

Timber Tellings

Chemical Compounds in Foods can inhibit a Key SARS-CoV-2 Enzyme

Mick Kulikowski and De-Yu Xie, North Carolina State University

Chemical compounds in foods or beverages like green tea, muscadine grapes and dark chocolate can bind to and block the function of a particular enzyme, or protease, in the SARS-CoV-2 virus, according to a [new study by plant biologists at North Carolina State University](#).

Proteases are important to the health and viability of cells and viruses, says De-Yu Xie, professor of plant and microbial biology at NC State and the corresponding author of the study. If proteases are inhibited, cells cannot perform many important functions – like replication, for example.



Green tea has chemical compounds that effectively blocked an important SARS-CoV-2 enzyme.
De-Yu Xie, NC State University

“One of our lab’s focuses is to find nutraceuticals in food or medicinal plants that inhibit either how a virus attaches to human cells or the propagation of a virus in human cells,” Xie said.

In the study, the NC State researchers performed both computer simulations and lab studies showing how the so-

called “main protease” (M^{pro}) in the SARS-CoV-2 virus reacted when confronted with a number of different plant chemical compounds already known for their potent anti-inflammatory and antioxidant properties.

“M^{pro} in SARS-CoV-2 is required for the virus to replicate and assemble itself,” Xie said. “If we can inhibit or deactivate this protease, the virus will die.” Computer simulations showed that the studied chemical compounds from green tea, two varieties of muscadine grapes, cacao powder and dark chocolate were able to bind to different portions of M^{pro}.

“M^{pro} has a portion that is like a ‘pocket’ that was ‘filled’ by the chemical compounds,” Xie said. “When this pocket was filled, the protease lost its important function.”

Continued on Page 2

Contents

- Chemical Compounds in Foods can inhibit a Key SARS-CoV-2 Enzyme... 1
- Market Report- Sept/Oct 2020..... 2
- Chemical Compounds in Foods can inhibit a Key Sars-CoV-2 Enzyme Continued 2
- Websites of Interest 3
- Toyota ShareLunker Program Launches 35th Season..... 3
- Don’t Miss Out! Check it Out!..... 4
- Toyota ShareLunker Program Launches 35th Season Continued 5
- Transparent Wood Could be the Window of the Future 5
- Transparent Wood Could be the Window of the Future Continued ... 6
- Upcoming Events 6

Market Report- Sept/Oct 2020

Product	Statewide Ave. Price		Previous Ave. Price		Price/ Ton Difference	
	Weight	Volume	Weight	Volume		
Pine- Sawlogs	\$23.39/Ton	\$187.12/MBF	\$22.22/Ton	\$177.74/MBF	5%	↑
Pine-Pulpwood	\$6.95/Ton	\$18.76/Cord	\$6.87/Ton	\$18.55/Cord	1%	↑
Pine-Chip-n-saw	\$13.99/Ton	\$37.77/Cord	\$13.67/Ton	\$36.91/Cord	2%	↑
Mixed Hardwood- Sawlogs	\$30.53/Ton	\$274.78/MBF	\$31.64/Ton	\$284.77/MBF	-4%	↓
Hardwood- Pulpwood	\$8.28/Ton	\$23.18/Cord	\$9.21/Ton	\$25.78/Cord	-10%	↓

Texas Timber Price Trends is a bimonthly publication reporting average prices paid for standing timber in Texas. This report is intended only as a guide to general price levels. It should not be used to judge the fair market value of a specific timber sale, which may vary considerably due to many factors. It is recommended that you use the services of a professional consulting forester in managing any timber sale. Important factors affecting timber prices include the type, quality and volume of timber for sale, accessibility, distance to mills/markets, weather conditions, economy/market conditions, who is handling the sale or is buying the timber, and contract requirements by the landowner. The complete Texas Timber Price Trends can be viewed at <http://tfsweb.tamu.edu/timberpricetrends>.

