

**Public comments for the proposed annosum root rot preventive treatment guide - August 5, 2012**

Comments

**I. General Comments**

Most WCFA member counties with a significant pine resource feel they have an obligation to protect the public resource and therefore are requiring stump treatment if there is sufficient risk of infection. The level of perceived risk varies from county to county. Some of those requiring treatment are within 25 miles of a stand known to be infected with Annosum and some are not. Some counties currently provide the chemical product for stump treatment as part of their contracts. Some counties also provide sprayers for hand application of fungicide treatment.

Counties acknowledge there is an additional cost to timber purchasers when stump treatment is required. Several counties expect they will receive lower stumpage revenue when treatment is required and they are willing to accept that revenue loss in exchange for precautionary protection of the resource.

There is also concern regarding maintaining a steady, year-round, supply of raw material for Wisconsin's industries reliant on pine. The need for continued discussion among members of Wisconsin's forestry community and additional research regarding the issue of annosum root rot is evident.

Development of fungicide application guidelines for winter harvesting will not be an easy task. We offer assistance if our involvement would be beneficial.

WCFA is supportive of the proposed guide as it retains flexibility for county forests and private landowners. The proposed guidelines and recommendations appear reasonable. Wisconsin's County Forests will continue to provide necessary protection for our pine resource to help ensure future healthy forests to the best of our ability.

Currently, there is inconsistency in field level enforcement between and within geographic regions of the state. Many foresters have varying interpretations of the current Annosum policy that they communicate to landowners. Any future policy needs uniform implementation and enforcement statewide.

After attending the public meeting in Wisconsin Dells, having reviewed the posters, some of the literature and the guidelines it is our recommendation that implementation of the guidelines should be delayed until the following issues are addressed: 1) There was an absence of an analysis of the economic impacts that Annosum Root rot could pose. While we understand that these numbers could be quite large and that presenting them would be considered, by many, to be self-serving, none the less, the absence of this analysis questions whether or not the response is warranted. 2) The approximate treatment costs of \$2-5 per cord and the economic impacts to both the logging and forest industry can be a significant cost. Has there been analysis of what this cost might be? Particularly, has there been a costs analysis based on 5, 10, 25, or 50 mile treatment areas. In this analysis please understand that treatment guidelines, whether they are voluntary or mandatory and whether they are limited to one or all ownerships, become in reality something that a logger has to do to remain in business. Any analysis should take into account the costs for when treatment is applied to state lands, as well as, to other ownerships. 3) Who will pay? The lack of any recommendations to the state on how to compensate the logging community implies that this will be simple another cost of doing business on the part of the logging community. 4) What are the follow-up plans on the part of the state of Wisconsin in expanding research efforts and to monitor the impacts of these guidelines?

Capacity to treat Annosum in the logging community will be increased to meet the need if landowners (including Feds, Counties, and State) require the treatment. Pine thinnings are about the only game in town during the summer logging season. Why would we risk seriously harming the long term productivity of these stands for the short term gain of not treating these stands during harvests in the next year or two?

I agree with all of the Annosum concerns outlined in the attached letter from industry. I strongly believe more research needs to be done and results from ongoing research need to be concluded before we start implementing the fungicide spraying guidelines. The proposed guidelines will have large scale economic impacts on the logging community, especially the smaller logging businesses that are already struggling to get by. Annosum was first discovered in Wisconsin nearly 20 years ago and is still not having large scale biological or economic impacts on our forests. However, I agree it is a disease that could potentially become a more widespread problem in Wisconsin, and one that will require us to study and monitor it for years to come.

Survey for the disease before timber sales are sold on state land. We have already been doing this on the Northern Highland - American Legion State Forest with Brian Schwingle. All pine pocket decline areas are surveyed with samples sent in for analysis. If Annosum is found, then require spraying before the stand is harvested to prevent the spread. This approach prevents the spread of Annosum and would greatly lessen economic concerns to loggers across the state until Annosum research can be completed.

