

Cov tshuaj Ntsev Nitrate Nyob hauv cov dej haus

Cov tshuaj ntsev nitrate yog cov tshuaj sib tov es tshwm sim yam thas mab xaj thiab yeej muaj ntau qhov es yog tib neeg tsim tawm. Cov tshuaj ntsev nitrate muaj nyob rau hauv tej cov pas dej, cov dej ntws, thiab cov dej nyob hauv av hauv lub xeev Minnesota. Koj saj los tsis paub, tsis pom, los yog hnia los tsis tsw cov tshuaj ntsev nitrate nyob hauv koj cov dej. Haus cov dej muaj cov tshuaj ntsev nitrate ntau kuj yuav muaj kev phom sij rau kev noj qab nyob zoo – tshwj xeeb yog rau cov menyuam mos ab.

Kev phom sij rau kev noj qab haus huv

Haus tau cov tshuaj ntsev nitrate ntau heev muaj kev cuam tshuam rau qhov cov ntshav nqus tau cov pa oxygen thiab yuav ua rau cov ntsav nqus tsis tau cov pa cua oxygen hu ua methemoglobinemia (ib lub npe hu ua blue baby syndrome). Cov menyuam mos ab muaj hnuv nyoog qis dua li rau lub hlis es noj raj mis muaj kev phom sij siab dua txog qhov es tau txais tus mob ua rau cov ntsav nqus tsis tau cov pa cua oxygen hu ua methemoglobinemia. Qhov mob ua rau cov tawv nqaij tig ua xim xiav tsawm tsawv thiab, yuav ua rau muaj mob nyhav los yog tuag taus. Lwm qhov yam ntxwv mob es muaj feem xyuam nrog cov ntsav nqus tsis tau cov pa cua oxygen hu ua methemoglobinemia muaj xws li cov ntshav dhia qeeb, ua rau lub plawv dhia ceev, mob taub hau, plab khov, thiab ntuav.¹ Cov yam ntxwv mob hauv qab no kuj ua tau tib neeg muaj kev phom sij loj thaum cov tshuaj ntsev nitrate nov ua rau cov ntshav nqus tau cov pa oxygen thiab yuav ua rau cov ntsav nqus tsis tau cov pa cua oxygen hu ua methemoglobinemia: ntshav tsis txaus, kab mob plawv, kab mob ntsws, kab mob sepsis, tsis muaj ntshav liab txaus glucose-6-phosphate-dehydrogenase, thiab tej yam teeb meem ntsig txog lub cev nruab nrog metabolic problems.²

Tsuas yog cov pov thawj tshawb fawb scientific nyuam qhuav muaj nov tawm los kuaj txog qhov es tsis zoo ntawm cov dej haus es muaj cov ntshav nitrate siab rau cov neeg laus. Muaj ib co ntawv sau tawm ntau qhia txog qhov kev cuam tshuam thaum raug cov ntsev nitrate/nitrite thiab lwm yam kev noj qab haus huv rau

lub cev xws li lub plawv dhia ceev zog, xeev siab, mob taub hau, thiab tu leeg ntawm plab. Tej co kev tshawb fawb kuj hais qhia tias muaj kev phom sij ntxiv rau qhov kab mob khees xaws, tshwj xeeb yog hom khees xaws gastric cancer, muaj feem xyuam nrog noj tau cov tshuaj ntsev nitrate/nitrite, tabsis tseem tsis tau muaj kev pom zoo los ntawm kev tshawb fawb scientific txog kab lus nug no.

Yuav tiv thaiv koj tus kheej thiab koj tsev neeg lis cas

Tus qauv ntawm lub chaw U.S. Environmental Protection Agency (EPA) rau cov dej haus es muaj cov tshuaj ntsev nitrate ntau li 10 milligrams ntawm cov tshuaj ntsev nitrate (muab luj li yog nitrogen) tauj ib liter ntawm cov dej haus (mg/L).^{*} Cov dej haus es muaj cov tshuaj ntsev nitrate qis dua li 10 (mg/L) ntawm cov tshuaj ntsev nitrate yeej muab xam tias puaj phais rau txhua tus.

