

Forty Frequently Asked Questions on the Use of Borax for Heterobasidion Root Disease Prevention on the National Forests in the Pacific Southwest Region (R5)

For any questions on this topic, contact Stacey Clark, Regional Invasive Plants and Pesticide Use Program Manager, at stacey.clark@usda.gov or (707) 562-8916.

Acronyms and abbreviations used in these FAQs:

BMP – Best Management Practices

CAC – County Agricultural Commissioner

CCR – California Code of Regulations, specifically Title 3, Division 6 that deals with pesticides

DPR – California Department of Pesticide Regulation, within the California Environmental Protection Agency

EPA – United States Environmental Protection Agency

FACTS – Forest Service Activity Tracking System (accomplishment database)

FSH – Forest Service Handbook

FSM – Forest Service Manual

MSDS – Material Safety Data Sheet

NEPA – National Environmental Policy Act

OIN – Operator Identification Number

PCB – Pest Control (Business) License

PPE – Personal Protective Equipment

PSIS – California Department of Pesticide Regulation's Pesticide Safety Information Series Leaflets

QAC – California Qualified Applicator Certificate

QAL – California Qualified Applicator License

R5 – Pacific Southwest Region of the USDA Forest Service (Region 5)

REI – Restricted Entry Interval

Background

“Borax” is a group of compounds used as a preventative treatment against the establishment and growth of fungi that cause heterobasidion root disease, which can infect cut trees and spread from stumps to other trees in the stand. Several products have historically been used and registered by the EPA and in the state of CA for use in controlling the spread of the fungi (see question #1).

There are many questions that arise when the USFS is contracting a timber sale and the use of borax products when control of heterobasidion is desired. The history of this goes back to 1984 when enforcement letter ENF 84-27 was developed by the CA DPR to provide guidance to the CACs. There have been several updates and several other enforcement and regulatory documents since then that provide guidance on this issue:

ENF 84-27 (*Policy on Pest Control Incidental to Wood Cutting*)

ENF 99-037 (*State Authority to Regulate Pesticide Use on Federal Facilities and on Tribal Lands*)

CA DPR Pesticide Use Enforcement Program Standards Compendiums:

Compendium 1, Chapter 4 (*Pesticide Use Reporting and Operator Identification Numbers*), pages 4 – 10

Compendium 5 (*Investigation Procedures*), Appendix H (*Investigations on Federal Facilities*)

Compendium 8, Section 1.1 (*Agricultural and Non-Agricultural Pest Control Use*)

Compendium 8, Section 3.6 (*Harvest Date*)

Questions

This Q&A is meant to provide regional guidance on the use of borax products, in compliance with the above enforcement letters and regulatory publications. The following list of questions are covered in this document:

- 1) *What is borax?*
- 2) *Are Sporax and Cellu-Treat considered pesticides?*
- 3) *Can I use borax hand soap or borax laundry detergent to treat stumps?*
- 4) *Are there fungicides I can use other than Sporax or Cellu-Treat?*
- 5) *Do I need to be a state-certified pesticide applicator (QAC or QAL) to apply Sporax or Cellu-Treat on national forest lands?*
- 6) *Can the Government pay for my State-issued pesticide applicators license?*
- 7) *Does a California-certified pesticide applicator (QAC or QAL) have to supervise the application of Sporax or Cellu-Treat in a project where Forest Service employees are applying the pesticide?*

- 8) *Does a logging contractor or other Forest Service contractor have to be licensed as a PCB to apply Sporax or Cellu-Treat? Does a contractor have to train his/her employees to apply Sporax or Cellu-Treat? How do I know that they are trained?*
- 9) *Do I need any special training as a Forest Service employee before I apply Sporax or Cellu-Treat?*
- 10) *I am a sale administrator/contract inspector on a contract that requires the use of Sporax or Cellu-Treat, but I am not involved in the application. Do I need any special training?*
- 11) *If we use our own crews (force account) to remove hazard trees in campgrounds or other areas, who is supposed to apply the Sporax or Cellu-Treat?*
- 12) *Is there any special protective clothing that must be worn when applying Sporax or Cellu-Treat?*
- 13) *Can I use a paper particulate dust mask when applying Sporax, even though it is not required by the label or Forest Service policy?*
- 14) *Where do I find the current R5 standards for the use of borax for the prevention of heterobasidion root disease?*
- 15) *Who do I ask for advice and assistance regarding borax application?*
- 16) *I work on one of the Southern California Forests that recently completed a Forest Plan Revision. The standard for borax application in the Forest Plan is different than what is in the Regional guidelines. Which standard do I follow?*
- 17) *Southern California Forest Plans state “Treat all freshly cut live or recently dead conifer stumps with a registered fungicide...” What is meant by “recently dead” in the context of borax applications?*
- 18) *Do I need to include consideration of borax treatment in my NEPA documentation?*
- 19) *I am involved in writing an environmental assessment that includes the use of borax. What resources are available for my analysis of effects?*
- 20) *Can I use either of the two categorical exclusions created as part of the Healthy Forests Restoration Act (referring to FSH 1909.15 Chapter 32.2, categories 10 and 11) if I plan to apply borax?*
- 21) *What is the minimum size stump that needs to be treated?*
- 22) *Are there any places in R5 where borax is to always be applied?*
- 23) *How much borax should be applied to a stump to be effective?*

