsan karaa muruqa dadka iyagoo gudumo/ masaar ama saafaf dhirta ku jaraya qaarkeedna gubaya. Hase ahaatee, mar haddii dhulka la baneeyo qalabyada la isticmaalaa qaybo ka id ahi waa sida ku cad jaantuska 9 ee hoos ku cad.

Yaambo: takaari samaynta,
haramaynta iyo falidda

Faralayda
dhulka algu
simo, qashinka
beeta lagaga
qaado



Jaantus 9: Qalabyada kala duwan ee beerta khudradda lagaga shaqeeyo

Habka loo diyaarinaayo dhulka khudradda laga beerayaa waxa uu la mid yahay sida loo diyaariyo dhulka laga beerayo dalagyada firilayalad ah. Si kastaba ha ahaate habka dhulka loo diyaariyaa waa sidan:

B). Qodaalka koowaad (Primary tillage)

Dhul diyaarinta kowaad waxa loo isticmaalaa in dhulka la jeexo, carrada la jilciyo isla markaana la isdhexgaliyo ilaa 15-91 sentimitir.

Qalabka loo isticmaalo dhul diyaarinta kowaad waxa ka mid ah:

- **Daawe majarafad:** waa laba nuuc, mid dibidu jiiddo iyo mid cagaftu jiiddo: Ujeedada loo isticmaalaana waa:
 - ✓ Si loo fujo loona jilciyo carrada;
 - ✓ In hadhaaga dalagga la burburiyo islamarkaana carrada la dhexgaliyo;

- ✓ In la burburiyo fudadka carrada, lagana dhigo mid hawada iyo biyuhu si fudud u dhexgali karaan.
- **Daawe giraameed:** ujeedooyinka loo adeegsadaana waa:
 - ✓ Si loo xakameeyo haramaha;
 - ✓ Si loo jarjaro loona burburiyo hadhaaga dalagga ee beerta ku hadha; (qaran/ bal) isla markaana carrada loogu aaso;
 - ✓ Si xididada beerta ku hadha loo fujo isla markaana carrada loogu rogo.
- **Daawaha ilkaha leh:** waxa loo isticmaalaa-
 - ✓ Si loo qodo dhulka adag ee biyuhu si fudud u galin, tanina waxay sahashaa in biyuhu dhulka si fiican u galaan.
 - ✓ Qalabkani wuxuu dhulka dhexgali karaa oo qodina karaa ilaa 45-75 santimitir.

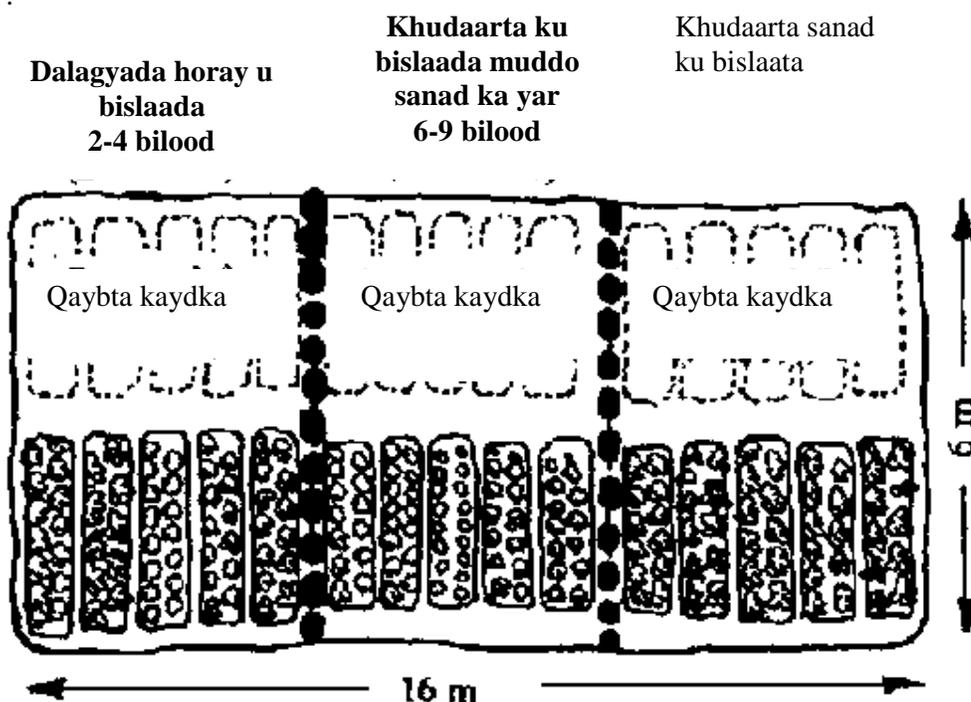
T). Qodaalka labaad (Secondary tillage):Qodaalka nuucan ah waxa la sameeyaa ka dib qodaalka koowaad. Qalabka loo isticmaalaana waa:

- **Daawaha giraamaha badan (Disk harrow):** Ujeedooyinka loo adeegsado
 - ✓ Waxa uu burburiyaa hadhaagga dalagga , sida xididka, gunta/gufida iyo haramahaba.
 - ✓ Waxa uu xididada u saaraa daaqa beerta ka baxa isla markaan carrada ku aasaa.
 - ✓ Waxa kaloo loo adeegsadaa in carrada lagu rogo midhaha la abuurayo (fajaasayo/shiniyaynayo),
- **Daawaha isbiriinka leh (Spring tooth harrow):**
 - ✓ Waxa uu aad ugu fiicanyahay carrada adag iyo dhulka dhagxaanta leh;
 - ✓ Carrada ayuuu jilciyaa islaamarkaana waxa uu gaadhaa dhul hoose;
 - ✓ Waxa uu dili karaa haramaha, gaar ahaan kuwa ku tarma xididada

J) Isku simidda dhulka iyo qaabaynta kanaalada waraabka (Leveling and irrigation channel arrangements): Dalagyada khudraddu waxay u baahanyihiin dhul si fiican carradiisa loo jilciyay iyo hab waraab oo si fiican loo habeeyey, waxa kale oo lagama maarmaan ah in la helo kanaalada ay ka baxayaan biyaha dheeriga ahi.

Si kastaba ha ahaatee, dalagyada khudradda ee xilli bisaylkoodu kala duwanyahay waa in lagu kala beero meelo kala duwan, tanina waxay fududayaa maaraynta beerta (Jaantus 10). Tusaale ahaan haddii aan isku dhexbeero dalagyo ku kala gadisan xilliga ay ku bislaadaan waxa dhacaya dhibaatooyinkan:

- Waxa adkaanaysa in la maareeyo biyaha waraabka: dalaggyada ku jira xilliga koritaanku waxay u baahanyihiin biyo badan, halka dalagyada ku dhaw amaba gaadhay xilligii la goosan lahaa ay u baahanyihiin biyo yar.
- Waxa adkaata ama dhib lagala kulmaa siddii dhulka loo diyaarin lahaa.



Jaantus 10: Habaynta beerta khudradda

3. Maaraynta beerta khudradda (Managing vegetable crops field)

Dalagyada khudraddu waa kuwo aad u nugul islamarkaana u baahan dadaal iyo shaqo badan marka loo eego dalagyada firilayda, si loo helo waxsoosaar fiican.

Haddaba, farsamooyinka ku saabsan beeritaanka dalagyada kala duwan ee khudradda ayaa aad loogu sharxay qaybaha soo socda ee buugan. Dalagyada khudradda ee aad looga beero degaanka Soomaalida Itoobiya waa: Tamaandhada (yaanyo), Basasha, Xabxabka (Qare), Dubada, Kaarootka, Kaabajka, Baytarafka, Baradhada, Midaadiska, Baslabaarta, Toonta iyo Baamiyaha.

3.1 TAMAANDHADA (*TOMATO*).



Asalkeeda iyo siday u baxdo

Tamaandhadu waa mid ka mid ah khudradaha sida aadka ah looga beero aduunka oo dhan lehna nafaqo aad u fiican. Dalagani waxa la isku raacsanyahay inuu asalkiisu ka soo jeedo Qaaradda Ameerika. Sababtoo ah geedo ay isku asal yihiin tamaandhada ayaa laga helay qaybo ka mid ah wadamada Ameerika ku yaal ee kala ah: Booliifiya, Jili, Kolombiya, Ikwadoor iyo Beeruu.

Dalagani tamaandhadu waa mid sanad in ka yar lagu goosan karo ha noqoto midhaha khudradda amaba midhaha khudrada ku dhexjira ee loo isticmaalo abuur ahaan (shinni). Dalaggani waxa uu leeyahay laamo badan oo jiridda ugu yaalla si talantaalli ah. Dalagani waa laba nuuc, mid ubaxaynteeda iyo midho soo saarkeeduba xilliyaysan yahay (*Determinate*) iyo mid dhawr jeer oo kala duwan uu geedkiiba soo saaro midho (*Indeterminate*).

Isticmaalka tamaandhada

1. Tamaandhada waxa lagu dhexkariyaa khudradda kale sida baradhada amaba kuwo kaleba.
2. Tamaandhada waxa lagu daraa saladhka (asalaatada) cuntadu lala cuno
3. Tamaadada waxa aad ugu badan fiitamiinada kala ah C, A iyo B, kuwaasi oo aad lagama maarmaan ugu ah caafimaadka dadka.
4. Waxaan tamaandhada markaan cunno ka hellaa macdano badan oo jidhkeenu u baahanyahay kuwaasi oo ay ka mid yihiin: Botaashiyam (Kaalisyam), Kaalshiyam, Soodhiyam (Naatriyam), Magniishiyam, Fosfooras, Booroon, Manganiis, Sinki, Kobber iyo Xadiid.
5. Midhaha yar yar ee ku dhexjira midha khudradeedka tamaandada waxa laga miirtaa saliid, taasi oo loo isticmaalo in laga sameeyo waxyaalaha wax lagu iidaanto.
6. Tamaandhadu waa daawo: biyha iyada laga miiro haddii la cabo waxay nadiifiyaan kaadi haysta, waxay kaloo nadiifiyaan midhicirada.
7. Dheecaanka ama biyha laga miiro/tuujo tamaandhada waxay kordhisaa xiisaha loo leeyahay cunto cunida
8. Tamaandhada waxa laga sameeyaa suugooyin kala gadisan, kuwaasi oo qaarkood warshaduhu soo saaraan amabase guryaha lagu farsameeyo.

Cimilada iyo carrada ku haboon bixitaanka tamaandhada

Bixitaanka iyo waxsoosaarka dalaggani tamaandada waxa samayn wayn ku leh xaaladaha degaanka iyo cimilada, gaar ahaan heerkulka kaasi oo saamayntiisu aad u wayntahay dhamaan marxaladaha kala duwan ee uu maro bixitaanka dalagani. Tamaandhadu waa dalag u baahan cimilo kulul. Faraqa u dhexeeya heerkulka maalintii iyo habeenkii waa inaanu ka badnayn 5°C . Dalaggani waxa uu soo saaraa midho khudradeed badan marka heerkulka habenku yahay 15°C ilaa 20°C , ka maalintuna yahay 25°C Sidoo kale haddii heerkulka maalintu kor u dhaafto 32°C , ka maalintuna hoos uga dhaco 15°C waxa aad u yaraanaya waxsoosaarka tamaandhada.

Sidaa daraadeed, marka aad rabto inaad beerato dalagga tamaandhada xulo dhulka heerkulkiisu sarreeyo. Iska ilaali beerta hore looga beeray dalagyada ay ka midka yihiin baradhada, barbarooniga amaba tamaandho. Tanina waxay yarayn faafitaanka

cudurada dalaggani waxyeela. Haddii dalagani tamaandhada lagu beero beerta laga goostay dalagga bariiska, waxa aad hoos ugu dhaca cudurada iyo dirxi dhuleedka dalaggani waxyeela. Dalaggani waxa uu si fiican uga bixi karaa carroyin kala duwan, hase ahaatee waxa aad ugu fiican carrada qotadeedu dheertahay, biyo shubkeeduna fiicanayhay, carradeeduna ay tahay mid leh xaddi fiican oo niis ah. Haddii carradu tahay mid dhoobadu ku badantahay waa in gunta qodaalka la dheereeyo, tanina waxay fududaysaa in xididadu si fiican dhulka u galaan. Carrooyinka ay aadka ugu badan yihiin walxaha orgaanigu (waxyaalaha waxa nool ka so jeeda sida digada komboostiga iwm) uma fiicna dalagani, sabatoo ah biyo haysashadooda ayaa badan. Hase ahaatee qiyaas aad u sii badnayn oo waxyaalaha orgaaniga ahi waxay kordhiyaan tirada iyo tayada waxsoosaarka midhaha tamaandhada

Habka beeritaanka iyo maaraynta

Beeritaanka abaqalka (Raising the Seedling)

Abaqaalka dalagga tamaandhada waxa lagu koriyaa goobta abaqalka. Midhaha abuurka ee tamaandhada ayaa si xariijimo ah loogu beeraa dhulka abaqalka oo si fiican loo diyaariyay. 7- 10 maalmood ka dib ayaa haddana lagu beeraa abaqalkani yar beer abaqaal oo kale, iyadoo labdii abaqalba la isku jirsiinayo fogaan dhan 2-3 santi mitir oo dhinac walba ah. Goobta geedaha yar yar ee abaqalka tamaandhadu ka baxayo waa in la waraabiyo islamarka hawsha abqaalidda la dhamaystiraba. Biqilka yar yar ee tamaandhada waa in laga ilaaliyaa kulaylka badan ee qoraxda iyo roobka dhibicdiisaba. Saddex ilaa afar cantoobo oo yuuriya ah ku mil ilaa 30 litir oo biyo ah, ku rushee biqilku marka uu todobaad ku yaalo goobta labaad ee abaqalka.

Diyaarinta beerta lagu beerayo tamaandhada

Beerta tamaandhada lagu beerayo waa in carradedda laga dhigo mid aad u furfuran oo biyaha iyo hawaduba si fudud u dhexgali karaan. Si tani loo helo, waa in beerta cagaf ama dibi lagu qodo dhawr jeer, ka dibna dhulka aad la iskugu simo. Carrada waa in

lagu daro komboosti, iyo carrao nafaqeyayaasha ay ka mid yihiin Dhaab iyo Yuuriya, ka dibna ciidda si fiican loo dhexgaliyo marka beerta la beerayo. Xaddiga carrao nafaqeyayaasha ee beerta lagu daraayo waxay ku xidhanathay heerka nafaqada carrada.

Geedaha abaqaalka tamaandhadu marka ay soo saaraan 4-5 caleemood amaba ay jiraan 4-5 todobaad, waa in gobta abaqaalka laga qaado oo lagu beero (tallaalo) beerta waxsoosarka loogu talo galay. Tamaandhada dhulka lagu beerayaa waa in uu noqdo dhul laga yara saraysiiyay ka agagaarkiisa (Raised beds). Labadii geedna waa in la isku jirsiiyo fogaan dhan 60 x 60 santi mitir. Dalagga waa in beerta la beero maalinta galinkeeda dambee ee heerkulku qabawyahay, islamarkaana waa in beerta la waraabiyo.

Carro nafaqaynta

Si loo helo waxsoosaar midho khudradeed tamaandho oo fiican waa in carradu noqoto mid leh nafo ku filan amaba ka badan inta dalaggu u baahnayahay. Meelaha aanay jirin qiyaasta nafaqada carrada ee beerta lagu darayaa intay tahay waa in lagu daraa beerta 15-20 tan (150-200 kiintaal) oo ah digada xoolaha ama komboosti, 300 kg yuuriya iyo 200 kg oo dhaab (DAP). Dhamaan komboostiga iyo dhaabta waa in beerta lagu daro marka dhulka la diyaarinaayo. Yuuriyada waa in loo qaybiyo saddex isleeg oo lagu daro beerta 15 maalmood ka dib beeritaanka, marka dalaggu ubaxaynayo iyo marka midhaha khudraddu samaysmayaan.

Waraabka

Dalagga tamaandhadu waxa uu u baahnayahya waraabin si fiican loo qorsheeyey,. Waana in si joogta ah biyaha loo siiyo beerta si waxsoosaarku u kordho, islamarkaana laga digtoonaado inay biyuhu beerta fadhiistaan. Dalagani waxa ay xididadiisu biyaha ka soo nuugan ilaa 2m dhulka hoostiisa. Biyaha waraabka oo aan joogto ahayn oo kala go'aa waxay keenaan, amaba dalagga oo la siiyo biyo badan oo waraab ah ka dib markii uu muddo oomanaa, waxay arintaasi dhalisaa in midhaha khudradu dil-dilaacaan (Jaantus 11). Arintanina waxay khudradda tamaandhada ka dhigtaan mid aan la iibsanaayn. Khudradda tamaandhada si tayadeedu u fiicnaato waa in sifiican dalagga loo waraabiyo marka dalaggu ubaxaynayo iyo marka uu midhaha khudradda

samaynayo. Haddii dalagga la waraabiyo marka khudraddu bislaanshaha gaadho waxa dhalanaysa in midhuhu noqdaan biyo-biyo tayaduna aanay fiicnaan. Sidaas darteed waraabku waa inuu noqdo kolba baahidu siday tahay.