^{*}1 milligram tauj ib liter (mg/L) yeej ntau ib yam li 1 feem thaum 1 million

Yog tias koj muaj ib lub qhov dej khawb ntawm koj tus kheej

Hom qhov dej khawb hauv qab no yog cov es muaj cov tshuaj ntsev tsuas tau rau, tshwj xeeb yog tias koj nyob ze cov thawv ntiv quav los yog ze thaj av ua liaj ua teb:

- Cov qhov dej khawb ntiav ntiav
- Cov qhov dej khawb es muaj dej xuab zeb
- Khawb qhov dej es muaj tus kav dej es dej nkag mus tau.

¹ Agency for Toxic Substances and Disease Registry (ATSDR). 2015. ToxFAQs™ for Nitrate and Nitrite (<http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=1186&tid=258>). Nkag mus rau Lub Kaum Hli 2016.

² ATSDR. 2013. ATSDR Case Studies in Environmental Medicine Nitrate/Nitrite Toxicity (http://www.atsdr.cdc.gov/csem/nitrate_2013/docs/nitrite.pdf). Nplooj 37. Nkag mus rau Lub Kaum Hli 2016.

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- Lub qhov dej khawb es puas los yog tus kav dej xau dej los yog xau dej ntawm qhov cov kav dej sib dhos.

Tiv Thaiv kev tsuas tsis huv

- **Khawb koj lub qhov dej kom nyob rau ib qho chaw puaj phais.** Saib *lub vas sab txog Tiv Thaiv Koj Lub Qhov Dej kom paub kuaj xyuas*.
- **Ceev kom tej yam ua kom muaj cov tshuaj ntsev nitrate kom deb ntawm koj lub qhov dej khawb.** Tej yam es ua rau muaj cov nov yog cov chiv rau av, lub thawv ntim quav, thiab tsiaj cov quav. (Saib *qhov Tiv Thaiv Koj Lub Qhov Dej kom paub kuaj xyuas*).
- **Kuaj xyuas koj lub qhov dej tas mus li seb puas muaj tej qhov es puas lawm.** (Saib *qhov Tiv Thaiv Koj Lub Qhov Dej khawb*). Tiv tauj tus neeg muaj daim ntawv tso cai rau khawb qhov dej yog tias koj lub qhov dej khawb puas (Saib *Daim ntawv teev cov npe muaj daim ntawv pov thawj khawb qhov dej*).
- **Kuaj txhua xyoo seb puas muaj tshuaj ntsev nitrate.** Koj yog tus lav phib xaub kuaj koj cov dej hauv koj lub qhov dej tas mus li. Minnesota Department of Health MDH tau hais tias xav kom koj siv cov chaw kuaj kom muaj ntaub ntawv pov thawj los kuaj koj cov dej (saib *qhov Tshawb nrhiav cov chaw muaj daim ntawv pov thawj kuaj dej*). Tiv tauj ib lub chaw es muaj ntaub ntawv pov thawj kom tau lub thawv thiab cov ntaub ntawv cob qhia kom paub kuaj, los yog nug koj lub zos county es pab rau faim kev noj qab haus huv rau pej zeem seb lawv puas muaj kev pab kuaj cov qhov dej khawb.

Yuav ua li cas daws qhov teeb meem dej tsuas tsis huv no

Yog tias nrhiav pom tias muaj ntsev nitrate nyob hauv koj cov dej, tej zaum kuj muaj lwm yam tsuas rau hauv cov dej thiab. Yog tias nrhiav pom tias muaj ntsev nitrate nyob hauv koj cov dej es siab tshaj 10 mg/L, ua raws nraim li cov kauj ruam nov:

- **Nrhiav cov dej haus los ntawm ib qho chaw kom puaj phais,** xws li yuav cov kaus poom dej. Nov yog ib qho tseem ceeb tshwj xeeb rau cov menyuum mos ab hnuv nyoog qis tshaj rau lub hlis es haus cov dej los yog siv cov dej tov mis. Muab cov dej rhaub kuj yog ib qho tsis puaj pais thiab; muab dej rhaub yuav ua rau haj yam muaj tshuaj ntsev nitrate.
- **Hais kom ib tug neeg muaj daim ntawv pov thawj khawb qhov dej kuaj koj lub qhov dej.**