- 24) *Can I mix Sporax with water to make application easier?*
- 25) *Can I add a dye to Sporax or Cellu-Treat to make it easier to inspect applications?*
- 26) *Are there any special requirements for storing a supply of borax at our unit location?*
- 27) *Can I carry borax around in the back of my truck?*
- 28) *Is there some special regional funding to pay for regular usage of Sporax or Cellu-Treat?*
- 29) *Can I use an old Gatorade® bottle with holes punched in the top to carry Sporax in the field and apply it to stumps?*
- 30) *Can I give out a baggie of Sporax with woodcutting permits (and if not, how can forests make sure that trees cut by the public get treated)?*
- 31) *Does borax use have to be recorded in FACTS and reported as a pesticide use?*
- 32) *There seems to be some confusion with timber sale purchasers or other Forest Service contractors whether they should obtain and use their own Operator Identification Number (OIN) when reporting borax use in the specific county they are harvesting in or if they should be using the OIN that the county has given to the forest?*
- 33) *If treated stumps are re-cut at a later time (for example, flush cut in a campground), does the re-cut stump need to be treated? How long after initial cutting and treatment do we not have to consider a retreatment at the time of the re-cut?*
- 34) *How do I go about purchasing Sporax or Cellu-Treat?*
- 35) *How do I fill in the blanks in contract clause C(T) 6.41, Felling, Bucking, and Limbing?*
- 36) *Am I required to post warning signs around the areas that are treated with Sporax or Cellu-Treat?*
- 37) *I don't see a Restricted Entry Interval (REI) on the Sporax or Cellu-Treat label, or anything about Agricultural Use Requirements that I am used to seeing on pesticide labels. Why are these missing?*
- 38) *Do I need to notify Forest Service employees not involved in the application of borax about any applications and if so, how do I do that?*
- 39) *Is there any training required of employees who might be working in areas already treated with borax (not the applicators, but others)?*
- 40) *What do I do with empty bags or pails of Sporax or Cellu-Treat?*

Questions and Answers

1) *What is borax?*

Borax is the common name for a group of compounds characterized as sodium salts of boric acid, also known as borates. These boron-containing compounds have several agricultural uses based on their fungicidal, herbicidal and insecticidal properties. In the Forest Service in R5, borax is used as a preventive treatment against the further spread of heterobasidion root disease caused by *Heterobasidion irregulare* (formerly referred to as the P type) and *Heterobasidion occidentale* (formerly referred to as the S type). Borax does not ‘cure’ infected trees, but is instead a preventive measure, and is applied to recently cut stump surfaces. The borax then forms a chemical barrier to the germinating fungus. In California, there are two borax products registered by both EPA and California for this use: Sporax[®] and Cellu-Treat[®].

Sporax (EPA Registration number 2935-501-AA, **inactive** as of 12/31/2016) is a commercial formulation of sodium tetraborate decahydrate registered by the Wilbur-Ellis Company. **Sporax is no longer available for sale; however, reserve supplies can still be utilized.** Sporax contains 100% sodium tetraborate decahydrate and has no other active or inert ingredients. Sporax is typically applied to cut stump surfaces as a fine granular compound. Cellu-Treat (EPA Registration number 64405-8-ZB) is a commercial formulation of disodium octaborate tetrahydrate. Cellu-Treat is registered by the Nisus Corporation. Cellu-Treat contains 98% disodium octaborate tetrahydrate and 2% water. Cellu-Treat is applied to cut stump surfaces as a liquid, with the borate dissolved in water.

2) *Are Sporax and Cellu-Treat considered pesticides?*

Yes, Sporax and Cellu-Treat are general-use pesticides which are registered for use as preventive treatments against the fungi that cause heterobasidion root disease, which is why they are also called fungicides.

When applying any pesticides on the National Forests in California, it is R5 policy that only EPA and California-registered pesticides will be used and that applications must follow all Federal and California laws and regulations, and Forest Service policies and direction. Basic Forest Service policy and direction on the use of pesticides is found in FSM 2150 *Pesticide-Use Management and Coordination* as well as in FSH 2109.14 *Pesticide-Use Management and Coordination Handbook*. There is also a R5 supplement to FSM 2150. There is additional

information in FSH 6709.11 *Health and Safety Code Handbook*. California pesticide regulations are found in the California Code of Regulations Title 3, Division 6 (CCR) and can be found on-line at https://www.cdpr.ca.gov/docs/legbills/calcode/chapter_.htm.

3) *Can I use borax hand soap or borax laundry detergent to treat stumps?*

NO!

Sporax and Cellu-Treat are EPA and California-registered pesticides and are the only such products legal for treatment of stumps for heterobasidion root disease prevention. Use of hand soaps or laundry detergents, such as Boraxo® Powdered Hand Soap or Twenty Mule Team® Borax Natural Laundry Booster, on cut stumps is an illegal use. Such products cannot be used or recommended for use.

4) *Are there fungicides I can use other than Sporax or Cellu-Treat?*

There are currently no other registered heterobasidion root disease preventive fungicides available for use in California.