I can't stress enough how important it is to protect the resource that is so valuable to Wisconsin citizens. At the very least, we should use the proposed guide as presented in Wisconsin. After the initial investment in equipment and the one day training, this preventative treatment is a small logistical inconvenience to loggers. The primary financial cost is to landowners in terms of a small reduction in stumpage price paid by the loggers for conducting the treatment. Foresters are affected as technical advisors. Their job is to get the correct technical information to the landowners. We are all responsible for managing our forest resource and should all take responsibility for protecting that resource. Preventative measures are small compared to the alternative of not treating ... the possible spread of an incurable disease to the forest resource. This would have a much greater negative effect on all.

When a situation such as this disease arises, we need to take some action to minimize the damage. It would be nice if we had all the research we needed to support a course of action. In the absence of that research, we do the best with what we can. The results of research conducted in other parts of the country do not necessarily apply in Wisconsin. Our forest health professionals recognize this as I have been witness to their professionalism and science based decisions.

Minimizing the damage by applying stump treatment has caused some concern throughout the logging community. The forward thinking loggers have taken the steps necessary to fit their machines with spray equipment, taken the class, and passed the test to apply the treatment. It can be done and is being done successfully by many people in the forestry community.

The biggest issue we see with the proposed Annosum guidelines is the lack of research. We have witnessed too often when voluntary guidelines get treated as mandatory and the costs get passed to industry and the logging community.

I am an advocate for a very strong preventative treatment regime in regard to Annosum. I am a private business man in the forestry industry and am extremely concerned as to the long term negative effect put upon the forest resource if we do not have a strong policy for preventative treatment for this disease. As a consulting forester I have over the past few years administered dozens of timber sales on private land for thousands of cords of timber and tens of thousands of trees treated. I do this through the timber sale contract I write on behalf of my clients. The logger is required and simply pass the cost on to the landowner via a couple of dollars per cord less in stumpage price. The good loggers I use do not complain. As a matter of fact, some of them use their preventative application as an advantage - a selling point for their business to differentiate themselves from the "not as good loggers". These are not "good" loggers, these are the best loggers. They have a strong reverence for the land and the future of the forest resource.

Many of my clients (landowners) are not aware of the disease or the preventative treatment. But once I inform them, there is no hesitation - - they want the preventative treatment - - even if they do not get as much for the timber. The good news is that the word is getting out to a few. Some landowners are actually asking for the treatment before I even bring the issue up in our discussion.

This system is working fine. And on a large scale. And by the people who are quietly going about their business of practicing forestry, sustainably, for the betterment of the resource. Please do not simply listen to those who are in it for the short haul under the guise of some professional organization or group representing "all" of "us".

First, NewPage recognizes the importance to protect the coniferous forest in Wisconsin from the potential impact of Annosum root rot and have been treating stumps on a regular basis on our sales in identified risk areas. We also understand the DNR's desire to pro-actively implement some preventative measures to address high risk areas in the fight against Annosum root rot as soon as possible. NewPage also agrees with you that any guidelines developed need to be "*scientifically-sound, based on current scientific knowledge, should address known 'High' risk exposures, and should be operationally implementable*". If we felt that these guidelines met all these criteria, then we could accept them as written. However, based on the information we received at the partner/public listening sessions (Green Bay, Wausau, Wisconsin Dells), and reviewing all the other available literature on this topic, we have concerns about the proposed guidelines as currently written. ... it is apparent that there is more research needed to better understand this fungus to refine and enhance guidelines for the future. We support the need for research and suggest a consortium be established that is represented by landowners (large and small), loggers, forest products companies, DNR and academia to identify and prioritize research needs and explore ways to fund this research.

Many of the logging contractors I work with, who take the long view, adapted their machinery to apply prevention materials several years ago. Short-sighted people will always resist and delay.

While the need for Annosum treatment must be justified by sound science, that should not be an excuse for not using the best available evidence we have today. To argue otherwise is just looking to avoid action. Just as disproportionate caution is not desirable, neither is sticking one's head in the sand.