Jaantus 11. Dildiilaaca midha khudradeedka tamaandhada

Geedo u taagidda iyo qusaynta (Training and Pruning)

Iyadoo loo taago dhirta tamaandhada geedo ama loo sameeyo waayiro ay qabsato si aanay dhulka ugu dhicin (Jaantus 12), waxay sababtaa in dalaggu horay u bislaado, xaddiga waxsoosaarkuna kordho, tayada midhaha khudraduna fiicnaato. Sidoo kale arintani waxay yaraysaa cudurada, waxa kalooy sahashaa goosashada dalagga. Sidoo kale iyadoo dhirta tamaandhada la quseeyo (laga jaro laamaha qaar) wax `ay kordhisaa iayadna xaddiga waxsoosaarka.



Jaantus 12. Geed u taagidda iyo qusaynta tamaandhada

Goosashada khudradda tamaandhada (Harvesting)

Waqtiga la goosanayo khudradda tamaandhadu waxay ku xidhantahay hadba fogaanta ay beertu u jirto suuqa. Tamaandhada marka loo suuq gaynayo aggaarka meesha ay ka baxday waa in la goosto marka midabkeedu noqdo casaan. Hase ahaatee marka khudradda tamaandhada loo dhoofinayo suuq fog waa in la goosto marka midhaha

midhaha khudraddu cagaar yihiin laakiin koriinku u dhamaaday, waana in 48 saacadood ka hor marka la dhoofinayo lagu fuufiyo dawada loo yaqaan itayliin (Ethylene).

Tamaandhada la qasacadeeyo waa in la goosto markay si fiican u bislaato ee midabkeeduna casaan yahay. Degaanka Soomaalida Itoobiya Tamaandhada waxa lagu gooyaa gacanta oo makiinado lama isticmaalo, hase ahaatee meelo badan oo aduunka ka mid ah tamaandhada waxa lagu gooyaa makiinado loogu talo galay.

3.2. BASASHA (*BASASHA*)



Asalkeeda iyo siday u baxdo

Basashu waa mid ka mid ah dalaggyada aduunka korkiisa loogu horbeertay. Waxa loo malaynayaa inuu asalkeedu yahay Bariga Dhexe iyo gobalada ku xeeran badda cad.

Basasha caadiga ahi waa mid ka mid ah dalaggyada ubaxa ku soosara laba sano gudahood, hase ahaatee marka laga rabo in la goosto badhida la cuno ee dhulka hoostiisa ku jirta waxa lagu goosan karaa sanad gudihi. Basashu waxay ubaxaysaa sanadka labaad, sababtoo ah sanadka koowaad waxay soo saartaa badhideeda dhulka hoostiisa ku jirta. Basashu waxay leedahay xiddido u eg miiqyo dun ah oo dhulka hoos u gala in ka badan hal mitir. Hase ahaatee xididada basasha intooda badan waxa laga helaa carrada lakabyadeeda kore.

Isticmaalka basasha

1. Caleemaha cagaaran ee basasha, iyo badhida basasha ee aanan aad u adkaan waxa lagu cunaa cagaar ahaan iyagoo lagu dhexkarinayo baradho;

2. Basasha badideeda marka la cuno waxay jidhka dadka siisaa tamar badan, waxa kaloo ay leedahay borotiin, waxa kale oo aad ugu badan macdanaha ay ka midka yihiin fosfooras iyo kaalshiyam;
3. Badhida basasha (Bulb) waxa loo isticmaalaa salad ahaan;
4. Waxa kale oo basasha lagu daraa suugada, waxa lagu carfiyaa cuntooyinka kala duwan ee aan cunno;
5. Basasha inta la qalajiyo ayaa laga sameeyaa budo si loogu dhoofin karo meelo fog loona kaydin karo muddo badan;
6. Bashasha waxa kaloo loo isticmaalaa daawo ahaan sida:
 - ✓ Biyaha laga miiro basasha waxa la ursiiyaa dadka suuxa (hysterical fits and faintness condition), waxa kaloo lagu daweyyaa dadka leh shuban dhiigga (dysentery);
 - ✓ Bashashu waxa kaloo ay yaraysaa daalka, waxa ay jidka sii saa awood iyo xoog;
 - ✓ Waxay ka hortagaa gabawga degdegga ah;
 - ✓ Waxay kordhiyaan xiisaha dadaku u qabo cunto cunidda;
 - ✓ Waxay yaraysaa nakhaska badan ee caloosha dibiriya;
 - ✓ Waxay kaloo ay ka hortagaa kulaylka qoraxda ee dadka guba.

Cimilada iyo carrada ku haboon bixitaanka basasha

Basashu waa dalagyada jecel dhulka qabaw. Hase ahaatee waxa laga beeri kara degaanno leh cimilooyin kala duwan. Waxay si fiican uga baxdaa dhulalaka leh cimilo yara qabaw, balse aanaan lahayn qabaw ama kulayl daran, degaankaasina waa inaanu lahayn roobab aad u badan. Dalaggani waxa uu si fiican uga baxaa dhulka hela roobab dhan 750-1000 mm ama waraab u dhigma. Heerkulka ugu fiican ee dalaggani u baahnayahay waa 13° - 21°C ka hor intaannu dalaggu badhida soo saarin iyo 16°-25°C marka dalaggu uu badhida soo saarayo. Heerkul inyar sarreeya iyo hawo qallalan ayay basashu u baahantahay marka ay bislaanayso.

Carrada: Dalagga basasha waxa laga beeri karaa nuuc kasta oo carro ah, taasi oo ah mid qotadeedu dheertahay, nafaqo fiican leh islamarkaana biyoshubkeedu wanagsanayahya. Basashu si fiican ugama baxdo carrooyinka uu sida fudud uga samysmo lakab adag (Crust) oo diida inay biyuhu dhulka si fiican u galaan. Carrada

basasha laga beerayaa waa in xaddiga lagu cabbiro asiidhu yahay pH 6 ilaa 7. Dalagga basashu waxa uu u adkaystaa oo uu ka baxaa carrada asiidha leh, balse uma adkaysan karto carrooyinka milixda leh. Haddii dalaggani basasha laga beero dhul milix lehna waxsoosaarku aad buu hoos ugu dhacaa. Beertu waa inaan la ogolaan inuu harama badani ka baxo, ismarkaana waa in carrada lagu daro waxyaalaha orgaaniga ah oo ay ka mid yihin komboostiga iyo digada xooluhu. Arimhanina waxay kor u qaadaan waxsoosaarka dallaga laga helayo.

Habka beeritaanka iyo maaraynta

Beeritaanka abaqalka (Raising the Seedling)

Dalagga basasha waxa loo beeri karaa saddex hab. Kuwaasi oo kala ah: in midhaha yaryar ee basasha toos beerta loogu abuuro (beero), iyo in midhaha yaryar ee basasha marka hore lagu beero goobta abaqalka, ka dibna biqilka basasha inta goobta abaqalka laga qaado lagu beero beerta waxsoosaarka loogu talagalay. Habka saddexaadna waa in midhaha basasha lagu beero goobta abaqalka laguna daayo halkaas ilaa basashu soosaarto badhida dhulka hoostiisa ku samaysanta. Badhidasi basasha ee samaysanta ayaa lagu beera beerta. Hababka basasha loo beero oo faahfaahsani waa sida hoos ku xusan:

- **Midhaha basasha oo si toos ah beerta loogu beero (Direct seeding):** Waa iyadoo midha yaryar ee basasha beerta lagu firdhiyo (Fajaas/ firdhin ama saydhiyo). Habka nuucan ah ee loo beerayaa waxa uu aad ugu haboon yahay degaanada leh xilli beereed dheer, islamarkaan aanan lahayn hamaday (frost) iyo biyo yaraanba. Midhahani sida tooska ah beerta loogu beerayo waa in fgaanta la isku jirsiinayaa noqoto 2.5-7.5 cm, midhahana waa in carrada la dhexgaliyo 0.5 ilaa 2 cm, tani oo ku xidhan nuuca basasha ee la beerayo.
- **Ku kobcinta midhaha goobta abaqalka (Seedling raising):** Habkani isaga ah midhaha basasha ayaa lagu beeraa goobta abaqalka, ka dibna dhirtani markay waxoogaa yara korto ayaa lagu tallaalaa amaba lagu beeraa beerta loogu talo galay waxsoosaar ahaan (Jaantus 13).



Jaantus 13. Basal la abaqaalay



Badhi (bulb sets) basaleed oo la beerayo

- **Badhida basasha ee yaryar:** Badhida bashasha ee ka soo go'day dalagga lagu beeray beerta abaqaalka ayaa inta la jaro si toos ah loogu beeraa beerta waxsoosaarka loogu talagalay.



Jaantus 14. Badhida basasha ee la beero

Diyaarinta goobta abaqaalka iyo beeritaanka biqilka beerta lagu beerayo

Goobta basasha abqaalka ah lagu beerayaa (Nursery) waa in qiyaasteedu noqotaa 3 m x 0.6 m, islamarkaana carradeeda laga saraysiiyo dhulka agagaarkiisa ah joog dhan 15-25 cm, iyadoo labadii qaybood ee isku xigana la isku jirsiinayo fogaan dhan 70 santi mitir. Goobta abaqaalka loo diyaarinayo waa in carradeedu leedahay niis badan iyo waxoogaa dhoobo ah. Goobta abaqaalka waa in carradeeda lagu daboolo 2-3 santi mitir oo komboosti ama digo xoolaad ah ka dib marka midhaha lagu beerayo goobta abaqaalka. Midhaha basasha intaan la beerin waa lagu daraa sunta loo yaqaan Thiram qiyaas dhan 2-3 giraam halkii kiiloo ee midho ahba. Midhaha marka la beerayo waa in loo beero xariijimo isku jira 4-5 santi mitir, carradana la dhexgaliyo ilaa 2-3 santi mitir. Midhaha marka la beero ka dib waa in carrada lagu goglo/korsaaro (mulch) caws qallalan ama hadhaaga dalagga si ay uga hortagaan inuu carrada raysku ka tago. Marka raysku ku yaraado goobta abaqaalka waa in la waraabiyo iyadoo biyaha si

fudud loogu shubayo. Abaqaalka si looga ilaaliyo roobabka xoogga badan amaba kulaylka saa'idka ah ee qoraxda waa in loo sameeyo hadh yar oo ka samaysan qoryo la taagay iyo caws. Basasha abaqaalka ahi waxay diyaar u tahay in lagu beero beerta waxsoosaarka loogu talagalay 6-9 todobaad ka dib maalinta la beeray, xilliganina dalagga basasha waxa dhererkiisu gaadhayaa 20-25 santi mitir. Basasha abaqaalka marka beerta lagu beerayo waxa biqilka lagu beeraa fogaan isku jirta 10 x 15 santi mitir.

Carro nafaqaynta

Dalagga basasha ee la rabo in badhideeda (Bulb)la goosto, waxa lagu dari karaa 250 kg oo yuuriya ah, 200 kg oo Dhaab ah (DAP), 150 kg oo ah muurate botaash (waa nafaqada ay ku jirto botaashiyamtu) iyo 20 tan (200kiintaal)oo digada xoolaha ama komboosti ah hiktaarkiiba. Digada xoolaha ama komboostiga, iyo yuuriyada oo dhan iyo kala badh dhaabta iyo muuraytka waxa beerta lagu daraa marka dalagga la beerayo ama marka ugu dambaysa ee dhulka la diyaarinaayo. Inta soo hadhay ee ah yuuriyada iyo muuraytka waxa laba isleeg loogu daraa beerta xilliga uu dalaggu baxayo.

Waraabka

Beerta basasha laga beeray waa in la waraabiyo islmarka abaqaalka laga soo gooyo goobta abaqaalka laguna beero beerta waxsoosaarka loogu tala galay. Carrada beertu waa inay noqoto mid leh rays ku filan dalagga. Marka basashu bislaato ee badhideedu gaadho xilligii la goosan lahaa waa in waraabka laga joojo. Haddii waqtigan la waraabiyo waxa xumaanaya oo dhooboobaya badhida basasha.

Xakamaynta haramaha

Maadaama dalagga basasha fogaan yar la isku jirsiiyo labdii geedba islamarkaana xididadu aanay aad dhulka hoos u sii galin, waxa lagama maarman ah in beertu noqoto mid aan haramo lahayn, gaar ahaan marka ugu horaysa ee dalaggu aanu aad u dhaadheeraan. Xilligan isaga ahna waxa haramaha lagu xakamayn karaa iyadoo gacanta lagu guro, hase ahaatee marka dalaggu aad u koro ee caleen samaysanku dhamaystirmo, way adkaataa in haramaha lagu xakameyo gacan ku gurid, haddiiba la isku dayo in gacan lagu guro aad bay u kharash badnaanaysaa. Sidaas darteed,

isticmaalka suntan haramaha disha oo si wada jir ah loola isticmaalo gacan ku haramayn marka dalaggu jiro 45 maalmood ayaa aad loogu talo bixinayaa. Sumaha haramaha lagu xakamaynkaro waa: Baseline qiyaas shan 1 litir/ha ama Stomp qiyaas shan 3.5 Litir/ha, suntanina waa in beerta lagu buufiyo islamarka dalagga la beeraba.

Goosashada iyo habaynta basasha badhideeda

Basasha waxa lagu goosan karaa oo 3-5 bilood, waa marka la rabo basha sida fiican u bislaatay ee adkaatay. Balse haddii la rabo in la goosto basasha oo wali cagaaran waxa lagu goosan karaa 2-3 bilood. Bashasha marka la goosanayo gacanta ayaa lagu fujiyaa, xididadana waa loo daayaa (Jaantus 15). Ka dibna inta la maydho ayaa la iskugu xidhaa qiyaas ku haboon baahida suuqa.

Waqtiga ugu haboon ee ay tahay in basasha badhideeda (bulb) la goosto waa marka caleemaha geedku bilaabaan inay daataan. Waqtiga saxda ahina waa todobaad ka hor marka 50% caleemaha geedku daataan, ama marka caleemuhu noqdaan hurdi islamarkaana ka qallaalaan qaybta kore.



B

T

J

Jaantus 15: Goosashada (b) iyo habaynta (T iyo J) basasha

Basasha la rabo in bakhaarka la dhigo, waa in si fiican loo habeeyo islamarka la goostaba. Habka loo habaynayo waa in waxoogaa la qalajo si diirka sare iyo luqunteeda (skin and neck) ay uga baxaan biyaha dheeriga ahi, tanina waxay yaraysaa cudurada ku dhasha basasha. Tani waxa kale oo ay kaalmaysaa, sidii loo yarayn lahaa isku ururka badan ee ku dhaca basasha bakhaarka la dhigo iyadoo aad u qoyan. Mudada loo baahanyahay in basasha lagu qalajo waxay ku xidhanathay xaalada cimilada, waxayna qaadan kartaa 2 -3 todobaad. Xaddiag waxsaaosaarka ee basashu waa 250- 300 oo kiiintaal/hiktaarkiiba. Degaanka Soomaalida Itoobiya xaddiga badhida basasha ee laga goosto halkii hiktaarba waa 100 kiintaal.

Kaydinta basasha badhideeda (Storage of Bulbs)

Basasha bakhaarka ama meesha kale ee lagu kaydinaayaa waa inay noqoto meel si fiican hawadu usoo gasho ugana baxdo. Bashasha waxa lagu shubaa si loo kaydio amaba loo dhoofiyo jawaanno, saxaarado amaba sallado (Jaantus 16).



Jaantus 16: Basal sallado lagu guray iyo mid dhulka wadhan

Basasha marka la goosto waa in xididada loo daayo. Heerkulka basasha lagu kaydinkaro waxa uu u dhaxeeyaa 4.5°C ilaa 14°C, heerkulka ugu fiicanian waa 12°C.

3.3 XABXABKA (WATERMELON)

Xabxabku ama qaruhu (Jaantus17) waa khudrad aad u muhiim ah. Waa khudrad aad u macaan oo ay dadku dhamaan xiiseeyaan, ha noqdaan hodan amaba wax mahaysatee. Boqolkii giraam ee xabaxab ah waxuu ka koobanyahay biyo qiyaas dhan 92%, borotiin 0.2 % , macdano 0.3% , kaarboohaydarayt 7%.



Jaantus 17. Xabxab/qare

Cimilada iyo carrada ku haboon bixitaanka xabxabka

Xabxabku waxa uu u baahanyahay cimilo kulul, taasi oo maalintu kulushahay habeenkuna yara qabawyahay. Dalaggani uma adkaysan karo hamadayga (dhaxanta

aadka u qabaw). Midhaha xabxabku si ay u biqlaan waxa loo baahanyahay rays fiican iyo heerkul dhan 25-30°C. Heerkulka ugu haboon ee dalaggu si fiican ugu baxo marka uu helo waa 28°-30°C. Khudradda xabxabkuna markay samaysmayso ama korayso waxay u baahantahay heerkul gaadhaya 24°C.