5) *Do I need to be a state-certified pesticide applicator (QAC or QAL) to apply Sporax or Cellu-Treat on national forest lands?*

Sporax and Cellu-Treat are not restricted-use pesticides. Both are considered 'general-use' pesticides. Neither state or federal regulations nor Forest Service policy require certified applicators when applying general-use pesticides, although training is required (refer to Q. 9). A certified applicator is licensed to apply restricted-use pesticides, and any applications of restricted-use pesticides require such a licensed applicator. Restricted-use pesticides are either clearly identified as such on the label or are California-listed (refer to CCR §6400). Although not required for the application of general-use pesticides, it would be desirable for all the national forests in R5 to have several state-certified pesticide applicators (also refer to Q. 7). As most of the forests are currently using pesticides, or have plans to use them, the presence of certified applicators would make forest compliance with federal and state pesticide laws and regulations more certain since licensed applicators would be familiar with them.

A good source of information on becoming a state-certified applicator is found online on the California Department of Pesticide Regulation (DPR) website:

<https://www.cdpr.ca.gov/docs/license/qac.htm>. This website is for the most commonly held

certificate for Forest Service employees, known as a Qualified Applicator Certificate or QAC. Any employee wanting to become certified should also include, as a minimum, the Forest pest control category. If someone has had experience with pesticides in the past, it should be a matter of refreshing oneself with the current regulations and with the math behind calibration and mixing. The website also has a list of suggested study materials.

6) *Can the Government pay for my State-issued pesticide applicators license?*

If a license is required to conduct a part of the employee's job, the cost of that license can be covered by the Forest Service, out of appropriated funds (7USC2231a, FSM 6511.31i). The final decision is up to the appropriate line officer. Currently, a new application and the certification exam (along with forest category) would cost about \$140. Renewal fees for QAC currently cost \$60 (paid every other year).

7) *Does a California-certified pesticide applicator (QAC or QAL) have to supervise the application of Sporax or Cellu-Treat in a project where Forest Service employees are applying the pesticide?*

It would be desirable, but it is not required, that a certified applicator be on site during the force-account application of general-use pesticides, such as Sporax or Cellu-Treat. We are required to provide a level of supervision that ensures that safe work practices are complied with, including all applicable regulations and pesticide product labeling requirements. This can be done with someone knowledgeable about Sporax or Cellu-Treat who is not licensed. Keep in mind that a certified applicator may be required if the project's site-specific NEPA document requires such a level of supervision or requires certified applicators.

8) *Does a logging contractor or other Forest Service contractor have to be licensed as a PCB to apply Sporax or Cellu-Treat? Does a contractor have to train his/her employees to apply Sporax or Cellu-Treat? How do I know that they are trained?*

Generally, no. If the only pesticide being used on a contract is Sporax or Cellu-Treat to treat stumps, and the logging contractor's employees are applying it, then logging contractors are not required by DPR to have an Agricultural Pest Control Business license. It is the contractor's responsibility to make sure his/her employees are adequately trained and supervised as per federal and state pesticide laws and regulations. Contractors are also required to report monthly use of Sporax and Cellu-Treat to the Forest Service and to the county agricultural commissioner as per state regulations. If you are unsure whether the contractor's employees are trained, ask

the contractor to see the training forms for each employee, which the contractor is required to retain for 2 years after training is completed. Note that these training forms are not required to be on site.

In the past, there have been instances where the Forest Service has put on pesticide-specific training for logging contractors' employees (such as timber fallers). Since implementing the current written training plan takes only 2-4 hours, this is an option.

EXCEPTIONS:

If the logging contractor is advertising that it will apply pesticides (including Sporax or Cellu-Treat), soliciting pest control for hire, or operating as a pest control business, then the logging contractor needs to be licensed by DPR as a PCB.

If stump treatments take place after a reasonable amount of time has passed from tree harvest and stump treatment of the application would no longer be "incidental" to the harvest, then a PCB license is required (for example, if the logging crew leaves the site or moves to another area within the harvest site, and then another crew arrives later to treat the stumps).

If the logging contractor or other Forest Service contractor hires a sub-contractor to apply the Sporax or Cellu-Treat, that sub-contractor would be required to have a CA PCB license.

9) *Do I need any special training as a Forest Service employee before I apply Sporax or Cellu-Treat?*

Anyone who handles a non-restricted use pesticide must be annually trained prior to use. The training must cover the topics contained in CCR §6724. A certified applicator (or certain other trained individuals - CCR §6724(f)) must conduct and document annual, chemical-specific training. Records of this training must be kept on-file for two years.

The need for training is included in our own FSM 2154.1 which states that only trained personnel shall recommend and use pesticides. The FSM recognizes the two levels of qualification as well (those needing to be trained and certified for restricted-use pesticides, as well as those needing to be trained for general-use pesticides).

Anyone who is not trained as an applicator under CCR §6724 or is not a California licensed applicator cannot be in the immediate work area while borax is being applied.

Copies of a written Sporax/Cellu-Treat safety training program, including a powerpoint and documentation forms can be obtained from Stacey Clark, regional pesticide-use specialist.

10) I am a sale administrator/contract inspector on a contract that requires the use of Sporax or Cellu-Treat, but I am not involved in the application. Do I need any special training?