I have been reading several articles relating to the development of guidelines related to preventing Annosum infection by treating the stumps with Sporax or Cellutreat. Some of the things have caused me great concern. As practicing professionals, it is in my view irresponsible not to take reasonable measures to prevent harm to our forests. To this point it is my understanding that treating stumps within 24 hours of cutting has been very effective at preventing Annosum infection. Additionally, restricting cutting to period where the temperature does not achieve 40 degrees Fahrenheit also is effective at preventing Annosum infection. Since we know that Annosum is a long term disease that has detrimental effects on the forest and it appears to be spreading in Wisconsin, we look to the Department for guidance on how to implement reasonable and necessary prevention measures. I hope the Department still looks to the practitioners in the field to follow these guidelines.

In my experience landowners are very interested in the stump treatments in order to prevent Annosum infection. I have not had one landowner to this point say they didn't care about the risk of Annosum infection and allow thinning without stump treatment. Once they were provided with the information they needed to make an informed decision all landowners chose the path of treating their stumps in plantations.

There is a cost associated with treatment. I agree that this cost should be born by the landowner. This can be done through the landowner providing for the application or treating the stumps themselves or by having the stumps treated as part of the harvest operation by the logger. Adjustments to stumpage would be appropriate to pay for the treatment. Since the application is to be made within 24 hours of cutting it is much easier to have the treatment done concurrent with the harvest by the loggers. Many landowners do not actually live on their property and to coordinate cutting and treatment can be very difficult if these operations are done by different people.

Finally, I am aware that some are arguing the science of the disease and citing other areas of the world in which Annosum behaves differently than in Wisconsin. To me, forestry has always had to operate in an environment of incomplete and imperfect knowledge. This is nothing new. Traditionally when faced with a need to decide on a direction to follow in forestry practice foresters have opted to follow a more conservative approach until better information is gathered. To me this is the same scenario. Twenty years from now will likely have more information than we have today and researchers will be able to provide better information. But until that information is developed we, as responsible stewards of our forests, need to follow the course that provides for the protection from Annosum – follow the guidance that is provided to us.

## II. Guide Content

### 25-mile Radius

... disagreement with the 25 mile radius proposed by the memos below. Since it often times takes years to discover the first infection in a County, it is almost assured that there are already more out disease pockets out there by the time you confirm the first site. If you block out a 50 mile radius you basically include all of the State except the far NW, which seems reasonable if you assume that there must be a significant spore load and/or unknown infections between the narrow gaps from the Shawano/Oconto infections and the Woodruff Area infections.

Does anybody doubt that we will have Annosum virtually everywhere in the State within the next 2 years based on our experience of watching it spread the last 2 years? Treatment of any pine thinning should be recommended now regardless of where it lies in the State. Failure to treat now is just inoculating stands to make sure we find it when we come back for the next thinning.

From past presentations on annosum it is my understanding that annosum is or may be present in the soil throughout much if not all of the state and that it basically infects stands when conditions are right. It is spreading rapidly through the state – it was only discovered in Shawano, Oconto, and lastly Marinette counties within about the last 3 years. It has long range (up to 50 years) impact on a stand once it is infected, this dramatically impacts the species that can be planted or grown successfully on an infected piece of property. The disease has jumped more than the 25 mile radius of "known" occurrences in the past. Oconto county to Marinette county was approaching a 50 mile radius. The spot northwest of Wausau is more than 50 miles from any currently "known" occurrence. If all of this is accurate, and I do not know how much of this is theory and how much fact, I believe that possibly with the exception of the extreme northwest corner of the state we should be recommending the annosum fungicide treatment for the entire state.

The 25-mile radius seems reasonable. Most of the current infections resulted from thinnings 7-10 years. It's likely there are more infected stands from the past 10 years of thinning that remain to be discovered.

The 25 mile radius is too large. There is no evidence to warrant such a large area to be designated. More research is required to determine a distance rather than by an arbitrary number and this is noted in the proposed guide. A 10 mile radius would be more feasible to identify at this time. Industrial owned lands in central Wisconsin have had thousands of acres of thinned/harvested red pine plantations over the past two decades. Only one Annosum spot has been identified on these industrial lands in central Wisconsin.

