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# microBYTES™

A Hardy Diagnostics eNewsletter



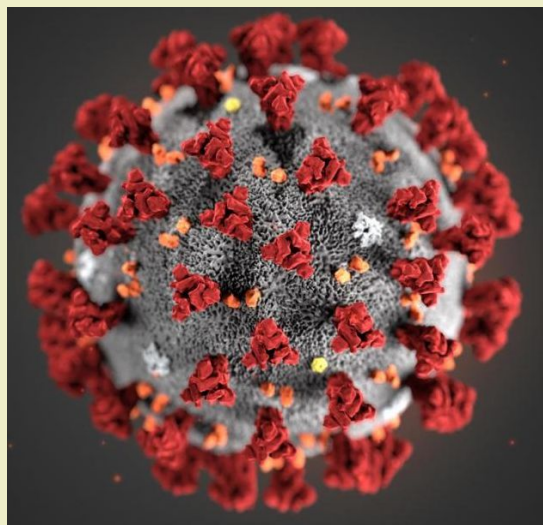
February, 2020

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## Micro Musings...

## Coronavirus Update

As of March 2, 2020, there have been 76 confirmed cases of the novel coronavirus (COVID-19) in the US. Two deaths due to the virus has occurred in Washington state. Both had underlying health issues.



China, where the coronavirus started, has had nearly 80,000 confirmed cases and 2,835 deaths. It has spread to another 44 countries with 3,246 cases and 112 deaths reported. Besides China; Italy, South Korea, Japan, and Iran have suffered the most cases.

[Test kits](#) to identify COVID-19 using PCR methods have been sent from the CDC and commercial manufacturers to 93 public health labs in an effort to make diagnosis methods more accessible.

*Now there's an easy way to detect carbapenem resistance...*

## CARBA 5



Hardy's new Carba 5 detects the five major bacterial enzymes of carbapenem resistance. This new lateral flow device gives you results in only 15 minutes at a price much much lower than PCR! This simple kit tests for the presence of the active enzymes, not just the presence of the gene.

[Watch a short video...](#)

[Learn more...](#)

[Press release...](#)

[Order here...](#)

*Perfect for coronavirus and flu testing...*

Flocked swab for better absorption and release.

Room temperature storage

[Click here to learn more](#) about UTM

[Click here](#) to see our complete Influenza Catalog.

*Now with improved secure cap!*

**CryoSavers**  
for long term freezer storage

[The FDA is allowing](#) certain labs to perform diagnostic testing for the virus. The FDA estimated that between 300 and 400 academic medical centers and a few large community hospitals can immediately begin testing.

The CDC has recently published [guidelines](#) for specimen collection and testing for coronavirus. For culture and PCR testing a [viral transport media](#) is recommended.



### Helpful Links

- [Up to the minute data on worldwide cases of COVID-19](#)
- [New cases, recovered cases, and deaths by country](#)
- [Updates from the CDC](#)
- [CDC advice for patients](#)

\* \* \* \* \*

*Screen for Carbapenem Resistance*

## HardyCHROM CRE



Our new, FDA-cleared, chromogenic media for



*Learn about our complete selection of freezer vials.*

*View the CryoSaver catalog.*

## Control Organisms



Hardy offers a complete selection of over 900 ATCC derived microorganisms for use in Quality Control procedures.

[Learn more...](#)

*Zerbaxa and Avycaz now available!*

## New Antibiotics

KB Disks Now Available from Hardy

### Carbapenem-Resistant Enterobacteriaceae



[See all](#) our products for detecting resistance.

[See](#) our complete Chromogenic product offering.

[View](#) the online catalog.

[Request](#) a paper catalog.

[Request](#) free samples.

[Order](#) HardyCHROM CRE.



\* \* \* \* \*

## PathFinder Listeria



*"The green glow will let you know..."*

Hardy's new test for environmental Listeria will eliminate most false positives and quickly give you results, as seen by a green glow!

[Learn more...](#)  
[Request samples...](#)



[Order now...](#)

*Choose what you chew*

## Antibiotic Resistance in Food Items

In the United States, approximately 2.8 million people are infected with antibiotic resistant bacteria (ARB) every year resulting in billions of dollars in healthcare costs and approximately 35,000 deaths (1,2).

About 80% of antibiotic use in the United States comes from the agriculture industry, particularly in the husbandry of cattle and poultry. While antibiotics are not widely used by the produce industry, produce is often contaminated with soil which contains naturally resistant bacteria and organisms from animal waste. (3) Birds flying over crops also contribute to the spread of resistant bacteria.

Ready to eat foods (RTEs) do not always require additional heating or cooking before serving and therefore could have much higher levels of contamination than foods that require additional heat. In a study conducted at California State University Northridge, the amounts of total bacteria and of bacteria resistant to eight different antibiotics (ciprofloxacin, tetracycline, erythromycin, chloramphenicol, gentamicin, ampicillin, cefotaxime, and colistin) were quantified from organic or conventional fresh produce and dairy products. Although dairy products had very low levels of ARB, the highest level of resistant strains was found in the ARB group resistant to cefotaxime, a broad-spectrum antibiotic. (4)

On average, both organic and conventional produce, had 10,000 times more ARB than dairy products. In produce, the highest levels of resistance were against cefotaxime, as well as a last-resort antibiotic, colistin. (4) In another study, researchers found consumers had a 1.5% chance of exposure to a potentially infectious dose of cephalosporin-resistant *Escherichia coli* (CREC) in a meal containing chicken due to existing bacteria and cross contamination during food preparation. (5)

Bacteria naturally present in food products increase the number of potential sources of human exposure to ARBs. Does this mean we should avoid fresh uncooked produce? Of course not. While these foods increase our ARB exposure, they do not necessarily cause infection and often provide beneficial native residents in plant microbiomes that offer nutritional value.