If you are on the treatment site at the time of application, especially if you are checking Sporax or Cellu-Treat coverage on stumps, you should complete the annual applicator training. This training will also help you become familiar with what a safe and correct application should be, so that you can confirm that the contractor is following all federal and state pesticide laws and regulations.

11) If we use our own crews (force account) to remove hazard trees in campgrounds or other areas, who is supposed to apply the Sporax or Cellu-Treat?

The label for Sporax states that it should be applied to the stump surface “as soon after felling as practical”. The Cellu-Treat label states that stumps should be treated “immediately or within 3 days of felling”. The R5 Supplement to FSH 3409.11 states that application should occur within 4-24 hours and certainly no longer than 2 days after creating the stump.

Borax is most effective if applied as soon as possible after the stump is created. This means that someone on the crew is the most logical person to apply the Sporax or Cellu-Treat. That person must be trained in the application of the pesticide and must be wearing the appropriate protective gear. If someone else is the applicator (i.e., someone not on the crew), that person should be in the work area as the crew is progressing through it, so that the Sporax or Cellu-Treat is applied soon after cutting the tree. If there is a delay of more than 48 hours, the stump should be re-cut before the Sporax or Cellu-Treat is applied.

If borax is being applied while the force account crew is on-site, the entire crew must go through annual training on the use of borax.

12) Is there any special protective clothing that must be worn when applying Sporax or Cellu-Treat?

Always refer to the pesticide label when determining the correct protective equipment. In addition, California often requires additional PPE; these requirements can be found in CCR §6736-6739. Pesticide labels will indicate the acute hazard of a particular pesticide with a ‘signal word’ (Caution, Warning, or Danger). Often, this acute hazard is further explained,

especially for pesticides with a Danger signal word. As an example, the Sporax label, which carries a Danger signal word, explains that the hazard is to the eyes. With Sporax, the current label, when combined with California regulations, require that when loading from the bag or applying Sporax to the stump, the minimum required personal protective equipment (PPE) to be worn are:

- long-sleeved shirt, long pants, shoes, and socks;
- coveralls made of cotton or Tyvek® (because of the ‘Danger’ signal word on label and CCR §6736);
- approved chemical protective eyewear (as per label and CCR §6738(b)(1));
- gloves (as per label and CCR §6738(c)); the gloves shall be waterproof (such as latex, nitrile), not cotton or leather;
- emergency eyewash bottles (at least 1 pint of clean water) should be carried by each applicator (as per CCR §6734(c)).

With Cellu-Treat, the current label, when combined with California regulations, require that when mixing from the bucket or bag, or applying Cellu-Treat to the stump, the minimum required PPE to be worn are:

- long-sleeved shirt, long pants, shoes, and socks;
- approved chemical protective eyewear (as per label and CCR §6738(b)(1));
- gloves (as per label and CCR §6738(c)); the gloves shall be waterproof (such as latex, nitrile), not cotton or leather;
- emergency eyewash bottles (at least 1 pint of clean water) should be carried by each applicator (as per CCR §6734(c)).

13) Can I use a paper particulate dust mask when applying Sporax, even though it is not required by the label or Forest Service policy?

It is up to your supervisor whether to allow the voluntary use of paper particulate respirators. If your supervisor allows you to wear these, he or she must first post the information that is contained in CCR 6739(r) in the central location where the PSIS A-8 is posted (refer to Q. 38). You are responsible for purchasing these masks in this situation.

14) Where do I find the current R5 standards for the use of borax for the prevention of

heterobasidion root disease?

Current handbook direction for the use of borax is found in the [R5 Supplement 3409.11- 2013-1](#) (eff. June 10, 2013) to FSH 3409.11 (*Forest Health Protection Handbook*). In addition, the revised Forest Land and Resource Management Plans for the Cleveland, San Bernardino, Angeles, and Los Padres National Forests contain a common Design Criteria (S5) that addresses the need to treat all stumps created from live and recently dead trees.

15) Who do I ask for advice and assistance regarding borax application?

State and Private Forestry Forest Health Protection (FHP) staff includes forest pathologists. There is a regional pathologist (Phil Cannon) located in the regional office, and a pathologist located at each of the four FHP zone offices. These four zone offices are co-located with the Shasta-Trinity (Ashley Hawkins); the Lassen (Bill Woodruff); the Stanislaus (Martin MacKenzie), and the San Bernardino (Charlie Barnes). These pathologists would provide you with advice on the need to use borax. In addition, FHP includes a pesticide-use specialist (Stacey Clark) located at the regional office who can provide you with advice on planning, training, and application of borax.

16) I work on one of the Southern California Forests that recently completed a Forest Plan Revision. The standard for borax application in the Forest Plan is different than what is in the Regional guidelines. Which standard do I follow?

The Forest Plan direction found in the Design Criteria S5 for the Southern California national forests is the direction that should be followed if there is a conflict between the R5 FSH supplement and the Forest Plan.

17) Southern California Forest Plans state “Treat all freshly cut live or recently dead conifer stumps with a registered fungicide...” What is meant by “recently dead” in the context of borax applications?

Based on a 2006 study by Kliejunas et al, “recently dead” can be interpreted to mean a dead conifer tree that still retains its needles.

18) Do I need to include consideration of borax treatment in my NEPA documentation?

YES!