Habka beeritaanka iyo maaraynta

Habka beeritaanka midhaha

Xabxabka waxa la beeraa midhihiisa yaryar ee khudradda ku dhexjira. Xaddiga midhaha ah ee loo baahanyahay in lagu beero halkii hiktaarba waxay ku xidhantahay: fogaanta la isku jirsiinayo midhaha amaba xariijimaha marka dalagga la beerayo iyo fogaanta dallagu carrada isku fidiyo marka la beero (Spreading habits of the vines). Guud ahaan xaddiga midha ee loo baahnayhay hirkaarkiiba waa 3 -3.5 kg oo ah nuuca midhahoodu yaryaryihiin, iyo 5 kg/hiktaarkiiba oo ah nuuca midhahoodu waawaynyihiin. Intaan la beerin ka hor, midhaha xabxabka waa in biyo lagu radiyo muddo dhan 48 saacadood si biqlidoodu u fiicnaato. Midhahani biyaha lagu radiyey waa in lagu beero dhinacyada takaarida (Sides of furrows) amaba godad loo diyaariyay. Marka la beerayana meeshiiba waxa lagu ridaa laba xabbo oo midho ah. Halka godadaka marka lagu beerayana godkiiba lagu rido 4 xabbo oo midho ah. Geedaha xabbabka ee aadka u dagaaga (aadka dhulka iskugu fidiya) marka la beerayo fogaanta la isku jirsiinayo labadii xariijimoodba waa 3.5 m halka labadii geedbana la isku jirsiinayo 1.2 m. Dhanka kale nuucyada aan aadka u dagaagin waxa la isku jirsiiyaa 2.0 m x 1.0 m.

Qusaynta xabxabka(Pruning)

Dalagga xabxabka marka uu baxaayo waa inaan loo ogolaan inuu laamo badan soosaaro, si tani looga hortago loona kordhiyo waxsoosaarka khudradda xabxabka waa in laamaha badan qarkood la quseeyo (Jaro). Waa in geedkiiba loo ogolaado 2-4 laamood oo ka baxa jiridda xabxabka..

Carro nafaqaynta

Dalaggani xabxabku waxa uu aad u jecelyahay nafaqada. Hase ahaate, xaddiga nafaqada ee dalagga lagu darayaa waxay ku xidhanathay nafaqada carrada ku jirta, cimilida iyo nuuca dalagga loo beerayo. Marka dhulka la diyaarinaayo waa in carrada

si fiican loogu qaso 15-22 tan (150 ilaa 220 kiintaal) oo ah digada xoolaha oo si fiican u burburtay ama komboosti. Xaddiga nafqda warshaduhu soosaraan ee dalaggani lagu dari karo waa 200kg oo yuuriya ah, 175 kg oo dhaab ah, iyo 250 kg oo ha muurayt botaash hiktaarkiiba.

Xakamaynta haramaha

Beerta xabaxabka, marka dalaggu aanu aad u korin waa in haramaha aad looga ilaaliyo, islamarkaana beerta la xagaafo 15-20 maalmood ka dib beeritaanka. Dalaganina waxa uu u baahanyahay in la harameeyo 2-3 jeer. Sumaha haramaha lagula dagaalamo ee laisticmaali karaa waa Butachlor qiyaas dhan 2 kg/ha ama Trifluralin qiyaas dhan 1-2 kg/ha. Balse marka xabxabka laamihiisu dhulka korkiisa isku fidiyaan, muhiim maaha in beerta la harameeyo, sababtoo ah laamaha xabxabka ayaa huriin oo dili wixii harama ah ee xilligaas ka dib beerta kasoo baxa. Balse xabadaha haraha ee aadka u waawayn waa in gacanta lagu rujo, marka haramaha nuucan ah la goynayana waa inaan dalagga xabxabka jiridihiisa iyo laamihiisa waxba la yeelin .

Waraabka iyo gogolida wax la gogol carrada korkeeda (Irrigation and Mulching)

Haddii aanu degaanku lahayn roob ku filan, xabaxabka waa in la waraabiyo, balse waa in laga ilaaliyo inay beerta biyuhu fadhistaan, tanina waxay yarayn waxsoosaarka. Carrada rasykeedu waxay muhiim u tahau in midhaha xabxabku soo biqlaan. Waraabka badani ma fiicno, sababtoo ah waxa bata laamaha iyo caleemaha uu geedku soo bixinaayo, waxana yaraanaya midha khudradda ee geedka kasoo go'aaya. Xilliyada dalagga xabxabku aanu u adkaysan Karin biyo la'aan waa: Ubaxaynta waxyar ka hor, ubaxaynta iyo marka dalagagu uu khudradda samaynayo. Dalagga marka khudradiisu bislaato waa in waraabka laga joojo, haddii kale waxa dil-dilaaci khudradda xabxabka.

Xabxabka marka la beero ee dalaggu waxoogaa koro laamana soo saaro, waa in carrada korkeeda lagu gogolaa daaq ama caws qallalan si ay u ilaaliyaan inaanu raysku carrada ka dhamaan. Sidoo kale arintani waxay khudradda xabxabka ka ilaalisaa inaanay carradu dhaawicin.

Goosashada khudradda xabxabka iyo maarayntiisa goosashada ka dib

Xabxabka khudradiisa waa in la goosto marka ay si fiican u bislaato. Goosashada dalagga hal todobaad ka hor waa in beerta waraabka laga joojo. Haddii la waraabiyo xilligaas waxay keeni in khudraddu dil-dilaacdo marka la qaadayo ama suuqa loo rarayo. Dalagani waxa uu ku bislaadaa oo lagu goosan karaa 90-120 maalmood ka dib beeritaanka.

Bislaanshaha khudradda xabxabka waxaa lagu grankaraa:

- ✓ Waxa isbadala midabka khudradda ee dhinacaeeda dhulka xiga, kaasi oo iska badala caddaan iskuna badala hurdi;
- ✓ Khudradda xabxabka ee aan bislaanin marka gacanta lagu dhirbaaxo waxay u shanqadhaa sida birta, balse markay bislaato waxay samaysaa shanqad daciif ah;
- ✓ Marka khudradda xabxabku bislaato waxa qalasha meesha ay kaga dhagantahay laanta.

Xaddiga waxsoosaarka khudradda xabxabka ee laga goosan karo halkii hiktaarba waa 200 ilaa 250 kiintaal/hiktaarkiiba. Khudradda xabxabka waxaa la kaydin karaa marka la dhigo qol hawo leh ilaa 3 todobaad.

3.4 DUBADA (*PUMPKIN*)

Dubadu waxa ay ka mid tahay dalagyada ugu muhimsan khudradda, sabatoo ah waxsoosarkeeda hiktaarkiiba ayaa aad u badan, nafaqadeeda ayaa saraysa, muddo dheer baa la kaydin karaa, degaanno iyo cimilooyin kala duwanna waa laga beeri karaa. Si fudud baa loo qaadi karaa oo loogu dhoofin karaa meelo fogfog. Dubada khudradeeda marka la kariyo, la shiilo amaba la dubo waa wax aad u macaan. Dallagani marka uu baxayana laamihiisu dhulka ayay isku fidiyaan (dagaagaan) (Jaantus 18).



Jaantus 18. Dalagga dubada

Cimilada iyo carrada ku haboon bixitaanka dubada

Dalagga dubadu waxa uu u baahanyahay cimilo kulul oo heerkulkeedu u dhaxeeyo 18°–30°C, waxa kale oo dalaggu u baahanyahay ilays qoraxeed badan iyo hawo biyo leh si uu waxsoosaarka dalaggu u kordho. Carrooyinka aadka ugu haboon dalaggani waa kuwa leh huyuumas iyo orgaanik badan. Waxsoosaarka ugu badan waxa la helaa marka carradu aanay lahayn asiidh, milix iyo waxyaalaha tayadeeda waxyeela (pH waa inuu noqdo 5.5-6.8).

Habka beeritaanka iyo maaraynta

Beeritaanka abaqalka iyo ku beeridiisa beerta waxsoosaarka loogu talo galay

Dalagga dubada marka la beerayo waxa si toos ah beerta loogu beeraa midhahiisa, ama midhaha ayaa inta lagu koriyo goobta abaqalka, ka dibna biqilka ayaa lagu talaalaa beerta waxsoosaarka loogu talo galay.

Midhaha oo si toos ah loo beero (Direct seeding): Midhaha dubada waxa lagu beeraa meesha taakan ee takaariyo loo diyaariyay. Waxa kale oo dubada lagu beeri karaa dhul waxoogaa kor looga qaaday agagaarkiisa. Waxa kale oo dubada lagu beeraa godada xadigoodu yahay 60 x 60 x 60 santi mitir

Habka abaaqalida (Transplant): Dalaggani dubadu kuma fiicna abaqalka, oo si fiican ulama qabsado. Haddiise beeralaydu rabto inay suuq fiican helaan xilliyda aanan beerolay badani beerin dalaggan, waa in la isticmaalo habka abaqalka, habkanina waa mid aad qaali u ah. Midhahana waxa lagu beeraa goobta abaqalka 5-7 todobaad ka hor inta aanan beerta lagu beerin biqilka laga soo qaaday goobta

abaqaalka. Habka nuucan ah shan ilaa toban kiiloo garaam oo midho ah ayaa ku filan in la beero hal hikraar oo dhul ah. Midhaha inta aanan lagu beerin beerta abaqaalka waa in lagu daweeyo Vitavax or Captan qiyaas dhan 2 giraam halkii kiiloo garaam ee midho ahba.

Xulashada iyo diyaarinta dhulka

Dhulka la rabo in laga beero dubadu waa inuu noqdo mid biyo shubkiisu fiican yahay oo aanay biyuhu ku fadhiisanin, dhulkaasi waa inuu lahaado adeeg waraab oo fiican amabase waa in roobka deegaankaasi ka da'aa uu yahay mid dalagga ku filan. Ilays qoraxeed dalagga ku filanina waa lagama maarmaan. Sidoo kale dhulka lagu beerayo dubadu waa in xilliga la beerayo ka hor aanan dhulkaasi laga beerin dubbo. Dhulka marka la diyaarinaayo waa in ilaa saddex jeer cagaf ama dibi la galiyaa si carrada loo jilciyo dhulakna la iskugu simo. Beerta waa in lagu daro 25 ilaa 30 tan oo ah diggada xoolaha oo aad u burburtay amaba komboosti, ismarkaana waa in si fiican carrada loogu qaso.

Hababka kala duwan ee dubada loo beero

- i) **Godadka laga qodo dhulka isku siman oo agagaarkiisa laga yara saraysiiyo (Pits on raised beds):** Habka nuucan ah godad gaagaaban oo cabirkoodu yahay 45 x 45 x 40 santi mitir (ama 60 x 60 x60 santi mitir) ayaa la diyaariyaa, labadii xariijimoodna waxa u dhaxeeya 2 m. Dhulka midhaha lagau beerayo waa in uu agagaarkiisa ka yara sareeyo 20 santimitir.
- ii) **Dhulka midhaha laga beerayo oo inta la isku simo laga saraysiiyo ka agagaarkiisa ah (Raised bed method):** Dhulka midhaha laga beerayo waa inuu ka sareeyo ka agagaarkiisa. Midhahana waa in lagu rido cidhifyada dhulka la isku simay. Dhulka la isku simayaa waa inuu dhererkiisu noqdo 2 ilaa 2.5 mitir.

Carro nafaqaynta

Dalaggani dubadu si uu waxsoosaarkiisu u fiicnaado tiro iyo tayo ahaanba waa in carradu yeelato nafaqo aad u fiican. Xaddiag iyo nuuca nafaqada ah ee carrada lagu darayaa waxa ay ku xidhantahay carrada nuuceeda iyo xaddiga nafaqada ee carrada ku jira. Guud ahaan, inta carrada laga baadhayo oo la hubinayo xaddiga nafaqada ee carrada ku jira, waa in carrada lagu daro 1600 kg oo ah diggada xoolaha, 175 kg yuuriya ah, 175 kg Dhaab, iyo 150 kg oo muurayt botaash ah.

Waraabka (Irrigation)

Marka dhulku qalalan yahay ee aanu roob jirin, dubada waa in la waraabiyo 5-6 maalmoodba mar. Haddiise dalagga la beero xilli roobaadka, waa in la waraabiyo oo kaliya marka waraabku noqdo lagama maarmaan. Dalagga oo biyo badan lagu waraabiyo marka uu bislaanayo waxay keentaa in khudradda dubadu qudhunto, islamarkaana waxa yaraada xaddiga sonkorta ee ku jira.

Xakamaynta haramaha

Beerta dubada laga beerayo waa inay noqoto mid aan haramo lahayn. Caadiyan waxa loo baahanayhay 2-3 jeer in beerta la harameeyo, taasi oo la bilaabo 20 maalmood ka dib marka midhaha la aburo. Beertana waxa lagu xakamayn karaa in la xakaaf. Xilliga hore ee dalaggu yaryahay waa in xakaafaynta aad loogu dhaweeyo geedka, waana in qotada la qodayaa noqoto 5-10 santi mitir. Balse marka laamaha geedku dhulka ku fidaan ee ay carrada korkeeda qariyaan, looma baahna beerta in la harameeyo, sababtoo ah dalagga lamihisa ayaa hawada iyo ilayska qoraxdaba ka qabsanaya haramaha.

Maaraynta kale ee dalaggu u baahnayhay

Markasta oo dalagani dubada la waraabiyaba, waa in carrad korkeeda lagu goglo caws iyo wixii la amid ah si looga ilaaliyo carrada korkeeda inay yeelato lakab adag oon biyuhu muusi karin (Crust). Sidoo kale jiridda dubada, 2-3 laamood ee ugu horeeya laamaha dhinacyadeeda ka baxa waa in la jaro. Khudrada dubadu markay

smaysantana waxa fiican haddii ay suurogaltahay in la hoos dhigo waxyaalo carrada ka celiya.

Goosashada khudradda dubada iyo maaraynteeda

Khudradda dubadu waxay ku bislaataa 75-180 maalmood ka dib marka la beero. Khudradda dubadu markay bislaato, muddo badan baa la kaydin karaa loona dhoofin karaa suuqyo fog. Xaddiga waxsoosaarka ee laga goosan karo halkii hiktaar ee dubo ahi waa 250 ilaa 400 oo kiintal. Astaamaha lagu garto marka ay bislaato khudradda dubadu waa:

- (i) Khudradda duabda oo midabkeedu isku badalo hurdi ama cawlaan.
- (ii) Meesha khudradda dubadu kaga taallo geedka ayaa qalasha
- (iii) Laamaha geedka dubada oo bilaaba inay qalalaan (Jaantus 19).

Khudradda dubada waxa la kaydin karaa 2-3 todobaad haddii heelkulku yahay 15-20°C, islamarkaana heerka biyaha hawada ku jiraa yahay 75%.



Jaantus 19: Khudrad dubbo oo bislaatay

3.5 KAAROOT (CARROT)

Kaarootka waxa la cunaa xididadiisa dhulka ku aasan iyagoo karsan ama qaydhiin. Xidida kaarootka waxaa aad ugu badan walaxda fiitamiin A da laga helo,iyo macdano badan oo jidhkeena wax wayn u tara. Waxa kaloo kaarootka loo isticmaalaa in lagu midabeeyo subagga iyo cuntooyinka kaleba.



Cimilda iyo carrad uu u baahanyahay kaarootku

Dalagga kaarootku waaxa uu ka midyahay dalagyada jecel qaboobaha, balse nuucyo ka mid ah kaarootka ayaa u adkaysan kara kana baxa dhulalka aadka u kulul. Samysanka midabka xididada kaarootka waxa samayn wayn ku leh heelkulka. Xididaduna waxay yeeshaan midab fiican marka heerkulku u dhaxeeyo 15° C to 21°C. Midhaha kaarkootku waxay biqlaan marka heerkulku yahay 7° to 24°C. Dalagani kaarootka waxa uu ka bixi karaa carrooyin kala duwan. Hase ahaatee si ay xididadu u dhaadheraadaan ay dhulka hoos ugu galaan waxa loo baahanyahay carro fudud oo biyo shubkeedu fiicanayahay. Carrooyinka culculus ee dhoobadu ku badanathay xididadu aad uma dhaadheeraan dhulkana hoos uma galaaan. Kaarootka waxa fiican in laga beero meelaha dhulka hoostiisa biyaha ku jiraa aanay aad u fogayn, tanina waxay keentaa inaan dalaggu oomin. Hase ahaatee, dhulku waa inaanu noqon mid aanay biyuhu isku taagin. Waxsoosaarkuna waa uu yaraadaa marka uu pH ku ka yaraado 6.5.

Habka beeritaanka iyo maaraynta

Diyaarinta dhulka

Dhulka marka la diyaarinaayo waa in si fiican cagaf ama dibi lagu qodo. Haddii aan carrada si fiican loo diyaarin, oo ay leedahay fudad ad-adag, lagama soo saari karo dalag fiican. Dhulka korkiisa waa in si fiican la iskugu simo ka hor intaan dalagga la beerin. Dhulka marka la beerayo waa inaan qodaal sa'id ah lagu samyn, si aana dhibaato loogu gaysan qaabdhismeedka carrada.

Beeritaanka dalagga

Dalagga kaarootka marka la beerayo midhaha ayaa si toos ah loo beeraa. Beertana waa in loo yeelo takaario isku jijira 30-35 santi mitir. Midhahana waa in carrada la dhexgaliyo ilaa 1.5 santi mitir, si uu dalaggu horay ugu biqlo. Dallagan midhihiisu waxay kuso biqlaan 10-20 maalmood. Marka midhaha carrada lagu ridayo waa inay carradu lahaataa rays ku filan inay midhuhu biqlaan, haddii aanay carradu rays lahayna waa la waraabiyo islamarka midhaha carrada lagu ridaba. Midhaha intaan la beerin ka hor waa in biyo lagu radiyo 12 ilaa 24 saacadood. Xaddiga midhaha ee halkii hiktaarba lagu beeri karaa waa 5-6 kg.

