



## **Birta iron ee ku jirata Biyaha Ceelka**

Qaar ka mid ah carrada iyo dhagaxa Minnesota ayaa waxay ka koobanyihiin macdano ay ku badantahay birta iron. Marka roobku da'o ama barafku uu dhalaalo oogada dhulka oo ay biyuhu dhex maraan ciidda birta iyo dhagaxa leh, birta iron waxay ku milmi kartaa biyaha. Xaaladaha qaarkood, birta iron waxay sidoo kale ka iman kartaa daxalka birta ama birta daasadda ceelka ama tuubooyinka biyaha. Si la mid ah sida birta ku jirta baaldiga birta ah ay isugu beddesho miridhku marka ay soo gaaraan biyaha iyo ogsajiintu, macdanta birta iron ee biyuhu waxay u beddeshaa miridh iyo midabayn tuubooyinka iyo dharka.

## **Birta iron waxay caawin kartaa in ay nooleyaal kale abuurmaan/koraan.**

Birta iron ee ku jirta biyuhu inta badan ka keento dhibaato caafimaad. Jirkaagu wuxuu u baahantahay iron si uu dhiiga ugu kala gudbiyo jirka. Inta ugu badan ee iron waxay ka timaadaa cuntada, maadaama oo uuna jirtku si fudud iron uga soo qaadan karin biyaha.

Birta iron waxay keeni kartaa welwel caafimaad haddii bakteeriyaha halis ahi ay ceelka soo gashay. Nooleyaasha ili ma qabatayga ah qaarkood ayaa waxay u baahanyihiin birta iron si ay u koraan Haddii ay birta iron ku jirto biyaha, waxaa laga yaabaa in ay adkaato in bakteeriyada halista ah laga saaro biyaha

## **Sida loo ogaado/ looga helo birta iron**

### **Dhadhanka**

Birta iron waxay biyaha ka dhigi kartaa in ay u dhadhamaan sida birta oo waxay saamayn kartaa sida ay cuntada iyo cabitaanadu u dhadhamaan.

### **Midabka**

Birta Iron ee ku jirta waxay:

- Waxay ku sababi kartaa heerheer/midabayn jaalle, casaan, ama bunnii ah suxuunta, dhanka la dhaqay, iyo qalabka tuubada biyaha.
- Waxay shaaha ku keeni kartaa midab dahaara oo qaanso roobaad khafiif ah.
- Waxay u beddeli karaan baradhada madow

### **Gufaynta/xirida**

Birta iron waxay gufayn kartaa ceelasha, baamka, rusheeyayaasha cawska, weel dhaqayaasha, iyo aaladaha kale wakhti kadib.

## Ka baaritaanka birta iron

Biyaha midabkoodu noqday jaalle ama guduud waxay inta badan tilmaan fiican u tahay in ay ku jirto birta iron. Si kastaba ha ahaatee, shaybaarka ayaa kuu sheegi kara qadarka saxda ah ee birta iron, taas oo waxtar u yeelan karta go'aaminta nooca daaweynta ugu fiican. Marka lagu daro baaritaanka birta iron, waxay ku caawin kartaa in la tijaabiyo adkaanta, pH, u adkaysiga asiidh noqoshada (alkalinity), iyo bakteeriyada birta iron.

*Qodobka tixraaca: Biyaha leh heerka birta iron ee ka sarreeya 0.3 milligaraam litirkiiba (mg/L) ayaa badanaa loo arkaa in la diido. Heerarka birta iron ee ku jirta biyuhu waxay inta badan ka hoosaysaa 10 mg/L.*

Waxda Caafimaadka ee Minnesota waxay ku talinaysaa inaad isticmaasho shaybaare la aqoonsan yahay in ay baaritaan ku sameeyaan biyahaaga. La xiriir shaybaar la aqoonsan yahay si aad u hesho weel muunad lagu soo qaado iyo tilmaamo, ama weydii adeegyada deegaanka ama caafimaadka ee degmadaada in ay bixiyaan adeegyo baarista ceelasha.

[Raadi shaybaarada La aqoonsan yahay ee Minnesota ee Aqbalada Muunadaha ay mulkiilayaashu kasoo qaadaan Ceelka Gaarka loo leeyahay \[PDF\]](#)  
([www.health.state.mn.us/communities/environment/water/docs/wells/waterquality/labmap.pdf](http://www.health.state.mn.us/communities/environment/water/docs/wells/waterquality/labmap.pdf)) (keliya waxaa lagu heli karaa Ingiriisi wakhtigan).