This seems excessive when we have no verifiable scientific proof that the spores travel this distance. And even if they are capable of traveling that far, are they all viable? How many spores need to land on the stumps for infection to occur? A 10 mile radius would seem much more "common sense" and no more arbitrary than the 25 mile radius.

<p>I think a monitoring program is appropriate and excess spraying and chemical on the landscape will have negative effects on the pine producing and wood industries. I am not sure what the treat area should be for a surrounding disease barrier. Could we take another look at the safe distance? Our concern is for the resource without being to restrictive and time consuming to manage it.</p> <p>WI DNR literature states that most spores are deposited within 300 feet. A 25 mile buffer distance seems very unreasonable if most spores only travel within 300 feet. There may be a chance that they can travel much further under optimal conditions on certain days, but what is the probability a stand will be infected 25 miles away? I believe I read there is an ongoing study being done on spore dispersal....let's find out the results before we implement a 25 mile buffer.</p> <p>More research is needed on the treatment areas. Once spores are found, there seems to be a lack of knowledge on the radius around the site that is at risk. Is it 2, 5, 10, 20, 50???? Again, why burden the logging community with un-needed restriction when not necessary</p> <p>Currently it is recommended that all sites within a 25 mile radius of any infected annosum sites receive fungicide treatments. It is our understanding that this radius was established without any real specific data to support if this would be effective or not. Current data shows <i>that "more than 99% of the spores are deposited within 300 feet of their origin"</i>. There is no data available as to the number of spore hits needed to infect a stump. We feel that addressing 99% of the potential spread (regardless of the remaining spores) is a significant first step forward from the current status and addresses the need to take action now to combat the spread in High Risk areas.</p> <p>Considering this information we feel that a much smaller radius (1 mile) should be considered unless data can be gathered to support the 25 mile radius.</p>
<p><b>Basal Area</b></p>
<p><b>Is the stand more than 50% pines (red, white, jack)?</b> Should include here what measure is used to decide 50%. Is it basal area, volume, diameter distribution, trees/acre, stump diameters more than a defined size? I found the measure used on Page 3, but for efficiency in use, the measure should be included here. I am not convinced that just BA of pine is a adequate measure. In a poorly stocked pine stand with low BA, root grafting may not be a problem. I suggest a measure that involves percent of fully occupied stand based on stocking charts which relies on BA, diameters, and trees/acre.</p>
<p>Treatments should also be advised for stands with less than 50% pine when that pine component will continue to be managed.</p>
<p><b>4. Is the future desired stand more than 50% pine?</b> Again 50% of what? I suggest a threshold based on a percent (50%) of a fully stocked stand.</p>
<p><b>Grace Period</b></p>
<p><i>Is one year appropriate? This would seem to be dependent on season of harvest.</i></p> <p>We have been discussing Annosum prevention for several years at this point. This isn't something new and should not be a surprise to knowledgeable people. Excessive delays in implementation are not warranted.</p>
<p><b>Host Species</b></p>