Carro nafaqaynta

Beerta lagu beerayo kaarootka waxa lagu dari karaa 23 tan (2300 kg) oo ah digo xoolaad si fiican u burburtay aama komboosti, 100 kg yuuriya, iyo 100 kg oo Dhaab ah (DAP).

Kalaya yaraynta biqilka kaarootka (Thinining)

Dalagga kaarootka marka uu biqilka yahay waa in geedaha qayb laga jaro, fogaanta ay isku jirayaan labdii geedna waa inay noqoto 4-5 santimitir. Dalagga kaarootka koritaankiisu xawaare badan kuma socdo xilliyada hore, sidaas darteed lama tartami karo haramaha, waana in haramaha beerta laga guro, carradana waa in si joogta ah loo xagafo/yaanbeeyo si ay u ahaato mid furfuran oo biyaha iyo hawaduba gali karaan. Sidoo kale xaramaha waxa lagu xkamayn karaa iyadoo lagu buufiyo suntan haramaha

disha ee lagu magacaabo Stomp qiyaas dhan 3.5 litir hiktaarkiiba, suntaasna waa in la isticmalo islamarka midhaha kaarootka carrada lagu ridaba.

Waraabka

Marka aad beerto dalagga kaarootka, waa in carradu rays lahaataa ilaa dalaggu ka soo biqlaayo. Xilliyada kalena waa in dalagga kaarootka la waraabiyo 8-10 maalmoodba mar. Marka la rabo in dalagga la goosto waa 2-3 maalmood ka hor la waraabiyo, tani waxay jilcisaa carrada fududaysaana in xididada si fudud loo soosaaro. Dhanka kale waraab badan oo saa'id ahi waxa uu hoos u dhigaa waxsoosaarka.

Goosasha iyo habaynta kaarootka

Kaarootka waxa la goosan karaa 50 ilaa 85 maalmood ka dib marka la beero. Dalaggani xididadiisu waxay diyaar u yihiin in la goosto marka dhumucda qaybta sare ee xididku tahay 2.5 ilaa 4 santi mitir. Goosashada dalagga haddii dib loo dhigo xididdadu waxay noqdaan kuwo ad-adag oon ku haboonayn in la cuno. Marka la goosanayo xididada kaarootka waa in lagu qodo xagaaf ama yaanbo, laakiin xilligan waa inay carradu rays leedahay. Heerkulka caadiga ah ee bakhaarada waxa dalaggani lagu kayd in karaa 3-4 maalmood.

3.6 KAABAJ(CABBAGE)

Kaabajku waxa uu hodan ku yahay fiitamiinada A,B, iyo C. Kaabajka la beertaa waa caddaan, balse waxa uu yeelan karaa midabo kale si ku cad jaantiska 20. Sidoo kale qaabka uu u samaysanyahay madaxa kaabajka ee la cuno waa uu kala duwanyahaty.

Isticmaalka kaabajka

- ✓ Kaabajka waxa loo isticmaalaa in lagu dhexdaro tamaandhada, qajida kaarootka iyo baytaraafta;
- ✓ Kaabajka waxa kale oo loo isticmaalaa daawo ahaan: wuxuu ka hortagtaa calool istaagga, wuxuu kordhiyaa xiisaha dadaku u qabo cunto cunidda, waxa uu dadajiyaa dheefshiidka cuntada, waxa kale oo uu cunto fiican u yahay dadka xanuunka macaanka loo yaqaan leh.



Jaantus 20: Nuucyada kaabajka

Cimilada iyo carrada uu ka baxo kaabajku

Kaabjku waa dalagyada xilliyada qabawga ah baxa, waxay si fiican ugu baxdaa dhulalka qoyaanka iyo rayska leh. Wuxuu u adkaysan kartaa qabawga badan iyo hamadaygaba. Ubaxa ayay daadisaa marka cimiladu kulaylka tahay. Midhaha kaabajku waxay si fiican u biqlaan marka heerkulku carradu yahay 13°C to 16°C. Koritaanka dalagga kaabajku hoos buu u dhacaa marka uu heerkul kor u dhaafu 25°C. Carrooyinka biyo shubka fiican iyo xaddi badan oo waxyaalah orgaaniga ah (digada xoolaha iyo komboosti) leh ayaa ah kuwa ugu fiican ee dalaggani aadka uga baxao. Hase ahaatee, dalaggan waxa laga beeri karaa carrooyin kala duwan inkasto waxsoosaarku ku xidhanayahay hadba carrada tayadeedu siday tahay iyo maaraynta. Nuucyada kaabajka ah ee la rabo inay horay u bislaadaan waa in laga beero carrooyinka fudfudu ee niistu ku badantahay, halka nuucyada muddada dheer ku bislaadana lagu beero carrooyinka cul-culus ee dhoobada leh. Carrada pH keedu waa inuu u dhaxeeyo 6.0-7.0.

Habka beeritaanka iyo maaraynta

Beeritaanka abaqaalka iyo ku beeridiisa beerta waxsoosaarka loogu talo galay

Abaqaalidda (Transplanting): Midhaha kaabajka waxa marka hore lagu beeraa goobta abaqaalka, waana in dhulka si fiican loo qodo loona kala qaybiyio qaybo la maarayn karo. Qaybahaasi loo qaybiyayna (Beds) waa inay cidhifyadoodu kor uga kacsanaadaan dhulka kale ee agagaarkoda ah jog dhan 10-15 santi mitir. Goob abaqaal oo dhan 60-80 m² ayaa ku filan inay soosaarto abqaalka ku filan hal hiktaar.

Midhaha waxa lagu beeraa takaariyo yaryar dhumcdoodu tahay 2-3 santi mitir, labadii takaarina fogaanta la isku jirsiinayaa waa 10-7 santi mitir. Midhahana marka la

beerayo waa in la isku jirsiiyo 5-7 santi mitir, midhahana waa in carrada la dhexgaliyo 1.5 ilaa 2 santi mitir. Midhaha waxa lagu daboolaa ama lagu qariyaa lakab yar oo carro ah ama isku jir komboosti iyo carro. Waaxyaalaha orgaaniga ah ee carrada lagu daboolayaa waxay kor u qaadaa heerkulka carrada, taasi oo dadajisaa biqlidda midhaha kaabajka. Sidoo kale waxyaalaha uu cawsku ka mid yahay haddii lagu kor goglo carrada waxay tani midhaha ka celisaa qoraxda tooska ugu dhacaysa. Goobta abaqaalka waa in biyo lagu rusheeyo, balse ka ilaali inay meesha biyuhu aad ugu bataan ama ku fadhiistaan. Midduhu markay soo biqlaan, taasi oo qadadata 4-6 todobaad, waa in waxyaalaha carrada korkeeda lagu goglay laga qaado.

Midhaha kaabajka oo si toos ah beerta loogu beero (Direct sowing): Midhaha kaabajka waxa lagu beeri karaa geerka taakan ee takaariyada beerta waxsoosaarka loogu talo galay, beertaasi oo lagu golayo baco daldaloolo biqilku kasoo dhex duso leh. Bacdani carrada lagu kor goglayaa waxay kor u qaaddaa heerkulka, waxayna dadajiyaa waqtiga ay midhaha ku qaadata inay soo biqlaan. Sidoo kale midhaha kaabajka oo si toos ah beerta loogu beero isla markaana carrada lagu kor goglo bac waxay kordhisaa waxsoosaarka.

Marka beerta lagu beerayo kaabajka la diyaarinaayo wa in beerta la qodo 3- 4 jeer. Kaabajka abaqaalka marka beerta lagu tallaalayana waa in labadii takaariba la isku jirsiiyo 60-70 santi mitir, labadii geedna waa in la isku jirsiiyo 45 santi mitir.. Kaabajka abaqaalku marka uu jiro 30-35 maalmood ayaa beerta lagu talaalaa

Carro nafaqaynta

Dalagga kaabajku waa mid xaalufiya nafaqada carrda, waana in beerta lagu daro 15-20 tan (1500 ilaa 2000 oo kiintaal), oo ah digo xoolaad aad u burburtay ama komboosti, 240 kg Yuuriya iyo Dhaab. Dhaabta oo dhan waa in beerta lagu daro marka beerta la beerayo. Kala badh Yuuriyadana waa in dalaggu marka uu baxayo lagu daro dharw jeer si isleeg.

Waraabka

Dalaggani kaabajku waxa uu u baahanyahay carro leh rays joogto ah si uu kaabajku u soo saaro waxsoosaar badan oo tayo leh. Waraabka ugu horeeya waa in la la siiyo islamarka kaabajka abaqalka ah beerta lagu tallaalo. Dhanka kale, beerta waa inaan la siin waraab aad u badan marka dalaggu bislaanshaha ku dhawyahay.

Xakamaynata haramaha

Beerta waa in si fudud loo xagafo si haramaha beerta looga guro islamarkaana carrada loo furfuro si ay biyaha iyo hawadu si fudud u dhexgalaan. Midda kale waa in jiridaha kaabajka agagaarkoda carrada lagu soo tiiriyo 5-6 todobaad ka dib waqtiga beerta lagu tallaalo.

Goosashada iyo maaraynta kaabajka

Kaabajka madaxyadiisa waa in la goosto 90 ilaa 100 maalmood ka dib maalinta beerta lagu tallaalo. Xilligan isaga ahna kaabajka madaxiisu waxa uu gaadhaa heerkii ugu dambaysay koriin. Xaddiga waxsoosaarka kaabajka ee laga heli karo halkii hiktaarab waa 33 ilaa 45 tan (330 ilaa 45 kiintaal). Kaabajka bislaaday ee suuqa la gaynayo xaaladaha caadiga ah waxa la kaydin karaa 4-5 maalmood, balse haddii la rabo in la kaydiyo dhawr toddobaad waa in lagu hayo meel qabaw oo heerkulkeedu yahay 0° to 2° C, xaddiga huurka hawaduna 85 -87%.

3.7 BAYTARAAF (BEET ROOT)

Baytaraafka waxa asalkiisu kasoo jeedaa wadamada ku xeeran badda cad ee ku kala yaal Yurub iyo Waqooyiga Afrika. Baryihii hore dalaggani gaar ahaan nuucyadiisa duurka ka baxa waxa loo isticmaali jiray dawo ahaan oo kaliya. Hase ahaatee baytaraafka waxa hadda loo beertaa in khudrad ahaan loo cuno islamarka beerta laga soo gooyaba amaba lagu farsameeyo warshadaha. Wadamada ugu horeeya soo saarida baytaraafku waa: Ruushka, Fransiiska, Maraykanka, Boolandi, iyo Talyaaniga. Dalaggani waxa uu ku ubaxeeyaa oo uu midhaha ku soo saaraa laba sano gudahood.

Haddiise la rabo in la goosto xididadiisa, maadaama iyaga la cuno waxa dalagan lagu goostaa in sanad ka yar. Dalaggani marka uu helo qabaw waxa uu xididkiisu yeeshaa midab aad u qurux badan oo cas (Jaantus 21).

Isticmaalka baytaraafka

- ✓ Baryihii hore dalaggani baytaraafka waxa loo isticmaali jiray oo kaliya daawo ahaan;
- ✓ Haddase dalaggani waxa loo beertaa cunto ahaan ama calaf xollaad darteed.



Jaantus 21: Dalagga baytaraafka

Cimilada iyo carrada ku haboon bixitaanka Baytaraafka

Dalaggani aad uma dhibo kulaylku, waxa uu u adkaystaa dabaysha, waxa uu u baahanyahay ilays qoraxeed badan, biyaha uu u baahanayhayna ma badna. Dalaggani baytaraafku inkastoo uu ka baxo dhulalka kulul, hase ahaatee waxa dalaggan xididkiisu yeeshaa midab fiican marka dalaggani ka baxo dhul qabaw oo rays leh. Dalaggani waxa uu si fiican u baxaa xilliyada maalintu kulayl tahay habeenkuna qabaw yahay. Dalaggan heerkulka ugu fiican ee uu ku baxaa waa 20°-22°C. Heerkulku haddii uu kor u dhaafo 26° C waxa adkaada xididda, islamarkaana waxa yaraata xaddiga sonkorta ee ku jirta. Xididka baytaraafka ee tayada fiican leh ee dhulka qabaw ka baxaa waxay leeyihiin sonkor badan iyo midab cas oo wada qariya xididka oo dhan.

Dalaggani waxa uu si fiican uga baxaa carrooyinka fudud amaba dhexdhexaadka ah ee dhoobo aad u badan lahayn. Carradu waa inay nafaqo badan tahay, qotadheertahay, islamarkaana biyo shubkeedu fiicanayhay. Carrada pH keedu waa noqdo ilaa 8.

Dhulka waa in si fiican cagaf ama dibi loogu qodo ilaa 15-20 santimitir dhawr jeer, si carrada looga dhigo mid furfuran oo biyaha iyo hawaduba si fudud u galaan. Carrada

korkeedana waa in la isku simo, lagana dhigo mid qashin iyo buur buur adag aanan lahayn. Digo si fiican u burburtay ama komboosti waa in beerta lagu daro marka la diyaariyo.

Beeritaanka

Dalaggani baytaraafka marka la beerayo midhaha ayaa si toos ah beerta loogu beeraa ama midhaha ayaa marka hore lagu beeraa goobta abaqaalka, muddo kadib markay yara koraana waxa lagu tallaalaa beerta waxsoosaarka loogu talagalay.

Beeritaanka dalagga lagu baarayo beerta

Dhulka oo si fiican loo diyaariyo ayaa fure u ah in dalaggu soo saaro xidido tayo fiican leh. Beerta lagu beerayo baytaraafka waa in ay noqoto mid carradeedu qota dheertahay, lahayn dhagxaan ama salaxyo. Midhaha marka si toos ah beerta loogu beerayo waa in labadii xariijimoodba la isku jirsiiyo 35-45 santi mitir marka lagu beerayo taagga takaariyada, ama 30-40 santi mitir marka lagu beerayo dhulka isku siman ee laakiin ka korreeya dhulka agagaarkiisa ah. Labadii geedba fogaanta la isku jirsiinayaa waa 10-15 santi mitir. Marka baytaraafka la rabo in lagu kobciyo goobta abaqaalaka waa in la beero 4-5 todobaad ka hor inta aanan beerta lagu tallaalin. Marka ay xilli roobaadka tahay midhaha waxa carrada la dhexgaliyaa ilaa 2-3 santi mitir. Midhaha marka beerta toos loogu beero waa in si taxadir ku jiro loo waraabiyo, si aanay biyuhu u qaadin midhaha carrada la galiyay.

Haddii la rabo in si joogto ah loo goosto dalagga baytaraafka sanadka oo dhan waa in 12 todobaadba mar dalaggani la beero, tani waxay keenaysaa in bil kasta la helo dalag lagoosto. Midhaha baytaraafka marka la beero haddii la rabo inay si fiican u soo biqlaan waa in biyo lagu radiyo midhaha 5-12 saacadood, taasi oo ku xidhan heerka heerkulka hawada. Waxa kale biqil iksu mid oo beertoo dhan qariya la helaa marka carradu aanay aadna u qalalayn una qoyanayn. Waxa ku jira midhaha baytaraafka waxyaalo midhaha u diida inay biqlaan, waxaana dhibkani lagu xallin karaa arimaha hoos ku qoran:

:

- ✓ Midhaha oo biyo lagu radiyo intaan la beerin ka hor 2-4 saacadood;
- ✓ Midhaha oo inta lagu dhexdarro quruurax, inta weel lagu shubo la ruxo;

- ✓ In midhaha lagu xoqo walxo leh xanaf

Yaraynta tirade geedaha baytaraafka ee beerta ka baxaya

Beerta baytaraafka marka geeduhu aad iskugu dhawaadaan koriin darteed, waa in qaybo laga guro, oo 5-10 santimirba hal geed lagu reebo. Geedaha la jarana waxa loo isticmaali karaa xawaash dhari ahaan.

Carro nafaqaynta

Dalagani baytaraafku si uu dhakhso ugu koro una soo saaro waxsoosaar leh tiro iyo tayaba. Sidaas darteed carradu waa inay lahaataa naafqo fiican oo ah N, P, iyo K. Carrada marka la baadho haddii aanay lahayn nafaqo badan waa in lagu daro 130 kg Yuuriya, 87 kg Dhaab, iyo 83 kg Muuriyat botaash. Dalagyada xididooda la cunaa waxay u baahanyihiin qiyaas badan oo ah nafaqada botaash, maadaama uu caawiyo smaysanka sonkorta iyo dhakhso u korrida xididka.