Borax use should be clearly identified in your NEPA planning documents as part of the proposed action, with all of the necessary design criteria and analysis of effects included. The national borax human health and ecological risk assessment should be used in the effects analysis and adequately referenced; a copy should be in your project file. Since Sporax and Cellu-Treat are pesticides, there must be a FS-2100-2 (Pesticide Use Proposal) completed and approved by the appropriate line officer prior to the Decision Notice or Record of Decision being signed (refer to FSH 2109.14). Once approved, this should be in your project file. The project file should also contain a pesticide spill plan tiered to your Forest spill plan.

19) I am involved in writing an environmental assessment that includes the use of borax. What resources are available for my analysis of effects?

There is no regional or national programmatic NEPA document that is in place for borax use. There is a white paper that should be considered prior to beginning a project NEPA document. This white paper can be found at: <https://www.fs.usda.gov/detail/r5/forest-grasslandhealth/insects-diseases/?cid=stelprdb5329386>. It is referred to as pesticide use advisory memorandum 06-01 (two documents are on the web page, the cover letter and the attachment (which is the white paper)). There is also a national human health and ecological risk assessment located on-line at <https://www.fs.fed.us/foresthealth/protecting-forest/integrated-pest-management/pesticide-management/pesticide-risk-assessments.shtml>. It should be used in the effects analysis and adequately referenced; a copy should be in your project file. There are human health and environmental risk assessment worksheets for the different borax products. Those should be developed to be project-specific, and used for analysis of effects, project design criteria, and referenced in the NEPA write-up.

A copy of the worksheet should also be kept in the project file.

20) Can I use either of the two categorical exclusions created as part of the Healthy Forests Restoration Act (referring to FSH 1909.15 Chapter 32.2, categories 10 and 11) if I plan to apply borax?

Both Category 10 (hazardous fuels reduction activities – *currently enjoined from use*) and Category 11 (post-fire rehabilitation activities) contain a condition that no pesticides can be used. As such, **any project that involves the use of borax cannot qualify for either of these categories.**

As an alternative, Category 6 (timber stand and or wildlife habitat improvement) may be used, assuming that no more than one mile of road construction is needed. Another alternative would be for a Forest to write an environmental assessment for borax application on a district or forest basis. This way, Category 10 or 11 could still be used, because the borax use would be covered under a separate document.

Other categorical exclusion categories include a condition that no herbicides can be used. Since borax is a fungicide, not an herbicide, the restriction on herbicide use does not affect the use of borax.

21) What is the minimum size stump that needs to be treated?

Please refer to the [R5 Supplement 3409.11-2013-1](#) (eff. June 10, 2013) to FSH 3409.11 (*Forest Health Protection Handbook*) for specific guidance. The minimum size stump to treat depends on where the treatment occurs. Within developed recreation sites and other high-value areas, there is a 3 inch (outside bark) minimum diameter. In eastside forest types, a 14 inch minimum diameter is suggested. Everywhere else, develop the minimum diameter on an individual stand basis. The line officer needs to decide this as part of project planning, and the decision should be based on the recommendation of a forest pathologist.

22) Are there any places in R5 where borax is to always be applied?

As per R5 Supplement 3409.11-2013-1 (eff. June 10, 2013) to FSH 3409.11 (*Forest Health Protection Handbook*), it is R5 policy that in developed recreation sites and other high value areas, such as progeny test sites, seed orchards, and other areas where there are high value trees, such as in giant sequoia groves, all freshly cut coniferous tree stumps greater than 3 inches in diameter (outside bark) shall be treated. The Southern California forest plans (Angeles, Cleveland, Los Padres, and San Bernardino National Forests) have a design criteria which requires the use of borax on all stumps created from live and recently dead trees.

Refer to the R5 handbook supplement for more detailed information.

23) How much borax should be applied to a stump to be effective?

As per the current Sporax label, Sporax should be applied at the rate of 1 pound per every 50 square feet of stump surface area. This is not much. As an example, a 12 inch diameter stump would need only 0.02 pounds of Sporax, or about a quarter ounce; a 24 inch diameter

stump would need about an ounce. The Sporax should be visible on the stump, but should not appear as a solid white layer (similar in appearance to a heavily salted steak).

Cellu-Treat is applied as a 5% spray solution, at a label rate of 1 gallon per every 400 square feet of stump surface. For a 12 inch diameter stump this is only about 0.25 liquid ounce and 1 liquid ounce for a 24 inch diameter stump. There are indications from studies done in the southeast United States that the labeled application rate may not be sufficient to prevent infection. The recommendation there is to apply the Cellu-Treat to the point of wetness, nearly to the point of runoff (this is an allowed application rate on the label). Additional studies are underway at this time. For now, apply Cellu-Treat to the point of wetness on the stump.

24) Can I mix Sporax with water to make application easier?

The Sporax label does not speak to this question at all. As the label doesn't prohibit it, it could be done. However, the distributor (Wilbur-Ellis Co.) does not recommend mixing it with water. Sporax is not easily dissolved in water and would require constant agitation to keep it from settling out of solution. If the concern is about the Sporax blowing off the stump or being an exposure risk to the public, it could be applied and then followed up with a misting of water onto the stump, to help it dissolve more quickly. However, do not spray so much water that the Sporax is rinsed off the stump.