<p>Why weren't fir and spruce stands included?</p> <p>What about for multi-aged stands of balsam fir, which are common here? Often, the oldest age class is harvested and the younger age class is retained.</p> <p>Is there potential for spread from cut balsam stumps to retained balsam trees?</p> <p>Is this guide intended to apply to Christmas tree plantations? If not, it should. And then many more species of pine should be included, i.e. Scotch pine, etc.</p> <p>I recall earlier comments about risk to spruce also? Not covered here?</p> <p>From talking with several forest health specialists, Annosum has only been found in Wisconsin to originate in pine plantations (almost entirely red pine). Why implement guidelines then in other natural pine stands? I have read that native fungi can compete with Annosum and perhaps outcompete it. It would make sense then that Annosum is almost exclusively found in plantations, many of which were abandoned farm fields, and are potentially still void of native fungi that would compete with the disease. More research needs to be done in this area to see if native fungi are outcompeting Annosum and preventing it from entering or perpetuating in natural stands.</p> <p>Treatment should also be advised for spruce/fir stands where spruce/fir will continue to be managed.</p>
<p><b>Merchantable Size</b></p>
<p><b>The minimum tree size for treatment is "merchantable size" or "pole-size" trees.</b> This statement should be revised to identify a "minimum stump diameter" that this guide would apply to. It's the cut stump surface that matters, not size of the cut product. Again to reinforce, is this intended to apply to Christmas tree plantations since the merchantable diameter of Christmas trees is typically smaller than pine pulpwood. What is the minimum diameter of cut pine stumps that significantly increases the risk of annosum infection?</p>
<p><b>III Guide Implementation</b></p>
<p><b>Deviation</b></p>
<p>Change the verbiage to State Land Managers <u>will be allowed to deviate</u> from the guidelines with written justification rather than "maybe allowed to deviate from the guidelines written justification". The word "maybe" implies a less likely deviation from occurring. There are State owned properties in Northern Wisconsin (Brule River SF, Governor Knowles SF, Flambeau River SF, Black River SF, NHAL SF, Point Beach SF, KMNU SF and other state-managed lands) where Annosum has not been found in the 25 mile radius. There is a cost associated with the treatment of pine stumps that will reduce the stumpage revenue the State would receive. Each State Property Manager must be allowed to make the call on what to do.</p>
<p><b>Guided Format</b></p>
<p>The purpose statement should indicate if this treatment guide is proposed for year round reference or if instead intended for distinct seasons, months, or weather conditions. It is suggested that winter treatment recommendations are not currently included but it is not clearly stated if that means by default, this guide applies year round?</p> <p><b>A. Treatment is recommended.</b> This statement should be expanded with a brief explanation of what treatment is recommended, i.e. "Treatment to cover the cut stump surface with Sporax granules (% coverage) or a xx% solution of Cellu-Treat within xx minutes/hours of initial exposure is recommended for all pine stumps greater than xx inches in diameter."</p>
<p><b>Non-State Lands</b></p>
<p><b>On County Forest lands - No</b> I support allowing local discretion by each county administrator or county committee to decide on prevention strategies.</p> <p>I do agree with making the treatment a recommendation on private land, but feel that it is incumbent on any DNR forester, consultant forester, or logger to make the landowner aware of this disease and the treatment to help prevent it from infecting their stand. I do not believe the treatment should be mandatory on private land.</p>