Chemical Compounds in Foods can inhibit a Key Sars-CoV-2 Enzyme, Continued

In vitro lab experiments completed by Yue Zhu, an NC State Ph.D. student in Xie's lab, showed similar results. The chemical compounds in green tea and muscadine grapes were very successful at inhibiting M^{pro}'s function; chemical compounds in cacao powder and dark chocolate reduced M^{pro} activity by about half.

"Green tea has five tested chemical compounds that bind to different sites in the pocket on M^{pro}, essentially overwhelming it to inhibit its function," Xie said. "Muscadine grapes contain these inhibitory chemicals in their skins and seeds. Plants use these compounds to protect themselves, so it is not surprising that plant leaves and skins contain these beneficial compounds."

The paper appears in *Frontiers in Plant Science*. Zhu is the paper's first author. The research was supported by the U.S. Department of Agriculture.



Chemical compounds in muscadine grapes effectively inhibit an important SARS-CoV-2 protease.

De-Yu Xie, NC State University

Websites of Interest

<https://TexasForestInfo.tamu.edu>

Check out these FREE landowner tools that can assist you in making land management decisions on your property.

<https://www.TexasForestry.org>

Lobbying on various forestry and environmental issues that directly affect you, publishing and sponsoring educational events are just a few of many things that Texas Forestry Association does. Find out more about what Texas Forestry Association does for you and why you should be involved!

<https://tfsweb.tamu.edu>

Find a plethora of forest management resources and many people that can assist you in your forest management goals.

<https://tpwd.texas.gov>

Find out more information on wildlife management, hunting and fishing regulations and much more!

<https://nracs.usda.gov>

Find out more information on natural resource conservation and federal programs in your area.

MyLandManagementConnector.com

Find and connect with service providers in your area to get assistance with land management practices on your property

Toyota ShareLunker Program Launches 35th Season

Texas Parks and Wildlife

The turning of the calendar to January signals the beginning of the 35th season of the Toyota Sharelunker program. The year-round Toyota Sharelunker program offers four levels of participation for catching bass over 8 pounds or 24 inches in Texas.

“We are excited to kick off another ShareLunker season,” said Toyota Sharelunker Program Coordinator Kyle Brookshear. “Not only for the selective spawning and stocking of these world-class offspring, but also to help gather vital catch and genetic data to help our fisheries biologists better manage trophy bass populations throughout the great fisheries of Texas.”

During the first three months of the season (Jan. 1 through March 31), anglers who reel in a 13+ pound bass can loan it to the Texas Parks and Wildlife Department for the ShareLunker selective breeding and stocking program. These anglers can call the ShareLunker hotline at (903) 681-0550 to report their catch 24/7 until April 1, 2021.



Largemouth Bass (*Micropterus salmoides*)
Texas Parks and Wildlife

Anglers who catch and donate one of these 13+ lunkers earn Legacy Class status, receive a catch kit filled with merchandise, a 13lb+ Legacy decal for their vehicle or boat, VIP access to the Toyota ShareLunker Annual Awards event and a high-quality replica of their lunker fish. These anglers will also receive entries into two separate drawings; a Legacy Class Drawing and the year-end Grand Prize Drawing. Both drawings will award the winner a \$5,000 Bass Pro Shops shopping spree and an annual fishing license.

Anglers who enter data for any lunker they catch greater than 8 lbs. or 24 inches during the calendar year 2021 also receive a catch kit, a decal for their vehicle or boat and an entry into the year-end Grand Prize Drawing to win a \$5,000 Bass Pro Shops shopping spree and annual fishing license. ShareLunker entry classes include the Lunker Class (8lb+), Elite Class (10lb+), and Legend Class (13lb+).

Once a lunker is reeled in, anglers need to enter the catch data on the Toyota ShareLunker mobile app – available for free from the Apple App

Continued on page 5.

Don't Miss Out! Check it Out!