## Xakamaynta Birta Iron

**Ku daaweynta biyaha guriga ayaa ah** habka ugu caansan ee lagu xakameynayo birta iron ee biyaha ku jirta. Waxaad soo iibsana kartaa oo aad adigu rakibi kartaa unug daawaynta, ama waxaad la shaqayn kartaa khabiirka daaweynta biyaha. Haddii aad la shaqayso xirfadlaha daawaynta, hubi inay yihiin qandaraasle biyo cimilaynta oo shati haysta adiga oo isticmaalaya [Diiwaanka Fiirinta Shatiga ee Waaxda Shagada iyo Warshadaha ee Minnesota](#) (<https://www.dli.mn.gov/license-and-registration-lookup>) (kaliya waxaa lagu heli karaa Ingiriisi wakhtigan). Iyadoo ku xiran xaaladaha, fursadaha kale waxaa ka mid noqon kara:

- **Isticmaalka ilo kale oo biyo ah** oo ay birta iron ku yar tahay, sida nidaamka biyaha dadweynaha ama ceelka biyaha ka soo dhaansashada ceel biyaha qaaab kale u soo jiita.
- **Ceel Cusub.** Maskaxda ku hay in ay adag tahay in la saadaaliyo sida ay noqon doonto xaddiyada birta iron ee ku jirta ceelka cusub. Ceelasha dariska ayaa laga yaabaa inay kuu yihiin tilmaame, laakiin waxa laga yaabaa in birta iron ee ku jirta labada ceel ee isu dhow ay aad u kala duwanaato. Guud ahaan, ceelasha gunta dhow ayaa waxay leeyihiin birta iron oo ku yar laakiin waxa laga yaabaa inay aad ugu nugul yihiin wasakhawga Nitrate ama kiimikooyinka.

## Daaweynta Biyaha

Si wax ku ool ah in loo daweyno birta iron ayaawaxay ku xirantahay qaabka (yada) birta iron ee ku jirta, kiimikada biyaha, iyo nooca ceelka iyo nidaamka biyaha. Way fiicantahay in lala shaqeeyo khabiir ku takhasusay daaweynta biyaha si loo helo xalka ugu fiican.

## Noocyada birta iron

- **Birta Ferrous iron ("birta iron ee biyaha cad"):** Biyuhu waxay ka soo baxaan tuubada iyadoo nadiif ah laakiin waxay isu beddelaan casaan ama bunnii ka dib markay istaagaan.

- **Birta ferric iron ("birta biyaha cas"):** Biyuhu waa casaan ama huruud marka ugu horaysa ee ay ka soo baxaan tuubada.
- **Birta iron oo dabiici/orgaanik ah:** Inta badan waa jaalle ama bunni ama waxay noqon kartaa mid aan midab lahayn. Ceelasha aan aadka u dheerayn ama ceelasha ay saameeyaan biyaha dusha dhulku waxay aad ugaga dhow yihiin ceelasha kale inay yeeshaan birta iron ee dabiiciga ah.

## Daawaynta Birta Ferrous (Biyaha Cad)

**Jilciyeyaasha biyaha iyo filtarrada birta** (sida filtarrada manganese greensand) ayaa wax ku ool u ah inay meesha ka saaraan birta iron ee biyaha saafiga ah. Jilciyeyaasha biyaha ayaa ah habka ugu caansan. Warshadaha qalabka sameeyaa waxay sheegaan in ay jilciyeyaasha biyaha qaarkood ah ka saari karaan ilaa 10 mg/L. Si kastaba ahaaate, 2 ilaa 5 mg/L ayaa ah xadka inta badan. Filtarka manganese greensand wuxuu waxtar u yeelan karaa heerarka gaarsiisan ilaa 10 ilaa 15 mg/L.

Jilciyaha biyuhu wuxuu biyaha ka saaraa macdanaha adag sida kaalsiyaam iyo magnasiyam. Birta iron waxay xiri doontaa jilciyaha waana in si xilliyadiiba mar ah looga saaraa iyadoo dib loo dhaqayo. Jilciyaha biyuhu wuu yarayn doonaa waxtarka haddii ay jiraan adkaanta biyaha oo hoosaysa iyo birta iron oo ku badan ama haddii nidaamku u ogolaado in uu taabto hawada, sida taangiga cadaadiska taangiga cadaadiska ee la xoojiyey ("galvanized pressure tank.")