How will this policy affect the MFL? Can mandatory application be implemented into the plans? Even if not written, some field level foresters are already mandating/highly recommending application to both MFL and non-MFL landowners. This cost is currently absorbed by the industry.
Agree that private landowners should be given the information on Annosum and they can decide if they wish to pay for the treatment of the pine stumps. DNR foresters should not be able to reject an MFL cutting notice if the landowner wishes not to treat as long as the MFL parcel meets the minimum stocking guidelines.
Agree with the recommendation that each County Forestry Committee, County Board should decide on their course or action for their County Forest.
I have no issue with recommending spraying to private landowners. However, it needs to be made clear to DNR foresters' that they cannot deny an MFL Cutting Notice because a landowner decides he is not going to pay the cost of having his stumps sprayed. I can see this becoming a big issue, especially in a few counties around the eastern part of the state.
How does this policy effect MFL lands? Can mandatory application be implemented into the certified plans? This cost is currently absorbed by industry. The landowners should be forced to absorb, or help absorb, the costs associated with Annosum.
The guidelines are currently written to only be required on State-owned Department lands. The guidelines state that they will <i>be recommended on private lands but not required</i> . It is our concern that these guidelines will become a MFL certification requirement similar to the way BMP's for Water Quality have been addressed by SFI and FSC certifiers. Our concern here is that this will greatly increase the scope of the mandatory application of these guidelines and take away the flexibility of landowners to apply these guidelines or not.
Further clarification will need to be obtained to be sure this exemption for private landowners is maintained. Some sort of statement from the certifying bodies (SFI and FSC) would satisfy this need.
<b>Process</b>
I do not understand the need for public input in this case. On this HRD issue (i.e. annosum guidance), I see it as a waste of government time and money. I truly fear we are turning into the U.S.F.S., an agency that nearly everyone knows is completely broke. On the HRD topic, why in the world would we solicit additional public input when (a) we've had an extremely diverse taskforce work (i.e. public input) on a set of recommendations for a number of years and (b) the recommendations the taskforce developed are LESS stringent than what the DNR'S FH group currently recommends. If the point of having public input is to allow people/companies to be heard only, then why have a session if no action will come of it? If the point of having public input is to allow for change, then why was a multi-year taskforce employed to work on the topic? Why didn't the DNR's FH group come up with the recommendations and then go for the public input. I'm not "for" small government. I'm not "for" big government. I'm for efficient government that serves the people well, and <i>my opinion</i> is that soliciting public input on this recommendation is going over the line. I'm not for duplicating efforts.
<b>IV. Needed improvement/data</b>
<b>Applicatoir Certificate</b>
Currently there are only 20 or so individuals DATCP certified that can run a timber harvester. We (industry) need time to educate/certify many more operators to meet demand if this policy becomes mandatory statewide.
Applicator license requirement: The state needs to review the need for operators to possess a chemical applicators license for the application of the Cell-u-treat/water mix. This is a non-toxic application and the expense of sending employees for training and testing is a huge economic burden on owners/employees. Has there been an economic analysis on this cost, and who is expected to absorb this expense. We are losing suppliers rapidly in the timber industry, and additional economic burden will increase this number.
Although this is beyond the scope of these guidelines and not included at this time, training and certification is still a major issue dealing with handling and applying the fungicides. It is currently not practical for loggers to be required to become certified to apply these fungicides. The products used to treat the stumps are nearly inert and having to spend the time and money to become certified for applying them is very unreasonable.
1) In this case the DNR needs to join all others in discussions to pull this certification requirement. And/or 2) Takes steps to significantly reduce the testing/certification complexity for this simple application.
We have had good success with many of our local loggers being willing to purchase sprayer attachments for their equipment and getting certified as Commercial Pesticide Applicators. One problem I'm hearing about is that some of the loggers have had trouble with the test required to get certified. I question the need for certification to apply what is basically soap to cut stumps. Either way, we do have loggers that have invested their time and money into doing the responsible thing – treating for Annosum prevention- and we should encourage this type of operation.
WCFA's Board of Directors and the County Forest Administrators have gone on record questioning the requirement of a pesticide applicator's license for the application of Sporax products. Along with the responsibility of resource protection we are cognizant of the burden this requirement places on our customers. We understand this issue is outside the scope of the proposed guide; nevertheless, it appears to be the main reason behind resistance from timber harvesters to take on the responsibility of fungicide application. We urge WDNR to continue working with WDATCP regarding the requirement for an applicator's license when applying fungicide treatment for Annosum root rot in pine stands. If we can assist in any way with this effort we are willing to do so.
<b>Economic Impact</b>
In my experience, treatment has had no noticeable effect on stumpage prices and has not adversely impacted sustainable management of conifers. In fact, treatment supports sustainable management for the future.
Broad-based implementation without complete Lake States research (which is currently not ongoing) needs to include economic impact as part of the study.
<b>Treatment Cost</b>
Regardless of the thoroughness of the study, general public will interpret this as a necessary/mandatory practice...more of the cost of application should be absorbed by the landowner and NOT industry as seems to be the current reality; this is much easier said than done.
Costs to modify existing in-woods equipment will be significant for some and unattainable for other loggers.
Landowners need to be the ones accepting the cost of annosum, not loggers.
All the cost of treatment is being placed on the timber industry, namely loggers and softwood consuming mills. Cost of the chemical has gone up \$30/5 gal pail from last fall to this spring. The WDNR is making record dollars on softwood stumpage. The WDNR should consider covering part of the cost, such as supplying the chemical, on state-owned property. If the WDNR had to pay the entire cost of the spraying, there would likely not be so much eagerness to spray every acre. The property owner (county, state, federal) should absorb some of the cost.
Treatment Costs: There is uncertainty of the true cost of this treatment. The estimates report that the actual cost is between \$2-\$5 per cord. Expensive attachments are required for today's high tech equipment. Hand applications seem to be economically improvable
<b>Treatment Effectiveness</b>