Michelle Moore, Texas A&M Forest Service

It's finally 2021! With a new year comes a fresh start, however, remote educational opportunities will likely be the primary way to disseminate information for a while longer. To better assist you in connecting and providing learning resources to your associations, here are a few links to some educational resources, videos and podcasts that you might enjoy.

Restoring the Coastal Forests of Texas:

<https://rise.articulate.com/share/kXGAWJfktMQuyeHkKP6xgrNUNJHpIQXU#/>

This interactive document gives information on tree mortality trends based on Forest Inventory and Analysis data. Information on salvage of damaged timber, utilization and recovery, and lessons learned from natural disasters are covered in this resource.

A Story on Managing Hardwoods in East Texas

<http://tfsfrd.tamu.edu/storymaps/hardwoodintro/index.html>

This document offers a plethora of information on hardwood management. Interactive maps, descriptive videos, and hardwood management tips are addressed.

Chinese Tallow

<https://tfsGIS.maps.arcgis.com/apps/MapJournal/index.html?appid=9e8ecb6dbd0a406c89464923ab83e6f0#>

This document gives information on Chinese Tallow and different control options for it.

Ask a Forester

<https://tfsweb.tamu.edu/AskaForester/>

Have you ever heard terms forestry terms like "shelterwood harvest" and wondered what they meant? Well, join Texas A&M Forest Service District Forester Jason Ellis as he explains a variety of forestry topics. Have a specific question but do not see a video that answers it? Submit your "Ask a Forester" question to communications@tfs.tamu.edu.

Trees are Key

<https://tfsweb.tamu.edu/podcasts/treesarekey/>

Trees are Key with Paul Johnson will help listeners better care for their trees. This short weekly podcast will feature a short lesson, a weekly tree highlight and upcoming tree related events around the state. Sample topics will include Why Trees are Key; How To Hire a Pro: To Help You Care For Your Trees; What do Trees Need To Thrive; Trees As Investments; and How To Water Your Tree.

Texas Forest Service Youtube Channel

<https://www.youtube.com/user/TexasForestService>

The Texas A&M Forest Service Youtube Channel offers videos covering many topics from how to plant a seedling and forest management to fire safety.

Under the Texas Sky Podcast

<https://tpwd.texas.gov/newsmedia/utts/>

Under the Texas Sky, produced and hosted by Cecilia Nasti, presents the great outdoors to listeners through the experiences of everyday people as well as experts inside and outside of Texas Parks and Wildlife. The podcast is not just about Texas Parks and Wildlife Department programs and projects. It is about the people who benefit from the work the agency does to keep Texas wild things and wild places vibrant.

Texas Parks and Wildlife Videos

<https://tpwd.texas.gov/newsmedia/videos/>

This link offers several videos covering a variety of fish and wildlife topics.

Toyota ShareLunker Program Launches 35th Season Continued

Store and Google Play – or on the Toyota ShareLunker online app at TexasSharelunker.com. In addition to providing basic catch information, anglers can also provide a DNA scale sample from their lunker bass to TPWD researchers for genetic analysis.

The Toyota ShareLunker Program is made possible in part by the generous sponsorship of Toyota. Toyota is a longtime supporter of Texas Parks and Wildlife Foundation and the Texas Parks and Wildlife Department, providing major funding for a wide variety of fisheries, state parks and wildlife projects.

Prize donors Bass Pro Shops, Lake Fork Taxidermy, American Fishing Tackle Co. and Stanley Jigs also provide additional support for this program. For updates on the Toyota ShareLunker Program, visit facebook.com/sharelunkerprogram/ or TexasSharelunker.com

Transparent Wood Could be the Window of the Future

Amy Androff, Forest Products Laboratory; Robert Westover, USDA Forest Service Office of Communication

Could looking through trees be the view to a greener future? Trees replacing the clear pane glass in your windows is not a work of science fiction. It's happening now.