- **Nrhiav thiab tshem tawm tej yam es ua rau muaj cov ntsev nitrate** tsuas tsis huv ntawm koj qhov chaw. (Saib *vas sab txog Tiv Thaiv Koj Lub Qhov Dej kom paub kuaj xyuas*).
- **Cov cuab yeej tua cov kab mob ntawm cov dej siv hauv lub tsev kuj yog ib qho kev xaiv ua tau thiab.** Yog tias koj twb tau ua cov kauj ruam kom txo los yog tshem tag nrho tej yam ntxim li tsim cov tshuaj ntsev nitrate lawm, ib tug neeg muaj daim ntawv pov thawj khawb qhov dej tuaj kuaj tag thiab txiav txim tias nws yeej ua tau hauj lwm zoo lawm, thiab tsis pub cov mos ab es muaj hnuv nyoog qis tshaj rau lub hlis haus cov dej.

Yog tias koj siv cov dej es tsoom fww tso tuaj rau koj

Koj cov dej es tsoom fww tso tuaj rau koj haus mas yeej raug kuaj seb puas muaj tshuaj ntsev nitrate thiab kom paub tseeb tias qhov muaj siab ntawd yuav tsum poob rau qhov EPA tus qauv teev tseg. Koj yeej nrhiav pom tias muaj tshuaj ntsev nitrate siab npaum cas es kuaj tau rau cov dej tsoom fww tso tuaj ntawm thaj chaw koj nyog es yog nyeem daim ntawv qhia tawm txog cov dej es huv npaum cas (ib lub npe ntawm daim ntawv qhia tawm hu ua Consumer Confidence Report [CCR]). Hu rau koj lub chaw tso dej tuaj rau koj siv kom tau daim qauv ntawm daim ntawv qhia tawm hu ua CCR los yog nrhiav hauv online (saib daim ntawv *Consumer Confidence Report*). Yog tias koj xav nrhiav kom pom cov tshuaj ntsev seb siab npaum cas ntawm ib qho chaw es tsis yog hauv koj lub tsev, tiv tauj qhov chaw es tso dej tuaj rau qhov chaw ntawd.

Qhia txog qhov keeb kwm

Cov tshuaj ntsev Nitrate tshwm sim yam thas mab xaj thiab muaj nyob rau tej zaub noj tabsis tsis muaj siab es yeej puaj phais rau lub cev (zaub xws li spinach thiab zaub ntug hauv paus) thiab tshwm sim los ntawm tej zaub es lwj. Cov tshuaj ntsev Nitrate mas muaj nyob rau ntau hom chiv es siv rau nram qab vag tsib taug, lub ntiaj ntaus golf, thiab cov qoob loo. Lwm yam tshuaj ntsev Nitrate kuj muaj los ntawm cov qhov thaus dej thiab tsiaj cov quav.

Cov tshuaj ntsev Nitrate ntawm thas mab xaj hauv lub xeev Minnesota muaj nyob rau cov dej hauv av mas feem ntau yeej muaj qis qis xwb (qis tshaj li 3 milligrams per liter [mg/L]). Txawm li ntawd los, tej yam es ua rau muaj cov tshuaj ntsev Nitrate xws li cov chiv, tsiaj cov

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quav, los yog tib neeg cov quav yang mus rau cov qhov thaus mas muaj nyob ze rau npoo av, cov tshuaj ntsev Nitrate xau mus rau hauv cov dej thiab tsuas cov dej. Qhov es muaj cov tshuaj ntsev Nitrate siab hauv cov dej kuj yog los ntawm siv cov chiv es xau mus rau hauv av, muab cov dej tsis huv pov tseg, chaw pov kib nyiab, qhov chaw tsiaj ncig uasi noj zaub, lub thawv ntim quav, los yog cov qhov thaus nyob hauv nroog.

Cov tshuaj ntsev Nitrate hauv Minnesota cov dej

Cov tshuaj ntsev nitrate yeej nrhiav pom tias muaj nyob rau cov dej hauv av thiab sab saum npoo dej rau ntau qhov chaw hauv Minnesota. Siv daim av thiab qhov es cov dej ntwms mus los hauv qab thu av muaj kev cuam tshuam rau qhov es muaj cov tshuaj ntsev nitrate siab thiab qis.

Muaj li ntawm 4 paws xees ntawm cov qhov dej tshau muaj cov tshuaj ntsev nitrate siab li 3 mg/L hauv lub xeev Minnesota. Thaum es 3 mg/L muaj tsawg tshaj li cov qauv ntawm EPA, nws qhia tau tias tej yam es tib neeg tsim ua rau muaj tshuaj ntsev nitrate los mus tsuas rau cov dej thiab muaj siab ntxiv tuaj thaum lub sij hawm dhau mus zuz.