Xakamaynta haramaha

Haramaha kasta oo beerta ka baxa waa in laga guro beertana laga saaro. Haramahana waxa lagu xakamayn karaa in gacanta lagu guro ama la xagafo beerta. Si fudud oo beerta loo xagafo waxay carrada ka dhigtaa mid biyaha iyo hawaduba si fudud u dhexgali karaan. Waxay kaloo xagaafidani caawisaa in xididku si fiican u koro. Dhanka kale waa in geedaha dheeriga ah beerta laga jaro marka abaqalka dhererkiisu yahay 6-8 santi mitir. Dhirta saa'idka ahna waa in laga guro beerta ilaa labadi geddb fogaanta isku jiraa ay noqoto 8-10 santi mitir

Waraabka

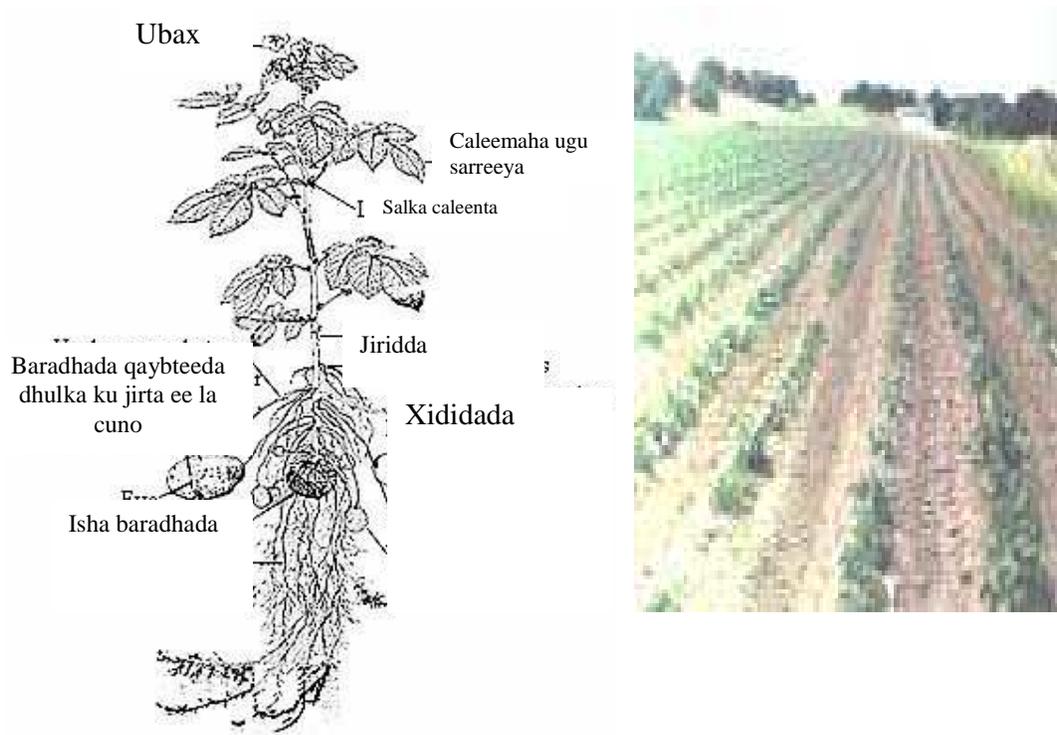
Haddii roobku aanu ku fillayn dalagga, waa in la waraabiyo 7-10 maalmoodba mar. Haddii biyuhu ay ku yaraadaan beerta waxa yaraada dhumucda xididdada baytaraafka. Dalagga baytaraafka si xididadiisu horay ugu koraan una macaanaadaan waa inay carradu rays joogta leedahay. Sidaas daraaded waa in carradu leedahay rays joogta ah ilaa dalaggu ka bislaado. Haddiise mar intay carradu qalasho biyo lagu waraabiyo waxay keentaa xididada oo dil-dilaaca.

Goosashada iyo habaynta dalagga

Dalaggani baytaraafka xilliga ugu horeeya ee la gosan karaa waa marka xididada dhumucdoodu tahay 3.5 santimitir, haddii xididda loo ogalaado inay koraan intan ka badan way adkaadaan, amaba bush-buush bay noqdaan, gaar ahaan cimiladu markay tahay mid kulul oo qallalan. Maraka kaarootka la rabo in la warshadeeyo waa in la goosto marka xididadu yeeshaan dhumuc dhan 6.5 ilaa 8.0 santi mitir. Midhaha marka la goosto waxa lagu ridi karaa si loo dhoofiyo jawano ama baco, waxaana lagu kaydiyaa meel qabw oo qoyaan leh. Xaddiga waxsoosaarka ee dalagga baytaraafku waxa uu noqon karaa 250 ilaa 300 oo kiintaal hiktaarkiiba. Dalaggani haddii goosahsadiisa waqtiga saxda ah dib looga dhigo in ka badan toban maalmood, waxa bilaabmaya xumaansho uu waxsoo aarku xumaado. Marka xididdada la goosanyo waa inay carradu rays leeday si ay u fududaato soo saarida xididada. Ka dibna xididada la soo saaro waxaa la iskugu xidhi karaa 4-6 xabbo oo isku dhumuc ah. Haddii la arbo in la kaydiyo, xidido caafimaad qaba oo nadiif ah ayaa waxa lagu ridi karaa bohola amaba bakhaaro. Boholaha lagu kaydino xididda baytaraafka waa in hoos loo qodo 90 ilaa 150 santimitir, islamarkaana waa inay boshoshu qalalantahay marka xididada lagu ridayo. Xididada intaan godka lagu ridin ka hor waa in caleemaha oo dhan laga sii jaro, marka bohosha lagu guro xididadana waa in korka laga saaro lakab carro ah oo qaradiisu dhantahay 30 santi mitir. Waxana la sii kor saaraa lakab ah caws qallalan, waxana kan lag sii saraysiiyaa bac si ay biyaha uga celiso bohosha. Habka nuucan ahna baytaraafka waxa lagu kaydinkaraa muddo dhan 4-6 bilood. Sidoo kale xididdada baytaraafka ee la maydhay waxa qaboojiye lagu kaydin karaa muddo dhan laba toddobaad marka lagu rido baagag baco ah.

3.8 BARADHADA(POTATO)

Khudraddaha xidadooda (tuber) la cuno, kuwa ugu muhiimsan waxaa ka mid ah baradhada , waa dalag ka mid ah khudraddaha ganacsi ahaan loo beerto. Dalaggani khudrad ahaan oo kaliya looma beerto, balse waa dalag cuntada koowaad u ah wadamao badan oo aduunka ka mid ah. Baradhadu waxay jidhka siisaa tamar labalaab ama labalaab iyo badh ka badan ta aan ka hello halkii hiktaar ee laga beero qamaddi ama bariis.



Isticmaalka baradhada

- ✓ Baradhada waxa loo isticmaalaa khudrad ahaan;
- ✓ Baradhada waxa laga sameeyaa daqiiq la cuno ;
- ✓ Daqiiqda baradhada waxa laga dubaa buskud iyo sabaayad marka lagu qaso daqiiq qamadi ;
- ✓ Baradhada inta loo jarjaro qurub-qurub yar ayaa la shiilaa ;
- ✓ Baradhadu waxay hodan ku tahay borotiin, fiitamiinno, macdano, sonkor iyo istaarji;
- ✓ Baradhadu waxay ka hortagtaa shuushka ilkaha gala.

Cimilada iyo carrada ku haboon baradhada

Baradhadu waxay u baahantahay cimilo dhul-badheen ku xigeen ah. Waxay ka baxdaa dhulka badda agagaarkiisa ah ilaa dhulka joogiisu korreeyo. Dalagga baradhau marka uuna aad u korin waxa uu si fiican uga baxaa dhulka heerkulkiisu yahay 24°C, marka dalaggu si fiican u baxana waxa loo baahanyhay heerkul dhan 18° C. Baradhadu markay samaynayso qaybta dhulka hoostiisa ku jirta waxa loo baahanyahay heerkul dhan 20°C, waxsoosaarkuna waxa uu hoos u dhacaa marka heerkulka gaadho 30° C, waxana istaaga samaysanka qaybta dhulka hoostiisa ku jirta. Baradhadu waxay ka baxdaa nuucyo badan oo carro ah. Waxsoosaarka ugu fiican ee baradhadana waxa la helaa marka carradu tahay nuuca niista iyo siltida (waa carrada nuuca aan dhoobo ahayn, islamaana aan ahayn niis) ee isku jira., waana inay carradu hodan ku noqoto waxyaalaha orgaaniga ah, islamaana ay carradu lahaato biyoshub fiican. Carrada pH keeduna noqdo 5 ilaa 7. Carradu waa inay noqoto mid hawadu si fiican u gali karto ugana bixi karto. Carrada dhoobayda ahi uma fiicna dalagan.

Beeritaanka baradhada

Baradhada waxa laga beeri karaa qaybteeda carrada ku jirta (tuber), halkii xabbo ah qaybta carrada dhulka ku jirtaa waxay leedahay dhawr ilood, halkii ilna waxay noqon kartaa geed (Jaantus 22).



Indhaha biqla

Jaantus 22: Baradhada qaybta la beero



Diyaarinta midhaha abuurka ee baradhada (tuber seed)

Marka loo isticmaalayo baradhada qaybteeda carrada ku jirta midho ahaan, waa in qaybtaasi loo jarjaraa xabadii baradho ahba afar qaybood sida ku cad jaantuska 23., qaybtii kastana waxa loo beeraa gaarkeed. Tayada barada la beerayo waa lagama maarmaan inay wanaagsanaato. Sababtoo ah kharshka ku basha abuurka baradhada (qaybta dhulka hoostiisa laga soosaaro) waxa uu noqdaa 40-50% kharashka beeritaanka baradhada.

Maaraynta baradhada loo isticmaalyo beeritaanka

- ✓ Midhaha baradhada (Tuber seed) ee beeritaanka loo isticmaalyo waa in laga soo iibsado meel lagu kalsoon yahay;
- ✓ Baradhada abuur/shinni ahaan loo isticmaalayo waa in lagu daweeeyaa salfiyuurik asiidh (1.75%) iyo asetic asiidh (1%) lagu daray ZnSO₄ (0.05%) + Boorik asiidh (1%). Kuwa sidani loo dawaynayaana waa kuwa aanan jilcin ee wali adag;
- ✓ Badanaa isticmaal baradhada nuuceeda aanan ilaheedu leeyihiin biqil (Sprout), islamarkaana dhumucdoodu tahay 4-6 santi mitir;
- ✓ Marka beerta la beerayo waa in beerta haramaha laga nadiifiyo, hadhaaga dalagii hore beerta uga baxayna la qaado.



Jaantus 23; Sida loo jarjaro baradhada abuur ahaan loo isticmaalayo

Isticmaalka midhaha dhabta ah ee baradhada

Midhaha dhabta ah ee baradhada waxa lagu beeraa goobat abaqaalka, ka dibna markay biqlaan ee waxoogaa koraan ayaa lagu tallaalaa beerta waxsoosaarka loogu talo galay. Habkani waa mid kharsh iyo cudud shaqaale oo badan u baahan.

Beeritaanka baradhada lagu beerayo beerta

Dhawr nuuc baa baradhada beera loogu beeri karaa, kuwaasi oo kala ah:

- i. **Habka takaariyada (*Ridge and furrow method*):** habkani isaga ah waxa la diyaariyaa takaariyo joogoodu dhanayhay 30 santi mitir, ballacooduna yahay 60 santi mitir. Baradhadaan waxa lagu beeraa qaybta taagan ee takaarida, amaba dhinacyada isku lidka ah ee takaarida. Biyaha waraabkana waxa loo ogolaadaa inay durduraan qaybta godan ee takaarida.
- ii. **Habka dhulka la isku simo (*Flat bed method*):** habka nuucan ah beerta waxa loo qaybiyaa qaybo isku siman oo dhulka agagaarkooda ahna ka koreeya. Qaybahani isku simana waa inay lahaadaan ballac iyo dherer isku mid ah. Waxana dhulkani isku siman laga dhexjeexaa takaariyo guntoodu aad u gaagaabanatahay, baradhadana takaariyadani ayaa lagu dhexbeeraa. Marka dalaggu soo wada biqlo ee geedahana dherekoodu gaadho 10-12 santi mitir waa in geedaha jiridooda carrada lagu tiiriyo.

Fogaanta la isku jirsiyo baradhada marka la beerayo

Dalagga baradhada oo la isku jirsiyo fogaan yar marka la beerayo waxay keentaa in dalagga iyo haramuhu ku tartamaan biyaha, nafaqada carrada iyo bootadaba (Space). Tanina waxay dhalisaa in dalaggu sifiican u kori waayo, islamarkaana waxsoosaarku yaraado. Dhanka kale dalagga marka la beerayo haddii fogaan badan la isku jirsiyo waxa kordha baradhada dhumucdeeda, laakiin waxa tanina ay yaraysaa waxsoosaarka hiktaarkiiba. Sidaas darteed haddii la rabo in la helo waxsoosaar fiican waa in fogaan dhexdhexaad ah la isku jirsiyo labadii geedba. Xilliga baradhadu ay samaynayo qaybteeda carrada ku jirta, rayska oo yaraada ama waraabka oon si joogto ah loo siin dalagga, waxay keentaa in baradhada carrada ku jirtaa dil-dilaacdo amaba dhexdeedu madhnaato. Fogaanta la isku jirsiinayo marka la beerayo waxay ku xidhanatahay dhumucda baradhada la beerayo sida ku cad shaxda 3.

Shaxda 3: Fogaanta baradhada la isku jirssiyo marka la beerayo

| Dhumuxda baradhada ee dhinaca dheer | Fogaanta la isku jirsiinayo (Xarriijin x gedka) |
|-------------------------------------|---|
| 2.5 -3.5 cm | 50 x 20 cm |
| 2.5-3.5 cm | 60 x15 cm |
| 3.5 -5.0 cm | 60 x 25 cm |
| 5.0 – 6.0 cm | 60 x 40 cm |

Carro nafaqaynata

Dalagga baradhadu waxa uu ka mid yahay kuwa xaalufiya nafaqada carrada, waxayna baradhadu u baahantahay nafaqo badan si loo helo waxsoosaar badan. Xaddiga nafaqada ee halkii hiktaar ee baradho ahba lagu dari karaa waa 10-15 tan (100- 150 kiintaal) oo diggo xoolaad ama komboosti ah, 100 kg N, 60 kg P₂O₅ iyo 100 kg K₂O.

Waraabka

Xaddiga biyaha ah ee baradhadu u baahanathay wuu badanyahay (500-600 mm).

Xilliyada dalagani ugu nugul yahaya biyo la'aantana waa:

- ✓ Waqtiga dalaggu uu biqilka yahay;
- ✓ Marka dalaggu uu samaynayo baradhada qaybeeta carrada ku dhexjirta;
- ✓ Marka baradhada qaybteeda carrada ku jirtaa ay aad u korayso.
- ✓ Waqtiga baradhadu bislaanshaha ku dhawdahay.

Carrda lagu tiiriyo jiridda dalagga baradhada

Baradhada qaybteeda dhulka hoostiisa ku jirtaa waa jirido isbadal ku dhacay, waxana muhiim ah in carrada lagu tiiriyo si ay si fiican ugu korto. Haddise baradhada carrada ku jirta aanan carro lagu tiirin, waxa dhici dhibaatooyinkan:

- ✓ Haddii baradhada carrada ku jirta ilayska qoraxda loo baneeyo, waxa ay yeelanayaan midab cagaaran; islamarkaana dhadhankoodu waxa uu noqdaa qadhaadh, waana khatar haddii la cuno;

- ✓ Sidoo kale baradhada qaybteeda carrada ku jirta waxay joojisaa samaynta istaarjiga, waxayan ahaanayaan kuwo aad u yaryar

Sidaas darteed, habka takaariyada marka la isticmaalo, waa in takaariyada gidaaradoodu dhulka ka sareeyaan 10-15 santi mitir, kadibna dalaggu marka uu jiro 30-35 maalmood ka dib beeritaanka waa in jiridiisa carrada lagu tiiriyo.

Xakamaynta haramaha

Haramuhu dhibaato badan ayuu ku hayaa dalagga baradhada, haddii aanan la xakamayna aad buu hoos ugu dhigaa waxsoosaarka baradhada. Habka ugu haboon ee beeralayda yaryari ay haramah ku xakamayn karaa waa iyagoo gacmaha ku gura, waxa kale oo ay ku xakamayn karaa haddii ay beerta xagaafaan. Xagaafidduna waxay jilcisaa carrada oo ay ka dhigtaa mid biyaha iyo hawaduba ay si fudud u gali karaan. Sidaas darteed, beerta oo marka ugu hooraysa ee la diyaarinaayo laga dhameeyo haramaha, lagauan xijisiyo haramayn iyo xagaafid marka carrada lagu tiirinayo jiridda baradhada 30-35 maalmood ka dib beeritaanka, waxay xakamaysaa haramaha. Balse marka beeraha baradhada laga beerayaa ay yihiin kuwo aad u waawayn, way adagtahay in lagu xakameeyo haramaha gacanta oo lagu guro amaba beerta oo la xagaafdo. Xaaladaha nuucan ahna wax haramaha lagu xakamayn karaa iyadoo la isticmaalo suntan haramaha disha (Shaxda 4).

Shaxda 4: Sumaha lagu xakameeyo haramaha waxyeela baradhada , xaddiga iyo xilliga la isticmaalo

| Nuuca suntan haramaha | Xaddiga lagu daro hiktaarkiiba (kg/ha) | Xilliga la isticmaalo |
|-----------------------|--|-----------------------|
| Fluchloralin | 0.7-1.0 | Beeritaanka ka hor |
| Atrazine | 0.3-0.5 | Soo biqlidda ka hor |
| Alachlor | 1.0-1.5 | Soo biqlidda ka hor |
| Metribuzin | 0.7-1.0 | Soo biqlidda ka hor |
| 2,4-D | 0.5 | Soo biqlidda ka hor |

Goosashada baradhada

Baradhada waxa lagu goostaa 90 ilaa 160 maalmood ka dib beeritaankeeda, tanina waxay ku xidhanathay nuuca baradhada, meesha laga beero iyo suuqa jira.