Okssaydheynta kiimikada iyadoo la isticmaalayo koloriin ama hydrogen peroxide iyo ku sifaynta filtarka ayaa sidoo kale la isticmaalaa. Si kastaba ha ahaatee, cabirka dooska saxda ah ayaa waxay noqon kartaa mid adag oo waxay wadataa khataro caafimaad haddii uu cabbirka doosku khaldamo.

## Daawaynta Birta Ferric (Biyaha Cas)

- **Filtarada birta iron** (sida filtarka manganese greensand) ayaa ah daawaynta caadiga ah ee heerarka birta iron cas ee ilaa 10-15 mg/L.
- **Hawo-qaadista/laydhinta (hawo lagu duro)** ama oksaydheynta kiimikada (badanaa ku darida koloriinta oo qaabka kaalsiyaam ah ama sodium hypochlorite) oo ay ku xigto ku sifaynta filtarka ayaa ah fursad haddii heerarka birta iron ay ka badan yihiin 10 mg/L.
- **Filtarka lakabyada fadhiya**, filtarka kaarboonka, ama jilciyeyaasha biyaha ayaa ka saari kara xaddi yar oo birta iron ah, laakiin birta iron ayaa si dhakhso ah u gufayn doonta nidaamka.

## Daawaynta birta iron ee Orgaanik-ga/Dabiiciga ah

Birta dabiiciga ah iyo tannins waxay abuuri karaan caqabado dhanka daawaynta ah. Birta iron ee dabiiciga ah iyo tannins- waxay yarayn karaan ama ka hortagi karaan oksaydhaynta birta birta, markaa jilciyaasha biyaha, nidaamyada hawada, iyo filtarrada birta iron ayaa laga yaabaa in aysan si fiican u shaqayn. **Oksaydhaynta kiimikada oo ay ku xigto sifaynta** ayaa noqon karta fursad.

**Xareedint/sifaynta (distillation) ama reverse osmosis** ayaa ka saari kara nooc kasta oo birta ah. Haddii ay ku jirto birta iron oo badan biyaha, waxay si dhakhso ah u xiri kartaa unyada, markaa nidaamka daawaynta oo guriga oo dhan ah ayaa laga yaabaa inuu ka fiicnaado.

## Bakteeriyada birta iron iyo daaweynta ceelka

Bakteeriyada iron waa noole cuna birta iron si uu u noolaado. Habkaas inta uu ku jiro, waxay sameeyaan kayd birta iron ah iyo dhoobo casaan ama bunni ah oo loo yaqaan "biofilm." Nooluhu ma aha mid waxyeello u leh bini'aadamka, laakiin waxay sii xumayn karaan dhibaataada birta iron. Noolaha ayaa si dabiici ah loogu heli karaa carrada inta dhow iyo biyaha dhulka hoostiisa ku jira, waxaana laga yaabaa in lagu soo daro ceelka ama nidaamka biyaha marka la dhiso ama la dayactirayo.

Wax dheeraad ah ka baro sida looga hortago, looga saaro, iyo loogu daweyo bakteeriyada Birta iron Bakteeriyada Birta Iron ee Ceelka Biyaha

([www.health.state.mn.us/communities/environment/water/wells/waterquality/ironbacteria.html](http://www.health.state.mn.us/communities/environment/water/wells/waterquality/ironbacteria.html)) (keliya waxaa lagu heli karaa Ingiriis wakhtigan).

## Biyaha ceelkayga miyaan ka baaraa wax aan ahayn birta ayroonta ahayn?

Haa. Ilaaha dabiiciga ah iyo hawlaha bani'aadamka labaduba waxay wasakhayn karaan biyaha ceelka waxayna sababi karaan saamayn caafimaad oo muddo gaaban ama mid dheer. Tijaabinta biyaha ceelkaagu waa habka kaliya ee loogu ogaan karo inta badan wasakhooyinka caadiga ah ee ku jira biyaha dhulka hoose ee Minnesota; ma dhadhamin kartid, ma arki kartid, mana urin kartid inta badan wasakheeyeyaasha. Waaxda Caafimaadka ee Minnesota waxay ku talinaysaa in laga baaro:

- **Bakteeriyada Coliform** sannad kasta iyo wakhti kasta oo biyuhu isbeddelaan dhadhanka, urta, ama muuqaalka. Bakteeriyada Coliform waxay tilmaami kartaa in jeermiska cudurada keenaa ay ku jiraan biyahaaga.  
Eeg ka Badbaadida Bakteeriyada ku jirta Biyaha Ceelka  
([www.health.state.mn.us/communities/environment/water/docs/wells/waterquality/bacteriasom.pdf](http://www.health.state.mn.us/communities/environment/water/docs/wells/waterquality/bacteriasom.pdf)).
- **Nitrate in laga baaro sanad walba.** Dhallaanka dhalada lagu quudiyo ee ka yar lix bilood waxay halis ugu jiraan inay saameeyaan heerarka nitrate-ka ee ka sarreeya 10 milligaraam litirkii ee ku jira biyaha la cabbo.  
Ka eeg Nitrite ku jirta Biyaha Ceelka  
([www.health.state.mn.us/communities/environment/water/docs/wells/waterquality/nitratesom.pdf](http://www.health.state.mn.us/communities/environment/water/docs/wells/waterquality/nitratesom.pdf)).
- **Arsenik ugu yaraan hal mar.** Qiyaastii 40 boqolkiiba ceelasha Minnesota waxaa biyaha ku jira arsenik. Cabitaanka biyaha leh arsenik muddo dheer waxay gacan ka geysan karaan hoos u dhaca garaadka carruurta iyo kordhinta khatarta kansarka, sonkorowga, cudurrada wadnaha, iyo dhibaatooyinka maqaarka ee dadka waaweyn.  
Eeg Arsenik ku jirta Biyaha Ceelka  
([www.health.state.mn.us/communities/environment/water/docs/wells/waterquality/arsenicson.pdf](http://www.health.state.mn.us/communities/environment/water/docs/wells/waterquality/arsenicson.pdf)).
- **Macdanta Lead ugu yaraan hal mar.** Ceelka iyo nidaamka biyuhu waxay yeelan karaan qaybo ay ku jiraan liidh/sunta rasaastu, oo liidh/sunta rasaastu waxay geli kartaa biyaha la cabbo. Sunta rasaastu waxay dhaawici kartaa maskaxda, kelyaha, iyo habdhiska dareenka. Sunta rasaastu waxa kale oo ay hoos u dhigi kartaa korriinka ama waxa ay

sababi kartaa dhibaatooyinka waxbarashada, hab dhaqanka, iyo maqalka.

Ka eeg Liidhka/Sunta Rasaasta ee ku jirta Biyaha Ceelka

([www.health.state.mn.us/communities/environment/water/docs/wells/waterquality/leadsom.pdf](http://www.health.state.mn.us/communities/environment/water/docs/wells/waterquality/leadsom.pdf)).

- **Manganiis ka hor inta uusan ilmuhu cabin biyaha.** Heerarka sareeya ee manganiis ayaa waxay sababi karaan dhibaatooyinka dhanka xusuusta, dareenka, iyo xirfadaha dhaqdhaqaaqa muruqyada. Waxaa kale oo ay dhallaanka iyo carruurta u keeni kartaa dhibaatooyinka waxbarashada iyo hab dhaqanka.

Ka eeg Manganiis-ka ku jirta Biyaha la cabbo

([www.health.state.mn.us/communities/environment/water/contaminants/manganese.html](http://www.health.state.mn.us/communities/environment/water/contaminants/manganese.html)) (kaliya waxaa lagu heli karaa Ingiriisi wakhtigan).

Wasakheeyayaasha kale ayaa mararka qaarkood ku jira goobaha biyaha ee gaarka loo leeyahay, laakiin in ka yar wasakheeyayaasha kor ku taxan. Tixgeli in aad ka baartaan:

- **Isku-dhafka Kiimikooyinka Dabiiciga ah ee Sida Fudud Hawada u Raaca** haddii ceelku u dhow yahay haamaha shidaalka ama goob ganacsi ama warshadeed.
- **Kiimikooyinka beeraha ee sida caadiga ah looga isticmaalo aagga** haddii ceelku gaaban yahay oo u dhow yahay beeraha laga beero dalaga ama meelaha lagu maamulo kiimikooyinka beeraha ama uu ku yaal aagga juqraafiga nugul (sida dhagax nuuradeed jajaban).
- **Fluoride** haddii carruurta ama dhallinyaradu ay cabbaan biyaha.

Si aad macluumaadkan ugu hesho qaab kale, soo wac 651-201-4600.  
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