



Wildland hluav taws kub tshuaj toxicity thiab tej kev txhawj xeeb Cov ntaub ntawv dav dav



Cov lus nug no nquag tsa ceg txog kev ruaj ntseg thiab tej yam uas yuav noj thaum hluav taws kub suppression. Ob peb interagency kev tshawb fawb rau tej yam uas wildland hluav taws suppression khoom rau yooj, pej xeeb general, thiab qhov chaw muaj nyuam qhuav tau tiav. Lub Forest Service daim ntawv cog lus kom muaj ib txoj kev soj ntsuam uas ua los incorporate tag nrho cov ntaub ntawv tshiab. Tsab xov xwm no qhia txog qhov uas ua hauj lwm no.

Muaj pes tsawg leeg

Mus sij hawm ntev retardants, sib xyaw rau tus me nyuam rau qhov hluav taws kub, muaj li 85 feem pua dej, 10 feem pua fertilizer, thiab 5 feem pua me me xyaw: xim (hlau oxide - rust, los yog fugitive xim uas fades nrog tshav ntuj), thickener (ntuj pos hniav thiab clay), corrosion inhibitors, stabilizers, thiab bactericides.

Hluav taws kub suppressant foams, diluted siv hluav taws kub sib ntaus, muaj ntau tshaj 99 feem pua dej. Qhov ntxiv 1 feem pua muaj surfactants (wetting kab mob), foaming kab mob, corrosion inhibitors, thiab dispersants.

Cov dej txhim kho yog 95 mus rau 98 feem pua ntawm cov dej. Qhov seem 2 mus rau 5 feem pua muaj cov thickeners, stabilizers, thiab lwm yam khoom me me.

Mammalian Toxicity

Tsim nyog thiab pom zoo wildland hluav taws kub muaj tag nrho cov kev tshuaj ntsuam thiab raws li qhov yuav tsum tau hais txog mammalian toxicity li txiav txim tau los ntawm qhov ncauj thiab dermal toxicity kuaj thiab daim tawv nqaij thiab qhov muag irritation.

Raws li muaj tej yam tshuaj, ib feem pua ntawm cov pejxeem tej zaum yuav muaj allergy los yog tej yam txawv (rau ib yam tshuaj) uas yuav tsis raug kuaj thaum kuaj xyuas.

Kev cuam tshuam ib puag ncig

Mus sij hawm ntev Retardants — Cov chiv yog ib qho loj tivthaiv ntawm retardants. Vim li no ceev faj thiab zoo txiav txim yuav tsum tau exercised thaum ib nco yog ua mus rau commercially los yog aesthetically zoo vegetation. Cov chiv ntau dhau tej zaum yuav ua tau ib ntus "hlawv" rau cov vegetation thiab tej zaum tseem tua cov nroj tsuag.

Cov chiv uas muaj nyob rau hauv cov retardant tej zaum yuav, nyob rau hauv tej yam kev mob tshwj xeeb, tej zaum yuav ua rau nitrate lom nyob rau hauv cov tsiaj uas tau noj quav nyab los yog lwm yam zaub mov qoob loo kis kab mob los ntawm lub retardant thaum lub sij hawm tua hluav taws.

Lub cov chiv muaj nyob rau hauv cov retardants zoo ib yam ntawm ammonia thiab phosphate los yog sulfate ions. Kev tshawb fawb qhia tias ib zaug xwb retardant nco ncaj qha mus rau hauv ib kwj dej yuav ua tau ib tug txaus ammonia concentration hauv dej yuav tsum ua tuag ntses thiab lwm aquatic organisms. Qhov loj ntawm cov teebmeem yuav txawv nyob ntawm qhov ntim ntawm lub retardant uas ua tau nkag mus rau hauv dej, qhov luaj li cas ntawm lub cev dej, thiab qhov ntim ntawm ntwis hauv tus kwj dej los yog dej. Piv txwv li, yog ib tug 800-gallon nco yog ua rau ib tug dej ntwis ntwis dej, nws tseem yuav tias cov teebmeem ua tuag yuav short-lived li dilution hauv qab no qib lom yog sai tiav. Contrast, yog ib tug 3,000-gallon nco yog ua rau ib stagnant pond, toxic theem yuav yuav persist rau tej lub sij hawm.