Waxsoosaar badan waxa inta badan laga helaa baradhada mudada dheeg ku bislaata. Mararka qaarkood, gaar ahaan dhulka leh hamadayga waxa baradhada la goostaa ka hor inta aanay dhamaystirin koritaankeeda (Jaantus 24).



Jaantus 24: Baradho diyaar u ah in la goosto

Hababka goosashada baradhadu way kala duwanyihiin, waxayna u dhaxeeyaan, gacanta oo lagu qodo baradhadana weel yar lagu ururiyo, iyo habka aadka casriga u ah ee isticmaala mashiinada baradhada iyo carrada kala saara islamarkaana ku gura buudhiyo loogu talo galay. Baradhada marka la goosanayo waa inay carradau rays leedahay, islamarkaana waa in heerkulku aanu ka badanayn 20°C Xaaladda nuucan ah haddii baradhada lagu goosto waxa yaraada dhaawaca gaadha baradhada marka la goosanayo, kaasi oo dhaca badanaa marka heerkulku qabw yahay, carraduna qallalan tahay.

Baradahda tayadeedu waxay aad ugu fiicantahay marka la goosto (Jaantus 25). Kaydinta baradahada la kaydinayaa waxay kordhisaa ama ka dhigtaa baradhada mid la heli karo muddo dheer. Haddiise baradahda meesha lagu kaydinayaa ay tahay mid si fiican loo habeeyey oo hawadu toos usoo gali karto uguna bixi karto, baradhada waxaa la kaydin karaa muddo dhan 10 bilood. Meesha lagu kaydinayo baradhada waxaa loogu talagalay inay yareeyaan biyo baxa baradhada ku dhacya, inay baradhada ka dhigaan mid aan si fudud ku qudhmin. Haddii baradhada meesha lagu kaydinayaa uu heerkulkeedu gaadho 2-4 °C, islamarkaana biyaha hawada ku jiraa yahay 90-95 boqolkiiba, muddo dheer baa baradhada la kaydin karaa.



Jaantus 25: Baradho loo diyaariyay in la suuq geeyo

3.9 BARBAROONI IYO QAJI (SWEET PEPPER AND HOT PEPPER)



Barbaroonida iyo qajida waa laba dalag oo aad iskugu eg, waxana ay ku kala duwanyihiin- barbaroonidu way waawayntahay mana laha kulayl badan, halka qajidu ay aad u yaryartahay, islamarkaana ay leedaya kulayl aad u badan oo afka guba marka la cuno.

Nafaqada ku jirta

Barbarooniga waxa la cunaa isagoon la karin, ama iyadoo la kariyay amaba la shiilay. Nafaqada ku jirtana waxa isbadal ku samayn kara hadba sida loo cuno. Waxa ku badan fiitamiinada C iyo A, waxa kale oo ay hodan ku yihiin macdanta kaalshiyam.

Asalka dalaggani

Barbarooniga waxa la aaminsanayhay inuu asalkiisu yahay Miksiko iyo Guwaatamaala, halka qajida uu asalkeedu yahay Qaaradda Koonfur Ameerika, gaar ahaan dalka Baraasiil.

Isticmaalka Barbaroonida iyo qajida:

1. Qajidu waxay badisaa xiisaha daku u hayo cunto cunidda, waxay kaloo wanaajisaa dhadhanka khudradaha la kariyo;
2. Qajida waxa kaloo laga sameeyaa inta sonkor lagu milo wax la kaydiyo;
3. Qajida marka la qalajo ee la tumo ayaa waxa laga sameeyaa budo, taasna waxa lagu daraa suugada ama cuntada;
4. Waxa kaloo lagu daraa maraqa, suugada la qasacadeeyo iyo iyadoo lagu cuno khudradaha qaarkood;
5. Barbarooniga waxa badanaa lagu dhexkariyaa khudradaha, gaar ahaan baradhda, waxayna hodan ku yihiin fiitamiin C;
6. Barbaroonida waxa loo isticmaalaa diyaarinta saladhka
7. Barbaroonida waxa kaloo la aaminsanyahay inay ku jirto walax xanuunka kansarka dadaka ka difaacda;
8. Qajidu waxa kale oo ay leedahay daawo, tusaale waxay dawaysaa ololka calaacalaha ku dhaca, waxa kale oo ay wax ka tartaa xasaasadda (caarood) jidhka.

Baayoolojiga barbarooniga iyo qajida

Barbarooniga (Sweet pepper): Waxay ka tirsanatay dhirta nuuca lo yaqaan Solonaase, waa dalag ku go'a in sand ka yar, dhererkeedu wuxuu gaadhaa ilaa 1.5 mitir. Xididadeedu way qota dheeryihiin, kuwaasi oo leh qaybto dhinacyada ku baxa.

Jiridda dalagani waxa ka farcama laamo kor u baxa amaba waxoogaa is ballaadhiya

Qajida (Chillies or hot pepper): Waa dalag dhareka geedkiisu gaadho 1.5, midhaha uu soo saaraa aad bay uga yaryar yihiin kuwa barabarooniga.

Cimilada iyo carrada dalaggani u baahanyahay

Qajida iyo barbarooniguba waa dalagyada baxa xilliyada kulaylaha ah. Waxa laga beerikaraa degaanada ku yaal dhul badhaha amaba dhulalka dhul badhe xigeenka ah, maadama ay degaano badan oo kala gadisan la qabsan karaan. Markaan eegno joogga dhulka, dalagani waxa uu ka bixi karaa badda agagaarkeeda ilaa dhulka joogiisu badda ka sarreeyo ilaa 1500 mitir. Dalaggani waxa uu ka bixi karaa dhulka hela roobab dhan 600 ilaa 1200 millimitir. Haddii xilliga dalaggu uu soosaaro khudrada uu da'o roob aad u wayni waxa uu keenaa in khudraddu qudhunto.

Dalaggani waxa uu u adkaysan karaa kulaylka iyo qabawga dhexdhexaadka ah balse uma adkaysan karo hamadayga. Dhirtu barbaroonida ama qajidu way dhimataa marka uu jiro heerkul aad u qabaw ama u kululi. Heerkulka ugu haboonina waa 20-25°C. Heerkulka ka sarreeya 30°C marka ay weheliso yaraan ay yar yihiin biyaha hawada ku jira (Humidity) waxay keentaa in dalaggu soo saaro khudrad aad u yar-yar oo qaabkooduna aanu fiicanayn.

Dalaggani waxa uu ka baxaa carro kasta oo biyo shub fiican leh. Carrada ugu haboon dalagganina waa carrada nafaqadeedu badantahay. Carrada niistu ku badantahay marka lagu daro qiyaas ku filan oo ah digada xoolaha ama komboosti, islamarkaana la siiyo waraab joogto ah, waxa laga beerikaraa qajida. Heerka pH ee carrada ee dalaggani ku habooni waa 6.0 ilaa 7.5. Digada xoolaha ama komboostiga carrada lagu daray waxa uu wanaajaa awoodda carradu u leedahay inay biyaha xajisato, iyo nafaqada dalaggu u baahanyahay. Carrada dalaggani laga beerayo waa inay milixdu ku yartahay.

Beeritaanka

Qajida iyo barbaroonidaba waxa laga beeraa midhahooda oo marka koowaad lagu beero goobta abaqaalka ka dibna lagu tallaalo beerta waxsoosaarka loogu talagalay. Waxa kaloo midhaha lagu beeraa saxarado leh qaybo yar oo carro ka buuxdo (Jaantus 26). Goobta abqaalka waa in midhaha lagu beero 6-8 toddobaad ka hor intaan abaqaalka lagu tallaalin beerta. Abaqaalka beerta waxsoosaarka loogu talo galay lagu tallaalay waa inuu lahaado xididdo si fiican carrada u qabsanaya, islamarkaana waa inaanu lahayn ubax iyo khudrad toona. Si dalagga looga ilaaliyo dhibta ka qabsanaysa marka beerta lagu tallaalo, waa in abaqaalka intaan beerta lagu tallaalin ka hor, laga daayo waraabka muddo, tani waxay keentaa in abaqaalku si fiican ula qabsado beerta. Dalagga waxa kale oo lagu beeri karaa iyadoo midhahiisa si toos ah beerta

waxsoosaarka loogu talo galay loogu beero, hase ahaatee habka nuucan ah waxsoosaarka ayaa yar, waqtiga dalagga lagu goosan karana waa mid badan.



Jaantus 26: Sanduuqyada leh godadka yayryar ee abaqaalka lagu kobciyo

Kobcinta qajida iyo barbarroonida lagu korinayo goobta abaqaalka

Goobta abaqaalka waa in si qota dheer loo qodaa lagana saaraa wixii ah hadhaa dhalag (crop residue) iyo dhagxaan. Dhulka waa in la isku simo loona qaybiyo qaybo ballacoodu yahay 1.5 m. Dhulkanina waa in korkiisa lagu shubo digo xoolaad ama komboosti islamarkaana carrada si fiican loo dhexgaliyo. Midhaha intaan lagu beerin goobta abaqaalka waa in lagu daweeyo sunta lagumagacaabo Captan oo budo ah, lana isticmaalo qiyaas dhan 2.5 giraam (g) halkii kiiloo garaam (kg) ee midho ahba. Midho dhan 1.5 ilaa 2 kg ayaa lagu kobciyaa goob abaqaal oo badkeedu yahay 250 m² si loo helo biqil yaryar oo lagu tallaalo dhul baaxadiisu dhanathay hal hiktaar. Ismarka midhaha carrada lagu ridaba waa in korka laga saaro lakab aad u yar oo ah digo ama komboosti la shaandheeyey, ka dibna biyo lagu rusheeyo si rays loo siiyo midhaha soo biqlaya. Waraabintuna waa inay ahaato maalin kasta inta midhuhu kasoo biqlayaan.

Tallaalidda qajida ama barabaronida

Marka abaqaalka qajida iyo barbaroonigu jiro 3-4 toddobaad, dhererkooduna yahay 10-15 santi mitir, taasi oo ku xidhan muddada ay qaadatay inay soo biqlaan, waxay diyaar u yihiin in lagu tallaalo beerta waxsoosaarka loogu talo galay. Si kastaba ha ahaatee, tallaalidda waa in la dhamaystiro marka abaqaalka da'diisu tahay 5 ilaa 7 toddobaad. Marka dalaggani la beerayo fogaanta la isku jirsiinayo labii geedba waa 30-60 santi mitir, halaka labadii xariijimoodba ay tahay in la isku jirsiiyo 45-60 santi mititir. Dalagga waxa lagu beeri karaa dhulku isku siman ama geerka taagan ee

takaariyada. Dalagga oo lagu beero geerka taagan ee takaariyada ayaa fiican (Jaantus 27) marka dalagga la beero xilliga roobku aad u badan yahay, gaar ahaan haddii carrada biyo shubkeedu aanu aad u badanayn, laakiin xilliyada kale waxa haboon in dalagga lagu beero dhulka isku siman. Xilliga ugu haboon maalintii in abaqaalka beerta lagu tallaalo waa galabtii.

Dalaggani waxa kaloo toos midhihiisa loogu beerikaaraa beerta iyadoon lagu kobcin goobta abaqaalka.. Habka nuucan ah 4-5 xabbo oo midho ah ayaa lagu ridaa halkii godba iyadoo la isku jirsiinayo fogaanta loo arko inay ku haboontahay degaanka wax laga beerayo. Midhuhuna waxay ku biqtaan 15-20 maalmood, marka biqilka dhererkiisu gaadho 10-15 santi mitir, ayaa dhirta la kala yareeyaa oo halkii godba lagu reebaa hal geed.



Jaantus 27: Qaji lagu beeray geerka takaariyada

Carro nafaqaynta

Inkastoo dalaggani aanay xididadiisu qota dheerayn, waxase dalaggani u baahanayahay nafaqo aad u badan, gaar ahaan marka dalaggu uu aadka u korayo, markaa ka dibna waxa loo baahanyahay in waxoogaa nafaqo ah carrada lagu daro. Dalaggan waxa kaloo aad wax ugu tara haddii lagu daro diggada xoolaha ama komboosti. Sabatoo ah waxay kordhiyaan biyo shubka iyo hawo dhexgalidda carrada dhoobayda ah. Carrooyinka fudfudud ee niistu ku badantahayna diggada ama komboostigu waxay carrada ka dhigtaa mid biyaha si fiican u xajisan karta.

Sidoo kale dalagga waxa lagu daraa carro nafaqeyayaasha aan orgaaniga ahayn ee warshaduhu soo sameeyaan, si kor loogu qaado tayada iyo xaddiga waxsoosaarka dalagga. Xaddiga carro nafaqeyayaasha ah ee beerta lagu darayaa waxay ku xidhanathay nafaqada carrada ku jirtaa inatay leegtahay, iyo xaddiga waxsoosaar ee beerta laga filayo.

Waraabka

Qajida iyo barbaroonidaba waxa lagu beeraa biyaha roobka ama waraab. Qajida ayaa aad ugu adkaysi badan oonka iyo biyo la'aanta marka loo eego barbarooniga. Si kastaba ha ahaatee, xaddiga waxsoosaarka ee beerta laga helayo waxa uu ku xidhan yahay hadana rayska carradu leedahay heerkiisa. Haddii beerta roob lagu beerayo, waa in roobku noqdo mid mudho dheer si xidhiidh ah u da'aya, islamarkaana aan si xoog ah u da'ayn. Marka dalagga la waraabinaayo, waraabku waa inuu noqdo joogto, lagana ilaaliyo inay carradu rays la'aan noqoto, si aanay dhirtu u daadin midhaha khudradda. Guud ahaan dalagga waxa la waraabiyaa 8 ilaa 9 jeer, taasi oo ku xidhan carrada nuuceeda, xaddiga roobka iyo baahsanaantiisa, heerkulka carrada iyo xaddiga hawada ee biyaha ku jira. Xilliyada dalaggani ugu nugul yahay biyo la'aantu waa: marka uu ubaxayanayo iyo marka uu samaynayo midhaha khudradda.

Xakamaynta haramaha

Si carrada gaar ahaan ta xididada agtoda looga dhigo mid jilicsan, loona wanaajo galintaanka hawadu galayso carrada, islamarkaana loo xakameeyo haramaha, waa in beerta si fudud loo xagaaf. Laba ilaa sadded jeer oo beerta la xagaaf iyo hal mar oo gacanta lagu haramaeyo ayaa beerta ka dhamayn kara haramaha.

Goosashada

Marka la rabo in midho khudradeed daray ah (cusub) oo suuqa la geeyo la helo, waa in gacanta lagu guraa, gacan ku guridda ayaana ah habka dalaggani lagu goosto degaanka Soomaalida Itoobiya. Iyadoo ku xidhan nuuca qajida iyo barbarooniga, iyo heerka khudradda lagu goosto, waxa dalaggani lagu goosan kara 60-90 maalmood ka dib maalinta abaqaalka beerta lagu tallaalo. Barbaroonida iyo qajidu waxay diyaar u yihiin goosasho: marka khudraddu yeelato midab aad u dhalaalaya, khudraddu noqoto mid adag, marka la diisiyo ka dibna ku soo noqda qaabkii ay lahaayeen diisinta ka hor (Jaantus 28). Qajida iyo barbarooniga marka khudradda laga goosto, wax yar ka dib waxay soosaaraan khudrada kale.



Jaantus 28: Qaji iyo barbarooni bislaaday

Maaraynta khudradda marka la goosto ka dib

Islamarka khudradda qajida iyo barbarooniga laga soo jaro beerta waa in biyo lagu dhex rido si uu uga baxo kulaylka beertu. Haddiise khudradda marka biyaha laga dhexsaaro aanan laga engejin biyaha ku korhadha waxay keentaa inay waxyaalaha cuduradda keena ku dhashaan oo khudradda xumeeyaan. Sidoo kale waxa khudradda lagu dhex ridi karaa dareere ay koloriin ku jirto (10%), tanina waxay mdhaha ka sifaysaa waxyaalaha fangaska loo yaqaanee khudradda qudhmiya. Hddii aanan khudradda lagu dhexridin dareerahan koloriinta leh waxa kor u kici kara 50% cuddurada fangasku keeno ee dalaggani ku dhaca. Khudradda qajida iyo barbaroonigu uma adkaysan karaan qabawga, sidaas darteed waa inaan lagu kaydin meel heerkulkeedu ka hooseeyo 14 °C. Haddii khudradda lagu kaydiyo meel heerkulkeedu u dhexeeyo 14-17 °C, huurkuna yahaya 90-95%, waxa dalaggani la kaydin karaa 2-3 toddobaad. Sidoo kale khudradda cagaaran marka lagu buufiyo kimikada loo yaqaan Itayliin, waxay u badali kartaa cassan.