How effective is spraying really, when damage is being done to seedlings & saplings that can also contract the disease. No way you can or should be expected to spray them. So why bother spraying at all on stands without annosum.

More studies need to be done to make sure that what we are doing in the field is actually going to work. Real life and the lab may differ. There have been some studies in other regions that show that treated and untreated results are very similar. The cost of treatment is high and we need to know if it is needed.

#### Winter Treatment

Establish a range of dates within which fungicide must be applied. Suggestion... March 15-November 1st when the chance is high that ambient temps will allow Cell-u-Treat/Water solution to be used and stored on site without freezing.

Additional study to determine rate of infection at temperatures less than 40 F. We know spores are present, but what risk does this pose versus the warmer months? There is no conclusive study at this time due to lack of funding as we understand it.

There should be a cut off date, similar to oak wilt, when you should spray and not. I'm talking about during the winter.

More research needs to be done before any treating is done in the winter. All current research and documents state that treatment is not done below 40 F. I feel that we should pick a cut off date to stop and start treatment. (Just like oak wilt)

Discontinue requiring any spraying during the winter months (Dec, Jan, Feb) until (1) a suitable, less expensive solution can be found to use as a carrier and one that doesn't turn to slush, and (2) there is more research done to see how far spores travel in winter and if they are as viable. The last paragraph on Page 3 of the Proposed Guide indicates there isn't enough information on dissemination of the spore in winter.

...with the additional choice of changing the winter temperature to at least 40 degrees, which does add an element of risk, but I believe to be reasonable. My first choice would be to agree to established dates, as we do in oak wilt.

More research is needed to review the effectiveness of Cell-U-Treat effectiveness at temperatures less than 40 degrees F.

At this time there is simply not enough data available to justify the cost and effort to treat stumps in the winter. There are major questions about at what temperatures the spores are active and how they can be absorbed in the winter through the stumps. It is our understanding that in other countries where the annosum is present, winter fungicide applications are not recommended. Therefore – while it is theoretically possible for the spores to be somewhat active in winter – this is clearly not a 'High Risk' period or as high of a risk as many other periods. Even if the data supported this need, we don't have an effective process to do this. There are major implementation problems with applying the currently approved fungicides during frozen conditions that make this a significant operational challenge.

DNR guidelines should use a similar system such as the one for oak wilt where we don't treat sites from November 1 – April 1 (as an example) until we have real scientific data to support winter treatments

#### V. Miscellaneous Comments

Annosum root rot = destructive diseases of conifers. William Albrecht put it this way: "Insects and disease are the symptoms of a failing crop, not the cause of it. It's not the overpowering invader we must fear but the weakened condition of the victim." I found myself believing the reason I have problems is a shortage of toxins, now I believe the soil is balanced for the propagation of Weeds, Insects, Disease, and wrong practices / amendments were used. My Plants were not healthy and change is necessary. The next advanced level / type of horticulture is the use of environmentally friendly soil amendments, tools, and practices to balance the Soil to produce Healthy Plants & Nutrient Dense food and proves it with Brix, Test Weight, and others. When you balance your soil using; different test, practices and higher quality substance = results will follow like Less: Nitrogen, Thatch, Mold / Fungus, Pest, Drought sensitive = saving 1/4 -1/2 water, chemical-intensive horticulture, and Compaction. Better: The PH will take care of itself, Roots, Vigor, Storage life, Taste, Consistent results, Test weight, and (High Brix) Nutrient value. Improves soil life and it helps make humus. Is this organic or conventional farming? It takes the best of both of those and with well proven core science of soil microbiology, soil agronomy, physics, plant physiology, integrates independent science and gives us an even bigger tool box. I got sick of random results in my horticulture 15 yrs ago. Let me share more opinions to help improved quality / results. Some you likely know - Here are three basic rules / guidelines we follow. 1. Test don't quest. Use Analysis Aides = soil tests: CEC-Cation Exchange Capacity, Bray, Olson Vs LaMotte method using the Morgan extracting solution = looking for Limiting Factor. Difference of Organic Materials / Humus to prove / verifies results. Plant Health in the field: refractometer which gives reading in BRIX, a term popularized by Dr. Carey Reams. It is primarily the measurement of the carbohydrate level in plant's sap, but it also includes proteins, essential oil, probiotic, and minerals to determine the % of total dissolved solids. Sugar goes from Simple to Complex.