Foam hluav taws kub Suppressants— Foam concentrates muaj zog detergents. Lawv yuav tsis tshua muaj qhuav qhuav thiab. Tej tawv nqaij ntawm daim tawv nqaij yuav ua rau mob chapping uas yuav alleviated nrog daim ntawv thov ntawm ib lub npe cream los yog lotion rau tej thaj chaw uas raug tus kab mob no. Tag nrho cov tam sim no pom zoo foam concentrates yog mildly loj irritating rau ob lub qhov muag. Sawv daws koom tes nrog los yog ua hauj lwm hauv lub cheeb tsam uas qhib containers ntawm foam concentrates yuav tsum siv tiv thaiv goggles. Rubbing lub qhov muag los yog fim yuav raug mob rau lub qhov muag yog ob txhais tes muaj tus kab mob no thaum kov.

Tus thawj toxic nyhuv rau ntses tshwm sim los ntawm tus surfactant tes hauj lwm ntawm foam. Tus surfactant hauv dej cuam tshuam nrog lub peev xwm ntawm tus gills los absorb oxygen los ntawm cov dej yuav ua rau cov ntses suffocate.

Vim hais tias ib tug nqi me me ntawm foam concentrate khaws cia zoo heev wetting capabilities, ntxiv precautions yuav tsum tau noj kom tsis txhob muaj kev mloog zoo rau hauv dej.

Dej Enhancers — Muaj ntau hom khoom nyob rau hauv cov qeb no, tiam sis feem ntau yog super-absorbent polymers uas yuav tuav ntau zaus lawv tus kheej luj dej.

Cov khoom no haum innocuous rau cov neeg, txawm tias goggles thiab hnab looj tes yuav tsum siv thaum ua hauj lwm nrog tej concentrate. Lawv muaj ib tug haum toxicity rau ntses. Feem ntau tsis biodegradable; tiam sis, tej zaum lawv yuav tawg thaum tshav ntuj.

Cov khoom no tsim slippery heev rau cov neeg mob uas lawv yuav thov thiab nws yuav tsis yooj yim tshem lawv thaum hluav taws kub tau kis. Vim lawv muaj nuj nqi los absorbing thiab tuav dej, cov ntaub ntawv twg uas muaj rov ntoo tej zaum yuav muaj deterioration ntawm lug, tshwj xeeb tshaj yog keeb kwm kev pab.

Tej Txheej Txheem Tiv Thaiv Kev Noj Qab

- Cov txheej txheem nram qab no yuav tsum taug kom minimize cov lilihood ntawm retardant tshuaj nkag mus rau hauv ib kwj dej los yog lwm lub cev dej.
- Thaum txoj kev kawm los yog briefings, qhia cov neeg ua hauj lwm ntawm tej tshuaj tua hluav taws, tshwj xeeb tshaj yog foam concentrates, hauv streams los yog pas dej.
- Nrhiav mixing thiab loading ntsiab lus uas muaj tej dej ntuj, tshwj xeeb tshaj yog nrog cov foam concentrate, yog yam tsawg kawg nkaus.
- Tswj tag nrho cov khoom thiab siv cov valves uas tsim nyog los tiv thaiv cov foam concentrate rau hauv tej lub cev dej.
- Kev ua kom ib ce muaj zog ceev faj thaum uas siv tej tshuaj tua hluav taws kub hauv watersheds qhov twg ntses hatcheries nyob.
- Nrhiav dip haujlwm kom tsis txhob run-off ntawm cov dej uas muaj tus kab mob no rov qab rau hauv cov kwj dej.
- Dip los ntawm ib lub tank es ncaj qha los ntawm ib lub cev dej, kom tsis txhob tso tej foam rau hauv cov chaw tshwj xeeb tshaj yog rhiab rhiab.
- Siv lub twj tso kua mis uas muaj valves los tiv thaiv kom tsis txhob muaj dej ntwis rov qab mus rau hauv lub cev loj.
- Tsis txhob nco ntsoov retardant los yog foam rau hauv dej, streams, pas dej, los yog raws shores. Siv lwm txoj kev hluav taws kub hauv tsev rhiab rhiab.
- Ceeb toom kom tub ceev xwm kom sai yog hais tias muaj hluav taws kub siv nyob rau hauv ib cheeb tsam uas muaj lilihood ntawm tej yam tsis zoo.

Thaum nws yog preferable tias dauv mus rau hauv los yog raws tej lub cev dej tsis tshwm sim, tej zaum yuav muaj tshwm sim xws li qhov hluav taws kub qhov chaw thiab lwm terrain ua nws probable tias ib txhia retardant yuav nkag mus rau hauv dej. Tus neeg thov lub retardant (xws li qhov xwm commander) yuav tsum tshuav nyiaj li cas rau tej yam rau ib puag ncig, i.e., tej ntses tua, nrog rau cov chaw muab kev pab thiab qhov tseem ceeb yuav tiv thaiv los ntawm qhov hluav taws kub.