Lub tuam tsev saib xyuas kev kuaj dej Minnesota Department of Agriculture Township Testing Program pom tau tias muaj ntau li 10 paws xees ntawm cov qhov dej ntawm ntiag tug tau kuaj hauv tej lub zos hauv southwestern, southeastern, central, thiab north-central Minnesota muaj cov ntsev nitrate siab tshaj 10 mg/L.

Lub chaw tswj kev tsuas tsis huv hu ua Minnesota Pollution Control Agency nrhiav pom tias 27 percent ntawm cov dej saum npoo dej kuaj tau tias muaj tshuaj ntsev nitrate siab tshaj 10 mg/L. Yav qab teb hauv lub xeev Minnesota muaj tshuaj ntsev nitrate siab tshaj plaws ntawm cov npoo dej (saib *Daim ntawv qhia txog Nitrogen saum npoo dej*).

Ntau li 20 xyoo dhau los no, ob peb qhov chaw tso dej ntawm tsoom fww hauv Minnesota tau kuaj pom tias muaj tshuaj ntsev nitrate siab tshaj 10 mg/L hauv cov dej es twb siv tshuaj tua lawm; lawv yeej raus tes los daws qhov teeb meem no. Saib Tshuaj ntsev Nitrate hauv cov dej tsoom fww tso tuaj hu ua Nitrate in community water systems: qhov tseeb thiab cov lej figures thiab MDH daim ntawv qhia txhua xyoo txog tiv thaiv cov dej haus kom paub ntau dua.

Cov ntaub ntawv qhia

- [Daim ntawv qhia hu ua Consumer Confidence Reports \(www.health.state.mn.us/ccr\)](http://www.health.state.mn.us/ccr)
- [Daim ntawv qhia txhua xyoo txog tiv thaiv dej haus hu ua Drinking Water Protection Annual Reports \(www.health.state.mn.us/communities/environment/water/dwar\)](http://www.health.state.mn.us/communities/environment/water/dwar)
- [Tua Kab Mob ntawm cov dej siv hauv tsev hu ua Home Water Treatment \(www.health.state.mn.us/communities/environment/water/factsheet/hometreatment\)](http://www.health.state.mn.us/communities/environment/water/factsheet/hometreatment)
- [Daim ntawv teev cov npe muaj daim ntawv pov thawj khawb qhov dej hu ua Licensed Well and Boring Contractor Directory \(www.health.state.mn.us/lwcsearch\)](http://www.health.state.mn.us/lwcsearch)
- [Tshuaj ntsev Nitrate hauv cov dej tsoom fww tso tuaj hu ua Nitrate in community water systems \(https://data.web.health.state.mn.us/nitrate-messaging\)](https://data.web.health.state.mn.us/nitrate-messaging)
- [Tshuaj ntsev Nitrate hauv qhov dej khawb \(Nitrate in Well Water \(PDF\)\) \(www.health.state.mn.us/communities/environment/water/docs/wells/waterquality/nitrate.pdf\)](http://www.health.state.mn.us/communities/environment/water/docs/wells/waterquality/nitrate.pdf)
- [Tiv Thaiv koj Lub Qhov Dej Khawb Protecting Your Well \(www.health.state.mn.us/communities/environment/water/wells/construction/protect\)](http://www.health.state.mn.us/communities/environment/water/wells/construction/protect)
- [Qhia tawm txog cov Nitrogen nyob saum Npoo Dej Report on Nitrogen in Surface Water \(www.pca.state.mn.us/featured/report-nitrogen-surface-water\)](http://www.pca.state.mn.us/featured/report-nitrogen-surface-water)
- [Tua Kab Mob hauv cov Qhov Thaus Dej/Quav Subsurface Sewage Treatment Systems \(www.pca.state.mn.us/water/subsurface-sewage-treatment-systems\)](http://www.pca.state.mn.us/water/subsurface-sewage-treatment-systems)
- [Cov chaw kuaj hauv zos hu ua Township Testing Program \(www.mda.state.mn.us/townshiptesting\)](http://www.mda.state.mn.us/townshiptesting)

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