If the concern is that the stump has been torn up through mastication or is otherwise not smooth or level, the use of Cellu-Treat may be a better option as this product is designed to be dissolved in water and applied as a spray.

25) Can I add a dye to Sporax or Cellu-Treat to make it easier to inspect applications?

A dry powder dye (e.g., Becker-Underwood's Hi-Light® WSP®) could be mixed with Sporax, although there are no guidelines in place as to how much dye to use or how exactly to mix it up. A water-based dye could be added to Cellu-Treat and would be recommended in most cases to keep track of treated stumps. Sporax applications should be visible for several days. Why is a dye being considered? If it is because of a trust issue with a contractor, more rigorous inspection may be the better solution. Sporax and Cellu-Treat should be applied within a short time of the stump being cut to be most effective.

26) Are there any special requirements for storing a supply of borax at our unit location?

YES!

FSH 2109.14, Chapter 40, provides direction on the storage of pesticides. In addition, California pesticide storage regulations apply (CCR §6670-6686). A pesticide storage facility checklist can be obtained from the R5 pesticide use specialist, Stacey Clark, who is located in the regional office. Storage facility requirements include (*but are not limited to*):

- Always store pesticides in their original containers. The label on the container has important information, including ingredients, directions for use, and first aid in case of accidental poisoning.
- Never transfer pesticides to soft drink bottles or other food containers. Children or others can mistake them for something to eat or drink.
- Store pesticides out of reach of children and pets. Pesticides should be stored in a locked enclosure that provides access only to those trained in the application and safe handling of the pesticides. Never store pesticides in cabinets near food, animal feed, or medical supplies.
- Proper posting of warning signs on the outside of the storage area.
- Materials for spill cleanup, including PPE, should be immediately available.

27) *Can I carry borax around in the back of my truck?*

Operational quantities of either Sporax or Cellu-Treat can be carried in a vehicle as long as the following requirements are met:

- The pesticide must be protected from the weather, especially moisture (borax can absorb moisture from the air, and cake up, so it's important to keep it dry and sealed in its container).
- The pesticide must be contained while in the vehicle in case a container opens or breaks during transport.
- The pesticide must be under lock and key when you are working away from the vehicle (such as in a truck box or locked and anchored garbage can).
- The truck box, or other locked cabinet (as in a utility bed) must be properly signed (as a pesticide storage locker).
- The pesticide should never be transported in the cab of the vehicle.
- The pesticide should never be stored in the same container as food or PPE.

28) *Is there some special regional funding to pay for regular usage of Sporax or Cellu-Treat?*

The cost of purchasing and applying borax should be considered an operational cost of the project and should be budgeted as part of the project's annual Project Work Plan. There is no special funding available to complete this work.

29) *Can I use an old Gatorade® bottle with holes punched in the top to carry Sporax in the field and apply it to stumps?*

NO!

Food containers should never be used to hold pesticides.

A container used to hold operational quantities of a pesticide is known as a service container. Service containers should not be old food or beverage containers. There are sources of shaker containers at farm supply stores, or non-descript containers can be purchased from container manufacturers and applicators can be made from them. All service containers need to include the following information:

- The name and address of the person or firm responsible for the container;
- The identity of the pesticide in the container; and
- The signal word "Danger", "Warning", or "Caution", in accordance with the label on the original container. When applying Cellu-Treat using a backpack sprayer or other type of sprayer, the sprayer should also be labeled as a service container.

30) *Can I give out a baggie of Sporax with woodcutting permits (and if not, how can forests make sure that trees cut by the public get treated)?*

There are two questions here. The first is whether it is legal to carry Sporax in a plastic baggie. A few years ago, the San Bernardino County Agricultural Commissioner said that plastic bags properly labeled as "service containers" may be used to package small quantities of Sporax for field use. The information on the baggie label must include:

- The name and address of the person or firm responsible for the container.
- The identity of the pesticide in the container, including EPA registration number.
- The signal word "DANGER", "WARNING", or "CAUTION" in accordance with the label on the original container (DANGER for Sporax).

Whether or not this same guidance would apply in your county is something that should be discussed with the local County Agricultural Commissioner.

The second question is whether this is a practice that should be allowed at all. Baggies are normally considered food containers, so really should not be used for storing pesticides, even temporarily (refer to Q.29). The members of the public who are given these bags should receive the same product-specific safety training as any other applicator, so that we can be somewhat assured that they know what to do with the Sporax and how to safely handle it. If this is done, it would be desirable to get them to sign a training document as well as a liability waiver. In addition, the person who issues the baggie to the public would also have to be trained as a pesticide handler. There would also have to be a place near the office that issues the baggies that is correctly set up to store pesticides.

A better alternative would be to have Forest Service work crews periodically visit any areas open for woodcutting and re-cut any new stumps and apply borax at that time.

31) Does borax use have to be recorded in FACTS and reported as a pesticide use?

YES.

Sporax and Cellu-Treat are pesticides and so have requirements for reporting use. Use of both should be coded under FACTS activity code 8100 (Disease Control). Reporting borax use in FACTS will meet the requirements for annual pesticide-use reporting through the Forest Service. In addition, all use of borax must be reported monthly to the state of California through the local county agricultural commissioner's office. If borax is being applied as part of a contract, it is the contractor's responsibility to report the use to the county. Check with your county agricultural commissioner on the process used in that county to report pesticide use. There have been recent incidents where county agricultural commissioners have stated that borax use does not need to be reported. This is not correct, and the issue has recently been addressed by DPR in communications with the counties.