3.10 TOONTA (*GARLIC*)



Jaantus 29: Badhida toonta

Asalka toonta

Toontu waa mid ka mid ah dalagyada badhida leh (jaantus 29). Waxa la sheegay in dalaggan asalkiisu yahay badhtamaha Aasiya iyo wadamada ku xeeran Badda Cad. Dalaggani waxa aad loogu isticmaalaa xawaash ahaan. Wadamada dalagagni toonta aadka u soosaaraa waa: Shiinaha, Turkiga, Hindiya, Maraynkanka, Filibiin, Isbayn, Taylaandi, Kuuriya, Masar, Talyaaniga iyo Faransiiska. Dalaggani waxa ku jirta walax loo yaqaan Allin oo midab iyo ur toona lahayn oo dishana waxyaalah ili ma aragtayada ah ee cudurada keena.

Baayoolojiga toonta

Waa dalag geedihiisu aanu aad u dheerayn, kana tirsan dhirta lagu magacaabo afka qalaad *Alliaceae*, bahda *Allium* qaybta loo yaqaan *sativum*. Dalaggani waxa uu ku bislaadaa in sanad ka yar. Badhida toonta middiiba waxay ka koobanathay 10-20 lakab o yaryar.

Isticmaalka toonta

1. Toonta waxa lagu daraa waxayaalaha la shiilayo am xawaashyada badidood, waxa kale oo laga sameeyaa dawooyin badan;
2. Baarka ama caleemaha toonta waxa lagu daraa cuntoyinka ay cunaan dadka hilibka ka caagani;
3. Badhida toonta waxa lagu udgiyaa cuntooyin badan, waxa kaloo lagu daraa hilibka marka la rabo in muddo dheer la kaydiyo;
4. Saliidda laga miiro toonta waxa lagu daraa marka la diyaarinaayo hilibka, suugada, maraqa iyo cuntooyinka qasacadaysan;

5. Toontu waxay caawisaa inay calooshu cuntada si fiican u shiiddo, waxa kaloo ay inaga difaacdaa cudurada ay keenaan bakteeriyadu;
6. Toontu waxay yaraysaa xannunada wadnaha ku dhaca, waxa kaloo ay dawaysaa cudurada ku dhaca kaadi haysta iyo beerka;
7. Laba xabbo oo toon ah oo maalinkasta la qaataa waxay yaraysaa gabawga, waxa kale oo ay ka hortagtaa gaastariga ku dhaca midhicirada;
8. Waxa kale oo toontu ay wax u tartaa dadka cuntada ku mamani inay cuntada iska yareeyaan, dadka cabudhka leh ee sanku xidhmo, qufaca iyo roomaatiismaka;
9. Laba ilaa saddex`xabbo oo toon ah oo shaah laga dhigo ciddii cabta hal koob maalintiiba waxay ka yaraysaa dhibaataada neefta;
10. Sharaabka laga sameeyo toontu waxa uu yareeyaa qufaca, waxa kale oo uu wax ka taraa qabawga;
11. Dheecaanka laga miiro toonta waxa loo isticmaalaa in cayayaanka lagu eryo;
12. Toonta dheecaankeeda waxa laga sameeyaa xamag (koollo) isku dhajisa quruuradaha, sidoo kale xamagta nuucan ah marka quruurad ama muraayad lagu kor fidiyo, waxa suurawda in muraayadda daldaloollo loo yeelo.
13. Toonta waxa laga soo saaraa walxo laga sameeyo sunta cayayaanka disha.

Cimilada iyo carrada dalaggani u baahnyahay

Dalaggani toonta waxa laga beeri karaa degaanno badan oo cimiladoodu kala duwanathay. Dalaggani uma adkaysan karo cimilada aadka u kulul ama u qabaw, waxa dalaggani jecelyahay heerkul dhexdhexaad ah. Heerkulka ugu haboon ee dalaggani u baahnyahay marka uu korayo iyo marka uu badhida soo saarayaba waa 13 to 24° C , waana in huurka hawadu noqdo 60 ilaa 70 %.

Dalaggani toontu waxa uu soosaaraa waxsoosaar badan marka carrada laga beerayaa ay leedahay nafaqo badan, islamarkaana carradu leedahay xaddi badan oo ah waxyaalaha orgaaniga ah. Carroyinka fudud ayaana dalaggan u fiican. Carrooyinka calculus ee dhoobadu aadka ugu badantahay uma fiicna dalagan, sababtoo ah waxay carqalad ku noqdaan sidii ay badhida toontu u samaysmi lahayd, waxa kaloo dhib noqda sidii toonta loo goosan lahaa. Carrada ugu fiican waa in pH keedu noqdo 5 ilaa 7.

Beeritaanka toonta

Toonta marka la beerayo waxa la isticmaalaa qaybaha yaryar ee badhida ka kobanathay, laakiin waa in la xusho kuwa caafimaadka qaba ee aanan lahayn wax cuduro ah, islamarkaana aanan lahayn wax dhaawac ah.

Diyaarinta dhulka

Beerta la rabo in toonta lagu beero waa in 2-3 jeer la qodo, ka dibna dhulka si fiica la iskugu simo, lagana dhigo mid jilicsan oo biyaha iyo hawaduba si fiican u gali karaan.

Hababka beeritaanka toonta iyo xaddiga midhaha abuurka ee loo baahanayhay

Toonta waxa lagu beeraa geerarka takaariyada amaba dhul isku siman oo waxaogaa laga yara saraysiiyo dhulka agagaarkiisa ah. Hase ahaatee waxa fiican in dalaggani lagu beero dhul isku siman. Dhulka isku siman ee lagu beerayo toonka waxa laga sameeyaa takaariyo dhuudhuuban, kuwaasi oo lagu rido badhida toonta.

Dalagga toonta waxa la beeraa badhida oo qaybaheeda yaryar loo kala saaray. Badhida toontu waxay ka koobanatahay ilaa 10 qaybood oo yaryar kuwaas oo ah kuwa loo isticmaalo beeritaanka. Abuur ahaan waxa u noqon kara halkii hiktaarba 300 ilaa 500 kg. Baaxadda dhulka ee uu u baahanyahay halkii geed ee toon ahina waa 50 m².

Carro nafaqayanta

Marka dhulka la diyaarinaayo waa in carrada lagu daro digo ama komboosti. Xaddiga carro nafaqeyayaasha ah ee beerta lagu darayaa waxay ku xidhantahay carrada nafaqadeedu siday tahay iyo xaddiga waxsoosaarka ee beerta laga filanayo. Si kastaba ha ahaatee, nafaqada fosfooras oo dhan, kala badh nafaqada naytarojiin iyo botaashiyam waxa lagu daraa marka beerta la beerayo, halka kalabadhka soo hadayna lagu daro beerta 45 maalmood kadib marka dalagga la beero.

Waraabka

Waraabka ugu horreeya waxa dalagga la siiyaa islamarka dalagga la beeraba, si dalaggu u biqlo. Beerta oo la waraabiyo 10-14 kii maalmoodba mar waxay kordhisaa waxsoosaarka dalagga. Dalaggu marka uu ku sii dhawaado xilliga bislaanshaha waa

in muddada la waraabinaayo ay noqoto 16 kii maalmoodba mar, goosashada waxyar ka horna waa in beerta waraabka laga joojo.

Xakamaynta haramaha

Beerta oo marka dalaggu aadka u yarayahay la xagaafo mar ama laba jeer waxay sababataa in dalaggu si fiican u koro. Laakiin marka uu dalaggu aad u koro xagaafaynta toontu aad bay u adkaataa, sababtoo ah waxa xagaafintu qoontaa dalagga. Haramaha waxa lagu xakamayn karaa in gacanta lagu guro ama in la xagaafo beerta. Balse haddii beertu ay aad u ballaadhantahay, waxa lagu buufin karaa sunta haramaha disha. Sumaha la isticmaali karaa waa Oxadaizon qiyaas dhan 0.75 kg/ha, Fluchloralin qiyaas dhan 0.9 kg/ha iyo Alachlor qiyaas dhan 2.0 kg/ha. Sumahanina waxa la isticmaali karaa ka hor inta aanu dalaggu soo biqlin.

Goosashada dalagga

Guud ahaan, dalagga toonta waxa lagu goostaa 130-150 maalmood ka dib marka dalagga la beero, tanina waxay ku xidhanatahay xaaladda cimilda, nuuca toonta iyo carrada nuuceeda. Dalaggani toonta waxa lagoostaa marka caleemuhu yeeshaan hurdi ama ay caleentu isku ururto ama qalasho. Dalagga marka la goosanayo waa la fujaa Badhida toonta, marka la goosto ka dib waa in 7-10 maalmood lagu qalajaa meel hoos leh.

Kaydinta toonta

Habka ugu caan san ee toonta loo kaydiyaa waa in 15 ilaa 25 xabbo oo toon ah la isku xidhaa oo laga soo laalaadiyaa qol hawo leh. Habka nuucan ahna waxa lagu kaydin karaa muddo dheer. Muddo aad u dheer baa badhida toonta la kaydinkaraa haddii lagu hayo meel heerkulkeedu yahay 0.0°C to 1.6°C, huurkeeduna yahay 65 ilaa 75%. Marka toonta lagu kaydinayo meel heerkulkeedu qabawyahay, badhida toonta oo laga jaray caleemaha ayaa waxa lagu ridaa sakhaarado, ama kabdadho nadiif ah.

3.11 BASAL BAARTA (*LEEK*)

Basalbaartu waa dalag ka tirsan dalagyada la isku yidhaa Lily, waxana loo beertaa caleemahaeda iyo jirideeda. Jirijeedu way buuranatahay. Dalaggan waxa uu dhererkiisu gaadhaa 0.5 ilaa 0.75 santimitir, waxana uu leeyahay caleemo midabkoodu yahay buluug cagaaran (Jaantus 30). Jiridda dalagan ee la goostaa waxa dhererkeedu yahay 10 ilaa 15 santimitir, dhumucdeeduna waa 2.5 santimitir, hase ahaatee jiriddu intan way ka buuraan kartaa mararka qaarkood.



Jaantus 30: basalbaar

Cimilada iyo carrada dalaggani u baahanayhay

Dalagga basalbaartu waa dalagyada ka baxa degaanada cimiladoodu qabaga tahay. Heerkulka ugu fiican ee dalaggani u baahanayhay marka la beerayo waa 13° to 24°C. Dalaggani waxa laga beeraa degaanno cimiladoodu aad u kala duwantahay marka loo eego basasha. Dalaggani basalbaarku waxa uu u baahanayhay carro qota dheer, lehna waxoogaa dhoobo ah balse biyo shub fiican, Carradu waa inay lahaato pH dhan 6.5 ilaa 7. Si kastaba ha ahaatee basalbaarta waxa laga beeri karaa degaanada carradoodu aanay aad u qota dheereyn, pH kooduna hooseeyo, niistuna ku badantahay, balse qaabdhismeedkeedu fiicanyahay. Carrooyinka aadka u culculus ee dhoobadu ku badanathay dalaggani uma fiicna, sababtoo ah carradani waxay waxyeeshaa tayada dalaggan. Carraada dhoobayda ahi waxay ku dhagtaa jiridda basalbaarta, taniaan waxay yaraysaa qiimaha dalaggani ka galaayo suuqa. Dalaggani basalbaarka

carrooyinka laga beero marka lagu daro digada xoolaha ama komboosti dhan 25 tan (250 kiintaal) hiktaarkiiba, gaar ahaan carrooyinka niistu ku badantahay waxa kor u kaca waxsoosaarka tiro iyo tayo ahaanba. Digada iyo komboostigana waa in beerta lagu daro dhawr bilood ka hor intaan dalagga la beerin, si ay si fiican carrada u dhexgalaan.

Diyaarinta dhulka

Dhul diyarinta waxa looga jeedaa in beerta laga dhigo mid haramaan lahayn, carraduna noqoto mid jilicsan oo biyaha iyo hawaduba si fudud u gali karaan. Beertana waxa lagu qodi karaa daaweyaasha cagaftu jiiddo ama marashada dibidu jiiddo, waana in dhawr jeer beerta la qodo intaan midhaha lagu ridin ka hor. Dhanka kale haddii ay suugal noqoto waa in beerta intaan midhaha lagu ridin ka hor lagu sii buufiyo sunta disha cayayaanada iyo waxyaalaha cudurada keena ee carro ku noolka ah.

Beeritaanka

Dalaggani basalbaarka waxa si toos ah midhahiisa loogu beeraa beerta. Xaddiga midhaha ee la isticmaali karo si loo beero hal hiktaar oo dhul ahi waa 1.5 ilaa 3 kg. Marka la beerayo dalaggani basalbaarta waa in fogaan haboon la isku jirsiiyo, sidoo kale dhamaan geedaha oo dhami waa inay isku jiraan fogaan isku mid ah. Midhaha basalbaarta ee beerta toos loogu beerayaa waxay soo saaraan dhir jiridaheedu dhuudhuuban yihiin marka loo eego jiridaha basalbaarta abaqaalkeeda beerta lagu tallaalo, sababtuna waa-marka midhaha basalbaarta beerta lagu beerayo aad carrada looma sii dhexgaliyo. Si dhibaatan looga baxana, marka midhaha basalbaarta toos beerta loogu beerayo, waa in beerta loo yeelo takaariyo qotatoodu tahay 15 santi mitir kadibana midhaha dhexda takaariyada lagu beero, markay waxoogaa dalaggu koraana carrada dhinacyada lagaga soo tiiriyo jiridda basalbaarta. Tani waxay kordhisaa dhumucda jiridaha.

Basalbaarta waxa kale oo midhihiisa lagu beeraa goobta abaqaalka, ka dibna waxa lagu tallaala beerta waxsoosaarka loogu talagalay. Tani waxay yaraysaa

xaddiga midhaha abuurka (shinnida) ee loo baahanyahay, iyo muddadada dalaggu u baahanayhay inuu ku bislaadaba. Dhanka kale dhawr waraab oo loo baahanyahay haddii midhaha toos loogu beero beerta ayaa laga maarmayaa haddii midhaha lagu biqliyo marka hore goobta abaqaalka kadibna lagu tallaalo beerta waxsoosaarka loogu talo galay. Abaqaalka waxa lagu tallaalaa beerta waxsoosaarka loogu talo galay marka dhererkoodu yahay 12.5 ilaa 15 santi mitir, islamarkaana dhumucda jiriddu tahay 7 ilaa 8 millimitir, ama 8 ilaa 10 todobaad ka dib maalinta midhaha lagu beero goobta abaqaalka. Dalagga basalbaarta waxa lagu beeraa takaariyo qotadoodu tahay 15 santi mitir, labadii takaarina waa inay isku jiraan fogaan dhan 30 ilaa 50 santimitir, labadii geedna waa inay isku jiraan 10 ilaa 15 santimitir. Dalaggu marka uu waxoogaa koro waa in jiridiisa lagu kuuso carro, tani waxay jiridda ka dhigtaa mid cad oo midab fiican leh, sidoo kale waxay jiridaha ka dhigtaa kuwa jilicsan oo aad ugu haboon cunitaanka. Carrada lagu tiirinayo jiridda waa inaan la samayn marka dalaggu uu yaryahay sababtoo ah tani waxay keentaa in jiriddu qudhunto.

Waraabka

Dalagga basalbaarta ee marka la beerayo midhaha si toos ah carrada loogu beero, waa in islamarka midhaha carrada lagu ridaba la siiyo waraab fudud. Waraab isdabajoog ah oo fudud waa in dalagga la siiyo ilaa dalaggu soo saaro xididdo fiican oo biyaha dhulka hoose uga soo qaadi kara.. Ilaa dalaggu carrada si fiican xididadiisu u qabsadaan waa inaan la ogalaan inay carrada kori qallasho.

Dalagga basalbaarta marka abaqaalkiisa beerta lagu tallaalayo waa inay carradu noqotaa mid rays leh, islamarka biqilka carrada lagu ridana waa in beerta la waraabiyo. Xaddiga biyaha ah iyo mudada beerta la waraabinayo waxay ku xidhanatahay xaalladda cimilada ee jirta, nuuca carrada iyo heerka uu bixitaanka dalaggu marayo. Dalaggani biyaha waraabka waxa loo raaciyaa takaariyada.

Carro nafaqaynta

Dalaggani basalbaartu wuxuu u baahanayhay xaddi nafaqo oo u dhaw ka ay basashu u baahantahay. Celcelis ahaan nafaqada dalaggani u baahanayahay waa 130 kg oo Naytarojiin, 30 kg oo fosfooras ah iyo 60 kg oo Botaashiyam ah hiktaarkiiba .

Waxa kaloo fiican in dhulka marka la diyaarinaayo lagu daro digada xoolaha ama komboosti. Habka ugu haboon ee lagu ogaan karo xaddiga nafaqada ah ee dalaggani u baahanayahay waa in marka koowaad carrada la baadho ka hor intaan dalagga la beerin. Carrada baadhista waxa lagu samaynkaraa shaybaadhka baadhidda carrada ee magaalada Jigjiga.