Forest Products Laboratory (FPL) researcher Junyong Zhu in co-collaboration with colleagues from the University of Maryland and University of Colorado, have developed a transparent wood material that may be the window of tomorrow. Researchers found that transparent wood has the potential to outperform glass currently used in construction in nearly every way.

Their findings were published in the *Journal of Advanced Functional Materials* in their paper, "A Clear, Strong, and Thermally Insulated Transparent Wood for Energy Efficient Windows."

While glass is the most common material used in window construction it comes with a costly economic and ecological price.

Heat easily transfers through glass, especially single pane, and amounts to higher energy bills when it escapes during cold weather and pours in when it's warm. Glass production in construction also comes with a heavy carbon footprint. Manufacturing emissions are approximately 25,000 metric tons per year.

Now, transparent wood is emerging as one of the most promising materials of the future.

Transparent wood is created when wood from the fast-growing, low-density balsa tree is treated to a room temperature, oxidizing bath that bleaches it of nearly all visibility. *Continued on page 6.*



The piece of glass in the above photo was made from wood. Research work at the Forest Products Lab on using wood to create transparent windows is making great strides.

USDA Forest Service

Transparent Wood Could be the Window of the Future, Continued

The wood is then penetrated with a synthetic polymer called polyvinyl alcohol (PVA), creating a product that is virtually transparent.

The natural cellulose in its wood structure and energy-absorbing polymer filler in transparent wood means that it is far more durable and lighter than glass. It can withstand much stronger impacts than glass and, unlike glass, it bends or splinters instead of shattering.

Switching to transparent wood could prove to be cost efficient as well. It is approximately five times more thermally efficient than glass, cutting energy costs. It is made from a sustainable, renewable resource with low carbon emissions. It's also compatible with existing industrial processing equipment, making the transition into manufacturing an easy prospect.

With all of these potential benefits for consumers, manufacturing and the environment, the case for transparent wood couldn't be...clearer.

Upcoming Events

Tuesday, January 19, 2021 6:00pm-7:00pm Pond Stocking by Dr. Todd Sink, Online Course- Join us for a how-to educational program on pond stocking as we cover multiple stocking strategies for both small ponds to larger lakes. Visit https://calendar.tamu.edu/agrilifeextension/view/event/date/20210119/event_id/208172 or contact Todd Sink @todd.sink@tamu.edu for more information.

Tuesday, February 9, 2021 1:00pm-5:00pm Virtual Texas Timber Income and Property Tax Workshop- This half-day online workshop is designed for forest landowners, consulting foresters, accountants, attorneys, and others who work with forest landowners in matters pertaining to timber taxes. There is no charge for this workshop. To register visit <https://tfsweb.tamu.edu/TaxWorkshop> or contact Melissa Yeldell at (979-458-6632); melissa.yeldell@tfs.tamu.edu for more information.

Friday, February 12, 2021 8:00am – 2:30pm Virtual Forest Pest Seminar - The annual Forest Pest Seminar will be held virtually this year. 5 Texas Department of Agricultural Pesticide (CEUs) will be offered (1 Laws & Regulation, 1 IPM, and 3 General). 5 CEUs will also be offered for Society of American Foresters, Texas Accredited Forester, and Pro Logger Program. Contact Cary Sims (cw-sims@tamu.edu; 936-634-6414 x2) for more information.

Friday, February 19, 2021 8:00am-2:00pm Wildlife Tax Valuation Webinar- Biologists will provide an overview of the wildlife tax valuation, developing a wildlife management plan, and management practices. This webinar will also go over how to fill out the wildlife management plan and provide examples. For more information, visit https://tpwd.texas.gov/calendar/wildlife/WTV_Feb2021_Webinar