County agricultural commissioners should accept any borax pesticide use records that the Forest Service or a Forest Service contractor provides.

32) There seems to be some confusion with timber sale purchasers or other Forest Service contractors whether they should obtain and use their own Operator Identification Number (OIN) when reporting borax use in the specific county they are harvesting in or if they should

be using the OIN that the county has given to the forest?

Some background on the OIN - Prior to the purchase and use of pesticides, the operator of the property (or the operator's authorized representative) shall obtain an OIN from the agricultural commissioner of each county where pest control work will be performed. The OIN is good for a period not to exceed 36 months. The operator of the property means a person who owns the property and/or is legally entitled to possess or use the property through terms of a lease, rental contract, trust, or other management arrangement.

There is NO requirement for the USFS to obtain an OIN or submit use reports to the CAC, and the logging contractor CANNOT make use of any OIN issued to the USFS to purchase or report pesticide use.

An OIN is required if the logging contractor is exempt from obtaining a PCB license (See Q 8). Consistent with the definition of "Operator of the property" in 3CCR 6000, once the logging contractor is legally entitled to possess the timber stand through the contract with the USFS, the contractor in effect becomes the operator during this short period of time. A pesticide application to stumps **is an agricultural use** as defined in FAC section 11408, if it occurs the day the crop is removed from the field. If the logging contractor is exempt from obtaining a PCB license, and wishes to use pesticides, including Sporax or Cellu-Treat, it is required to obtain an OIN from the CAC prior to use, maintain pesticide use records, and submit monthly summary pesticide use reports to the CAC [See 3CCR sections 6622(c)(1), 6624(a)(1), and 6627(a), respectively], consistent with Compendium 1, Chapter 4, including a map of the use reported.

If the logging contractor is a licensed PCB, and the only pesticide applied by the contractor is a borax application **in a non-production agricultural use sub-category**, per 3CCR section 6622(a) (after the day the crop is removed from the site), no OIN is required. The logging contractor should be registered annually with the CAC.

33) If treated stumps are re-cut at a later time (for example, flush cut in a campground), does the re-cut stump need to be treated? How long after initial cutting and treatment do we not have to consider a retreatment at the time of the re-cut?

The quick answer is that if a stump was treated, it should be re-treated if re-cut. However, there are a lot of 'ifs' involved. If the re-cutting is delayed for so long that when done the stump has dried out, or is starting to break down, a case could be made that the new surface would not be

hospitable to spore growth (too dry or too much competition from other fungi). But how long that would take is not certain, dependent on weather, location, soil water, underground root connections between trees, etc. If the re-cut surface is absolutely dry because of the passage of time since the tree was felled, the risk is greatly reduced. However, if any moisture is present on the stump when re-cut, the risk of infection is still there and therefore a re-treatment should follow.

The borax acts as a surface barrier and does not create a deeply treated stump. There is some penetration of the stump by borax, but it is very minor. So, the effects of the initial treatment are likely lost with the re-cut, and the decision to retreat should focus on the condition of the newly exposed stump surface.

If the time period between the initial cutting and the re-cutting is a matter of a few weeks, and you are certain that you know which stumps will be re-cut, you could delay applying the borax until the stumps are re-cut. That should cut down on costs and chemicals. However, if you are uncertain as to which stumps will be re-cut, or whether they actually would be re-cut, then a treatment at time of initial tree falling should be done.

34) How do I go about purchasing Sporax or Cellu-Treat?

Sporax is NO LONGER available for sale, however back-supplies can still be used in accordance with the label. Cellu-Treat is not currently available from any in-state suppliers. Cellu-Treat can be ordered on-line at <http://cellutreat.com/>. Cellu-Treat is sold in 25 pound buckets and currently costs around \$80 plus shipping costs from Tennessee.

35) How do I fill in the blanks in contract clause C(T) 6.41, Felling, Bucking, and Limbing?

Most of the blanks are intended to come from the project's NEPA document, where design criteria for the project should include things such as which stumps to treat, any untreated stream or sensitive area buffers, nearness of predicted rain, or how to handle spills. Not all projects will have that level of detail concerning their borax applications, so with that in mind, consider the following to assist in filling in the blanks:

Buffers - in most cases the buffer for treating with borax will be the same as the harvest buffer (i.e., if the nearest stump to the creek is 25 feet away, use that). Since borax is ubiquitous in the environment as borates and boron, and since the borax we are using is applied specifically to

stumps, and not to the forest floor; the amounts that may find their way into streams would likely be much less than the background figures for boron/borates in the water. This means that a minimal buffer would be sufficient to protect most live creeks in most settings; certainly no more than 5-10 feet would be necessary. The national borax risk assessment can be used to provide some guidance. The risk assessment shows little risk to the aquatic environment or nearby vegetation from the normal application of borax, so a lower limit of zero feet (no buffer) can be an acceptable figure. Refer to Section 4 of the risk assessment. This assumes that BMPs are in place that don't allow anyone to cross a live creek with borax; not to misapply it anywhere but on the cut stump; not to apply it during heavy rain, etc.