Goosashada dalagga

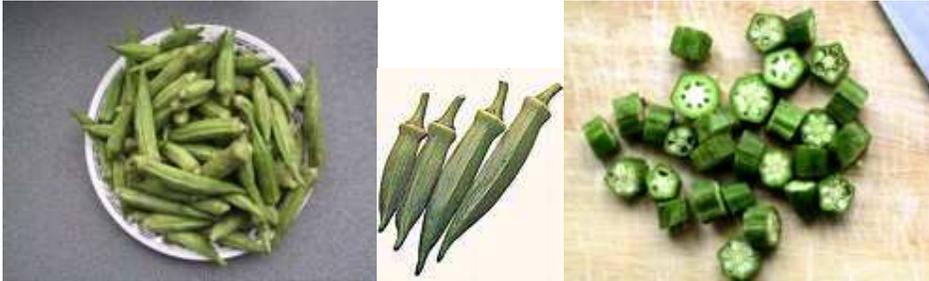
Dalagga basalbaarka ee marka la beerayo la isticmaalay midho si toos ah carrada loogu beeray, dalaggani waxa uu ku bislaadaa oo lagu goosan karaa muddo dhan lix bilood. Laakiin marka basalbaarku tahay mid biqilkeeda lagu kobciyay goobta abaqaalka ka hor intaan beerta lagu beerin, waxa dalagga nuucaas ahi ku bislaadaa 16 ilaa 18 toddobaad. Dalaggani basalbaarka waa in la goosto islamarka uu bislaadaba, balse haddii ay lagama maarmaan noqoto, marka uu bislaado kadib muddo dheer ayaa beerta lagu dayn karaa.

Dalagga basalbaarka marka lagoosanayo waxa la rujiyaa jiridadaha marka dhumucdoodu tahay 2.5 santimitir. Hase ahaatee basalbaarta looma rujin karo sida basasha oo kale maadama basalbaartu leedahay xididdo dhaadheer. Sidaas darteed waa in xididka hoosta laga qodo si fujintiisu u fududaato. Jiridda qaybteeda carrada ku jirta ee cad waa in dharekeedu noqdo 10 ilaa 15 santimitir. Caleemha iyo xididadaba waa in laga jaro basalbaarta.. kadibna jiridaha waxa la iskugu xidhaa shantii xababa meel iyadoo la isticmaalyo xadhko (Jaantus 31). Waxana lagu qaadaa marka la dhoofinayo saxarado amaba haddii ay suurawdo kartoono.



Jaantus 31: Basalbaar suuq gayn loo diyaariyay

3.12 BAAMIYE (OKRA)



Jaantus 32: Baamiye

Dalagga baamiyuhu waa mid ka mid ah khudradaha ugu muhiimsan. Waxana dalagani si fiican uga bixi karaa meelaha leh roobab ku filan ama waraab.

Isticmaalka baamiya

- ✓ Khudradda jilicsan ee baamiyaha (Jaantus 32) waxa la kariyaa kalidood ama waxaa lagu dhexkariyaa baradhada;



Jaantus 33: Khudradda baamiyaha oo lagu dhexkariyay khudrad kale

- ✓ Khudradda jilicsan ee baamiya waxa la cunaa iyagoon la karin, waxayn ka hortagaan calool istaagga;

- ✓ Baamiyuhu waxa loo isticmaalaa daawo ahaan sida:
 - Waxay u fiicanatahay dadka dhagxaantu ku samaysmaan kalyahooda;
 - Xididada baamiyaha marka inta la engejo la tumo oo budo laga dhigo ayaa sonkor lagu daraa, waxana isticmaala dumarka dabar xanuunka leh (*leucorrhoea backbone*);
 - Khudradda baamiyaha waxa ku badan macdanta aayodhiinta, taasi oo daawo ka ah cududrka qoorta bararriya (*goiter*),.
- ✓ Xididda baamiyaha inta la jarjaro ayaa biyo lagu radiyaa, biyahaasina waxa isticmaala warshadaha sonkorta si loogu sifeeyo sonkorta cas;
- ✓ Saliidda laga miiro midhaha baamiyaha khudraddiisa ku dhex jira, waxa loo isticmaalaa in lagu iidaamo saladhka (asalaatada). Hadhaaga saliiddana waxa la siiyaa xoolaha si loogu naaxiyo.

Carrada iyo cimilada dalaggani u baahanayhay

Dalaggani baamiyuhu waa dalagyada si fiican uga baxa degaanada ku yaal dhulbadhaha iyo agagaarkiisa. Dalaggani waxa uu si aad u fiican u baxaa xilliga roobka (3 ilaa 4 jeer in kabadan inta uu xagaaga baxo) marka loo eego xagaaga. Dalagani waxa uu aad ugu nugul yahay hamadayga iyo qabwga daranba. Heerkulka ugu haboon ee midhaha dalaggani ku soo biqlaani waa 20° C, haddii heerkulku ka hooseeyo 20° C midhaha baamiyuhu ma soo biqlaan. Dalaggani waxa uu u baahanayhay carro fudud oo niistu ku badantahay.

Diyaarinta dhulka

Dhulka lagu beerayo dalaggani baamiyaha carradiisa waa in si fiican loo jilciyo si biyaha iyo hawaduba si fudud ugu gali karaan. Sidoo kale dhulku waa inuu leeyahay biyoshub fiican.

Beeritaanka iyo farsamaynta midhaha intaan la beerin ka hor (Propagation and seed treatment)

Dalagga baamiya marka la beerayo, midhaha ayaa si toos ah carrada loogu ridaa. Midhaha baamiyuhu waxay leeyihiin qolof adag oo qarawayn, marka la beerana muddo dheer bay midhahani ku qaadataa inay biqlaan sababtoo ah biyaha ayaanan ka gudbayn qolofa adage ee midhaha ku daboolan. Sidaas darteed waa in midhahani la

farsameeyo beeritaanka ka hor. Farsamaynta midhuhu waxay keentaa in midhuhu muddo yar ku biqlaan. Habka midhaha loo farsameeyo waa:

- ✓ Midhaha waa in biyo lagu radiyo muddo dhan 24 ilaa 36 saacadood, ka dibna waa in midhaha laga saaro biyaha, laguna engejo meel hadh ah;
- ✓ Midhaha intaan la beerin ka hor, waa in lagu qaso sumaha fangaska dila ee lagu magacaabo Cerasan ama Thiram qiyaas dhan 2 giraam, halkii kiiloo giraam ee midho ahba;
- ✓ Midhaha waa in lagu hayo meel heerkulkeedu yahay 40°C muddo dhan afar maalmood.

Habka loo beero baamiya iyo fogaanta la isku jirsiiyo marka la beerayo

Dalaggani baamiyaha waxa lagu beeri karaa takaariyo ama dhul la isku simay. Laakiin xilliga roobku badanyahay waa in dalaggani lagu beero taagagga takaariyada, si aanan biyaha fadhiisanaya takarida salkeedu aanay dalagga u waxyeellin.

Marka la beerayo dalagga baamiyaha waa in labadii geedba la isku jirsiiyo 30 santimitir, halka labadii xariijimoodba fogaanta la isku jirsiinayaa tahay 45 santimitir. Meelaha hela roob aad u fiican ama waraab la isku hallayn karo waa in fogaanta la isku jirsiinayaa labadii geedba noqotaa 45 santimitir, labadii xariijimoodna waa in la isku jirsiiyaa 60 santimitir. Xaddiga midhaha abuurka (shinida) ah ee halkii hiktaar ee dhul ahi u baahanyahay waa 15 ilaa 20 kg.

Nafaqaynta carrada

Qiyaasta nafaqada ee beerta lagu darayaa waxay ku xidhantahay xaddiga nafaqada ee carradu leedahay. Si kasta ha ahaatee, carrada nafaqada ku jirtaa dhexdhexaad tahay, waa in 12 ilaa 15 maalmood ka hor intaan dalagga la beerin lagu daro 10-15 tan oo digada xoolaha ama komboosti ah. Xaddiga carro nafaqeyayaasha warshaduhu sameeyaan ee dalagga lagu dari karaa waa 50 Kg N, 50 Kg P₂O₅ iyo 50 kg K₂O.

Waraabka

Haddii carradu rays leedahay marka ugu horaysa ee dalagga la beerayo, waraabka ugu horreeya waxa dalagga la siin karaa islamarka midhaha carrada lagu rido waxyar ka dib. Tani waxay fududaysaa sidii ay midhuhu dhakhso ugu biqli lahaayeen. Dalagga

baamiyuhu si uu dhakhso ugu baxo, islamarkaana midhaha khudradda u soosaaro, waraabka waa in la siiyo dalagga 5 ilaa 8 dii maalmoodba mar. Laakiin xilli roobaadka dalaggu uma baahna waraab. Haddii uu roobku muddo kala go'o waa in dalagga markaasi la waraabiyo.

Xakamaynta haramaha

Beerta oo haramaha laga dhameeyo, waxay muhiim u tahay in dalaggu si fiican u baxo. Haddaba si haramaha loo xakameeyo, waa in beerta la xagaafo laba ama saddex jeer. Meelaha shaqaale yaraantu jirto xagaafidda beertu waa qaali, sidaas darteedna waxa la isticmaali karaa sunta haramaha disha. Sumaha haramaha dila ee carrada lagu daadiyo ama buufiyo intaan dalagga la beerin waa: Fluchloralin qiyaas dhan 1.5 kg /hiktaarkiiba, Alachlor qiyaas dhan 1.5 kg /hiktaarkiiba ama Pendimetnalin qiyaas dhan 0.75 kg /hiktaarkiiba ka dib marka midhaha abuurka carrada lagu rido.

Goosashada baamiyaha

Dalaggani baamiyaha waxa uu ku bislaadaa muddo dhan 90 ilaa 100 maalmood. Khudradiisana waxa la jaraa 3-4 goor oo isku xigxiga, maadaama midhaha khudradda oo dhami aanay hal mar wada bislaan.

3.13 MIDAADIS (SWEET POTATO)



Jaantus 34: Midaadis

Dalaggani midaadiska waxa laga beeraa dhamaan degaamada dhul badhaha iyo inta ku xeeranba. Midaadisku waxsoosaarkiisu aad buu u badanayahay waxana uu ku bislaadaa muddo gaaban. Dalaggani waxa ku badan fiitamiinta C. Dalaggan waxa la cunaa waa xididadiisa buurburan, midabka xididada la cunaana aad bay u kala duwanayihiin (Jaantus 34).

Koonfuta Ameerika ayaa asal u ah dalaggani midaadiska, ka dibna waxa uu dalaggani u sii gudbay Boortaqiiska, Hindiya iyo Shiinaha, waqtigan xaadirka ahna wadamo badan oo dalkani Itoobiya ka mid yahay ayaa laga beera.

Isticmaalka midaadiska:

- ✓ Dalaggani midaadiska xididadiisa waxa loo isticmaalaa khudrad ahaan iyadoo la karinayo ama la shiilayo (tanina waxay kordhisa xaddiga sonkorta ee ku jirta)..
- ✓ Midaadiska marka la cuno waxa uu jidhka siiyaa tamar badan;
- ✓ Dalaggan xididadiisa waxa ku badan walaxda kaarotiin ee fiitamiin A du ka samaysanto iyo fiitamiin C;
- ✓ Daqiiqda laga sameeyo midaadiska oo lagu daray 50 ilaa 75% oo ah daqiiq qamadi ayaa waxa lag sameeyaa furun.
- ✓ Caleemaha iyo laamaha jiljilicsan ee midaadisku waxa ku badan borotiinka waxa lagu quudiyaa xoolaha.

Cimilada iyo carrada dalaggani u baahanyahay

Dalaggani midaadisku waxa uu u baahanyahay cimilo waxoogaa yara diiran (20 to 27°C). Heerkulka ka hooseeya 10°C waxa uu hoos u dhigaa bixitaanka dalagga iyo samaysanka xididadiisa la cuno. Dalaggani uma adkaysto hamadayga iyo biyaha beerta ku fadhiista toona.

Dalagga midaadisku waxa uu u baahanyahay carro fudud oo biyo shub fiican leh, islamarkaana carradiisa si fiican loo qodi karo. Carrooyinka culculisi waxay hoos u dhigaan xaddiga waxsoosaarka tiro iyo tayo ahaanba.

Beeritaanka iyo maaraynta beerta

Beeritaanka midaadiska (Raising of planting material)

Dalagga midaadiska waxa la beeraa qaybo laga jaro laamaha, waxana jira laba hab oo loo diyaariyo laamaha la beerayo sida hoos ku cad:

- ✓ Midaadiska marka la goosto oo laamihiisa inta la jaro lagu beero goobta abaqaalka (Vine to vine): Laamahani lagu koriyay goobta abaqaalka ayaa markay xididaystaan la qaadaa oo beerta lagu beeraa.
- ✓ Xididada oo lagu beero goobta abaqaalaka (Tuber to vine) la iskuna jirssinayo 60 x 25 santimitir. Xididdadana waa in carrada la galiyo 5 ilaa 10 santimitir. Xididdadana waxa ay ku beeraanayaan goobta abaqaalka 90 ilaa 120 maalmood. Ka dibna waxa lagu tallaalaa beerta:

Laamaha midaadiska ee la beerayo waa laamaha ugu sarreeya geedka qaybtooda badhtanka ah. Haddii xididada midaaska la beerayo waa in muddo dhan laba maalmood la dhigaa meel hadh ah. Laamahana waa in sidoo kale laba maalmood meel hadh ah la dhigaa intaan la beerin ka hor.

Diyaarinta dhulka iyo habka beeritaanka

Dhulka loo diyaarinaayo in laga beero midaadiska, waa in sifiican loo qodo 10-15 santimitir ee carrada kore. Beertana waa in laga dhameeyo haramaha ka hor intaan la beerin.

Midaadiska waxa loo beeraa saddex hab, kuwaasi oo kala ah:

- ✓ **Iyadoo lagu beero geerka taagan ee takaarida (Planting on ridges):** xilli roobaadka midaadiska waxa lagu beeraa taagga takaarida. Habka nuucan ahi waxa uu fududeeyaa in biyaha dheeriga ahi beerta dhaafaan. Sidoo kale dalaggani uma adkaysto biyaha dhulka ku joogsada.
- ✓ **Iyadoo lagu beero midaadiska dhul isku siman (Planting on flat bed):** haddii aanu dhulku ahayn mid biyo fadhiisi leh, waxa hanoon in dhulka wax laga beerayo la isku simo islamarkaana laga yara-saraysiiyo dhulka agagaarkiisa ah;

Fogaanta la isku jirsiinayo dalagga marka la beerayo

Qurubyada laamaha midaadiska ee la beerayo waxa la isku jirsiiyaa fogaan dhan 15 ilaa 30 santimitir, labadii xariijimoodna waa in la isku jirsiyo 30 ilaa 60 santimitir. Dhererka qurubyada laamaha ee beeritaanka loo isticmaalayaa waxay u dhaxeeyaan 20 ilaa 40 santimitir. Qurubyada laamaha marka la beerayo waa in labada cidhifba ama hal cidhif carro lagu qarin.

Carro nafaqaynta

Midaadisku waxa uu u baahanayhay nafaqo aad u badan maadaama uu waxsoosaarka dalaggani aad u badanayhay. Carrada waxa lagu darikaraa nafaqada orgaaniga ah sida digada xoolaha ama komboostiga, ama nafaqada warshaduhu sameeyaan. Digada xoolaha ama komboosti dhan 5 ilaa 10 tan (50 ilaa 100 kiintaal) oo beerta lagu daro marka dhulka la diyaarinaayo waxay aad ugu fiicantahay inay xididada dalaggu si fiican u baxan. Xaddiga nafaqada carrada ee warshaduhu sameeyaan ee beerta midaadiska lagu dari karaa waa: 50-75 kg N hiktaarkiiba, taasi oo ah in beerta loogu daro laba qaybood oo isleeg, 25-50 kg P2O5 iyo 50-75 kg K2O hiktaarkiiba.

Waraabka

Dalaggani midaadsku uma adkaysan karo rays la'aanta. Xilliyada dalaggani aadka ugu nugulyahay rays la'aantu waa: marka dalaggu uu bilaabo smaynta xididada waawayn een cunno.

Xakamaynta haramaha

Dalaggani midaadiska laamihiisu si aad ah bay dhulka iskugu fidiyaan, sidaas daraadeed beerta waa la xagaafi karaa xilliyada hore ee aanu dalaggu aad u dagaagin (fidin). Xagaafidda ugu horaysa waxa beerta lagu sameeyaa 30 maalmood ka dib maalinta dalagga la beero, xagaafidda labaadna waxa loo baahanayhay 70 ilaa 75 maalmood ka dib beeritaanka dalagga. Xilliga labaad marka beerta la xagaafayo waa in dalagga lagu tiiriyo carro, gaar ahaan dalagga laga beeray taagga takaariyada.

Xakaafiddu waxay xakamaysaa haramaha. Hase ahaatee meelaha aan haramaha lagu xakamayn karin xagaafid, amaba aanay dhaqaale ahaan isbixinayn, haramaha waxaa lagu xakamaynayaa iyadoo la isticmaalo sunta haramaha disha oo ay ka mdi yihiin Eptam qiyaas dhan 3 kg hiktaarkiiba, Prolamine qiyaas dhan.4 kg hiktaarkiiba ka hor beeritaanka dalagga, ama d Methodachlor qiyaas dhan0.75 kg hiktaarkiiba ka dib beeritaanka dalagga.

Goosashada dalagga

Islamarka caleemaha midaadiska midabkoodu isku badalo hurdi, carrada u dhaw jiridda geedkuna bilawdo inay dildilaacdo, waa in la bilaabo xilligaas goosashada

dalagga. Dalaggani midaadisku waxa uu ku bislaadaa 120 ilaa 160 maalmood, taasi oo ku xidhan nuuca dalagga midaadiska, xaaladda cimilada, iyo xaaladda carradaba.