Monday, March 15, 2021 9:30am-11:30am Angler Education Instructor Training Online Workshop- This free Online 3-day (2 hours each day) workshop is open to anyone 18 or older interested in teaching fishing skills in their communities. Participants must attend all 3 sessions for certification: March 15th, 16th and 17th, 9:30 am to 11:30 am each day and REQUIRED to have a working video camera on a computer or mobile device to participate in all online workshop activities. Pre-Registration is required and class size is limited. For more information or to register visit <https://tpwd.texas.gov/calendar/education/angler-education-instructor-training-online-workshop-1>

Ongoing- If you have had a recent timber harvest and would be interested in getting feedback on how well your newly harvested site reflects Best Management Practices please call the Best Management Practices Forester, Sarah Bailey, at 936-208-6219. Best Management Practices are guidelines put in place to prevent erosion and decreased water quality during and post timber harvest.

President:

Glenn Weiss

(903) 645-3782

gjweiss@windstream.net**Vice President:**

Wayne Arnold

(903) 797-2345

Secretary-Treasurer:

Judy Weiss

(903) 645-3782

gjweiss@windstream.net**Director of Camp County:**

Larry Shelton

(903) 767-3470

Director of Franklin County:

Harry Earl

(903) 860-3306

hsearl@suddenlink.net**Director of Morris County:**

Open

Director of Titus County:

Open

Director of Upshur County:

Kenneth Stewart

(903) 843-2174

Director of Wood County:

Larry Hoffman

(903) 569-2237

TFS Foresters for our area:

Kelby Wolf, Pittsburg Office

(903) 856-7181

Tandy Wheeler, Gilmer

(903) 734-7007

NETFLA WEB SITEwww.netxforest.org**Membership Meetings Are Being Postponed Due to the COVID-19 Virus**

The health and well-being of every member is our first priority. Meetings will be rescheduled when conditions permit. We are still planning to have Texas A&M Forest Service Law Enforcement present the next Program. The primary topic addressed will be "Timber Theft". The goal of the program will be to inform landowners of new regulations for selling timber in Texas, examples of how timber is being harvested without the landowner receiving full compensation, and best practices for minimizing the risk of theft.

The date and location for the next meeting will be communicated in future Newsletters. Please do what you can to protect your health.

TFA Regional Meeting:

Texas Forestry Association (TFA) has scheduled their March 5, 2021 Board of Directors meeting at the Texarkana Convention Center/Garden Inn. Following the Directors meeting, TFA will host a Regional Membership Meeting. Current plans are to have a Membership Reception from 5-6 pm followed by Dinner from 6-8 pm. The goal is to have a series of meetings closer to the Landowners, Loggers, Manufactures, Foresters and Forestry Organizations they serve.

Health and well-being of members is the first concern, and the event will be rescheduled if COVID-19 restrictions remain in place. Planning must go on however. NETFLA and ETOA **could** schedule a joint or separate membership meetings from 3-5 pm before the Regional Meeting if there is sufficient interest.

Would you attend a TFA Reception and Dinner in Texarkana?

Would you attend a NETFLA membership meeting prior to the TFA event?

Please reply to Judy Weiss by phone, e-mail or to P.O. Box 343 as shown below.

2021 Programs: (After Virus Restrictions)

The Board is considering several topics including Pine seedling genetics, a tour of the Hixon lumber mill in Gilmer, feral hogs, and an update of the proposed Marvin Nichols Reservoir for future meetings. Please contact an Officer or your County Director if you have an issue that you would like addressed at a future meeting.

NETFLA Contact and Membership Dues Information

Thank you for your NETFLA membership in past years. We hope that Newsletters, Programs and Quarterly Meetings have provided you with useful information that has helped you manage your timber property. We encourage you to continue your membership. Membership dues are \$15.00 per calendar year. If you have not yet renewed your membership for 2021, you can renew at a meeting or mail your check to: **NETFLA, P.O. Box 343, Daingerfield, TX 75638-0343.** Thank you.

Contact: Judy Weiss (903) 645-3782, or e-mail gjweiss@windstream.net

Northeast Texas Forest Landowners Association
PO Box 343
Daingerfield, TX 75638