Rainfall - Borax should not be applied during a driving rainfall, as it is more likely that it will be washed off or at least some of it will move off the stump into the nearby environment.

Therefore a period before rainfall is probably prudent. Since normally the latest a weather forecast can be obtained is about a day ahead of time, 24 hours would make sense as a default.

Spills - Assuming the NEPA document is silent on spills (which it shouldn't be, as a safety plan is required when planning for the use of pesticides (FSM 2153.3)) check the Forest Spill Plan to see if that provides guidance. If there is no help there, then anything from a pound to 25 pounds (1 bag or bucket) could make sense. Consider using a figure near the lower end, as this should provide you with a good understanding of how safe and responsible the contractor is. Any spill of borax onto land should be cleaned up, with the material used as intended. As for how soon it should be reported, it should be the same as one would report any other serious contract breach or accident, certainly no longer than 24 hours, and probably considerably shorter.

36) *Am I required to post warning signs around the areas that are treated with Sporax or Cellu-Treat?*

There are no federal or state laws or regulations that require the posting of warning signs around areas treated with Sporax or Cellu-Treat for the purpose of heterobasidion root disease prevention. There are requirements to notify other employees and those working on the forest (e.g., contractors, concessionaires) if they will be within ¼ mile of the treated area (CCR §6618(a)(3) and (4)), but this can be accomplished in other ways (verbal, written, etc). Posting of warning signs around treated areas is an option for worker notification (CCR §6618(a)(5)).

It is fairly common to include in NEPA documents the requirement to post all treated areas. If

this is in the NEPA document, then the area will need to be posted. The duration of posting should be specified in the NEPA document as well, since the Sporax and Cellu-Treat labels do not provide that information.

37) I don't see a Restricted Entry Interval (REI) on the Sporax or Cellu-Treat label, or anything about Agricultural Use Requirements that I am used to seeing on pesticide labels. Why are these missing?

Since borax is applied to the cut stump after the tree is removed, it is considered for purposes of state (and federal) regulation to be an application to a post-harvest agricultural commodity. As such it is exempt from the Worker Protection Standards (WPS) (refer to 40CFR170). The requirement to describe an REI is part of the WPS, and since this use of borax is exempt, no REI is required to be listed on the label. Similarly, the Agricultural Use Requirements, normally an outlined box on most pesticide labels, is also a WPS requirement and therefore is not included in these borax labels.

38) Do I need to notify Forest Service employees not involved in the application of borax about any applications and if so how do I do that?

Yes, Forest Service employees do need to be notified about any pesticides being applied to their work area (including the forestlands). This is part of the pesticide regulations. Because the use of borax to treat stumps is not covered by the EPA Worker Protection Standards (refer to Q. 37), the requirements for posting that would result from using pesticides covered under the WPS are not in effect. However, California state regulations (CCR §6723, 6761) require the following information be provided to employees who might be handling pesticides or working in or within ¼ mile of any area treated with pesticides. The best (and easiest) way to satisfy this notification requirement is to set up a central bulletin board in the office (at the ranger district office as a minimum) and let everyone know where this bulletin board is. Then you will need to post the following information at this site (note that these minimal requirements only apply to borax use; if other pesticides are being used that fall under the WPS, additional posting requirements exist):

- A copy of a completed written Pesticide Safety Information Series leaflet (PSIS) A-8 - *Hazard Communication Information for Employees Handling Pesticides in Agricultural Settings* and a PSIS A-9 - *Hazard Communication Information for Employees Working in Fields*. These forms can be downloaded from the DPR website at <http://www.cdpr.ca.gov/docs/whs/psisenglish.htm>. Both need to be completed before being

posted.

- A copy of the Material Safety Data Sheet (MSDS) for either the Sporax or Cellu-Treat product (or both if both have been used).
- A notice explaining where an employee could find the pesticide-use records for the treated areas for any pesticides applied over the last two years, or a posting of the pesticide use records for the last two years. Note that if the files are elsewhere, they should be hardcopy and not in electronic form. This pesticide use information shall be updated within 24 hours of application and shall contain, as a minimum:
 - Time and date of application;
 - Location of property treated (township/range/section or other identifier);
 - Species and diameters of stumps treated (e.g., all pine stumps > 14 inches);
 - Total acreage treated at the site; and,
 - Product name, EPA registration number, and active ingredient, and the amount used at that site.

39) Is there any training required of employees who might be working in areas already treated with borax (not the applicators, but others)?

Yes, employees who might have to work in areas that have been recently treated with any pesticide, including borax, need to have training on pesticides as outlined in CCR §6764. This training can be completed as a tailgate safety session, or more formally. Once completed, this training is good for 5 years. Training needs to be documented. A written training plan that provides the basis for this training is available from Stacey Clark, the regional pesticide-use specialist.

40) What do I do with empty bags or pails of Sporax or Cellu-Treat?

Once you have shaken out the bags that held Sporax or Cellu-Treat they can be disposed of in the normal trash. They should not be burned, as these bags have plastic layers to prevent moisture absorption. Plastic pails that held Cellu-Treat should be triple-rinsed and the rinsate used as the water in new Cellu-Treat solutions. Once triple rinsed, they should be made unusable and then can be disposed of in the trash or recycled.