Now you can determine Harvest time, Quality, Quantity, and Storage at the point of sale. Better yet ask the grower to prove the Brix to you. Soil Health: (PH, ERGS, Sodium – Meters) Shovel / Screwdriver. 2. Choose Nontoxic life Promoting Materials. See & know what it's: Derived from? Analysis of?, K = Potassium Chloride / Muriate of potash / Potash 0-0-60 = depletes Humus and harms soil life, Dolomite Lime (within 50 Miles) = is low in Calcium – high in Magnesium levels = leads to compaction. High Cal Lime is =30% or more of Ca & 3% or less of Mg. Disadvantageous = Cost, Knowledge. (Programs v/s custom plan) Biolife, Hormones, Foliar, Humates/Humic Acid, Clam / Fish / Seaweed, Biodynamic, Radionics. Household = Beer, Molasses, (free) N-Pee-OK, Milk, Apply Vinegar, Yeast, Tea-grass, Organic material: Mulch, Compost, Cover Crops - Green manures (is the food for soil/organisms) = so know its quality and quantity), Think of all Elements = Periodic Table. Molecule, Parts per billion. More is not better. Dr. Carrie Reams stated "All disease is the result of a mineral deficiency". Think Energy like Avatar

There are two sites (one in Dunn County and Trempealeau County) that cannot be confirmed if Annosum was present. These sites appear to be still reference on the proposed guideline state map.

There doesn't seem to be much inter- agency communication. Each agency is developing their own solutions. The USFS did not relax the restrictions for winter spraying like the county and state.

Liability- Has any study in WI or elsewhere been given to the level of legal liability exposure we may face in the future? Example: I treat stumps in a plantation and 5 years later it still gets infected. Am I liable? This is one of many potential scenarios.

#### VI. Questions

Is the guide intended to be applied anywhere in Wisconsin?

Is a commercial pesticide applicators license required to apply Sporax or Cellu-Treat? This is important for a landowner who may consider handling the treatment themselves.

**On state-owned Department lands – Yes** Does the proposed guide apply on state owned lands year round? Who approves the written justification to deviate? State land managers?

**On MFL and/or other private lands - No** Will forest certification programs eventually require this treatment? If yes, is it currently required on certified lands in southern USA?

**If I follow this guide, will all risk of introduction be eliminated?** Do Annosum spores require cut surfaces to infect a stand? Can spores deposited on the soil also convey the fungus to a new site regardless of any harvest activity?

**3. Is the stand going to have an intermediate thinning or final rotational harvest?** Is wounding caused by pruning live branches a risk? Bough gathering? If yes, is it covered here? Are non-commercial TSI treatments cutting live pine a risk? Christmas tree harvests covered?

**Once finalized, the proposed...being established after January 1, 2013?** I'm assuming this is referring to all timber harvests on state-owned lands being established after January 1, 2013.

Borates are considered to be a preservative for homes. Since the fungus multiplies on woody material, aren't we creating a situation where the fungus will be able to reproduce for a longer period of time with a preserved stump???

Where the disease already exists, would a stronger concentration be more effective on reduction/prevention on further spread??

Since the fungus is unable to live freely in the soil, is there potential for work on eradication in known pockets?? If we are spending \$\$\$\$\$ on prevention of new pockets I can't hardly believe there is no \$\$ for work on already established pockets.