However, once ingested and or disseminated to other surfaces, these bacteria may be able to spread resistance genes through bacterial gene transfer. These genes increase the gene pool from which pathogenic bacteria can acquire and disseminate resistance traits and pose an indirect risk to public health.

Ref: [1](#), [2](#), [3](#), [4](#), [5](#)

- [Imipenem/Relebactam](#), "Recarbion" (Z9441, Z9445)
- [Eravacycline](#), "Xerava" (Z9401, Z9405)
- [Plazomicin](#), "Zemdri" (Z9331)
- [Ceftazidime/Avibactam](#), "Avycaz" (Z9351, Z9355)
- [Ceftolozane/Tazobactam](#), "Zerbaxa" (Z9341, Z9345)
- [Delafloxacin](#), "Baxdela" (Z9301, Z9305)
- [Meropenem/Vaborbactam](#), "Vabomere" (Z9321, Z9325)
- [Omadacycline](#), "Nuzyra" (Z9411)
- [Lefamulin](#), "Xenleta" (Z9451, Z9455)

### HardyDisks:

- Are compatible with all BD Disk dispensers.
- Feature "last disk recognition" so you know when a refill is needed.
- Include all traditional and newer antibiotics.

[Learn more](#) about HardyDisks.

[View our AST mini-catalog.](#)

*For the detection  
of Group B Strep...*

## Carrot Broth One-Step

*Every test is an opportunity for*

*a new life to thrive and grow...*

- Improved...No tile addition needed!
- Detects hemolytic Group B Strep from the initial broth culture
- Provides results in as little as sixteen hours
- Found to be 100% sensitive and up to 100% specific in a [recent study](#).

[Watch a short video to learn more...](#)

[Request samples.](#)

[Place your order.](#)

[How](#) is Carrot Broth making a difference?

\* \* \*

By Lauren Hamilton  
Technical Support Microbiologist I  
HARDY DIAGNOSTICS

## Optical Oddities

Squares A and B are exactly the same.  
Don't believe it? Scroll to the bottom.

*"Believe half of what you see and none of what you hear"*  
Benjamin Franklin

*Strange ads from the past...*

*For the detection of Gardnerella vaginalis*

## Gardnerella Selective Agar

*Our new G. vag plate contains no human blood!*

No need for blood-borne pathogen precaution  
when detecting Bacterial Vaginosis.

[Learn why](#) this is the best way to culture for  
*G. vaginalis*.

[Request samples](#) for your laboratory.



\* \* \* \* \*

*Did You Hear the Buzz?*

## Mites and Viruses Take a Toll on Bee Populations

It's no secret that the honey bee population has seen a steady decline throughout the last decade. In the winter of 2018 alone, the population experienced a worrisome decrease of nearly 40%.

According to the American Beekeeping Federation, honey bees contribute nearly \$20 billion each year to the value of U.S. crop production, and they play an enormous role in global food production. Without honey bees, dozens of crops, from almonds to berries to broccoli, would either vanish or produce significantly less food.

Two key players in this devastating loss, known as colony collapse, have been identified as parasitic Varroa mites (*Varroa destructor*) and an RNA virus known as deformed wing virus (DWV). DWV is a crippling disease that causes wing deformation, abdominal deformities, discoloration, and wing and appendage paralysis.

A varroa mite on a honey bee

While Varroa mites alone can be deadly due to their preferred diet of honey bee fat bodies (vital organs that store fat cells, proteins, and other crucial components for bee survival), they are also carriers of DWV. The depletion of these fat bodies leads to a weakened immune system and increased vulnerability to other pathogens, thereby also increasing susceptibility to DWV.

Luckily, scientists at The University of Texas at Austin have discovered a method for protecting our honey bee allies from these debilitating threats in the form of genetically engineered strains of bacteria. These bacteria are already a part of a honey bee's natural gut biome and have been engineered by researchers to elicit an RNA interference (RNAi) response against the RNA deformed wing virus.

Close-up photo of the varroa mite

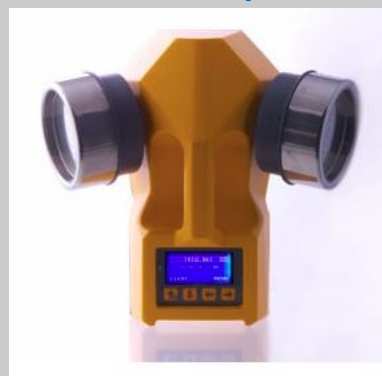
This vaccination, so-to-speak, causes an immune response in worker bees and essentially prepares their tiny immune systems to fight

Elmer Koneman, MD  
1932 ~ 2020

Dr. Koneman was a board certified pathologist, who received his education from the University of Colorado, Denver School of Medicine. His admired text, "[\*Koneman's Color Atlas and Textbook of Diagnostic Microbiology\*](#)," is a revered classic. His contribution to clinical microbiology is enormous and will be missed by all.

\* \* \*

## Trio Bas Air Samplers



*Two heads are better than one!*

*Now with Bluetooth capability!*

Trio Bas from Orum International has a robust impact air sampler for every type of use. Single, double, or triple heads are available from Hardy Diagnostics.

- [Watch a short video](#) that will explain why the Trio Bas is the best choice for your clean room.
- [See the complete Trio Bas catalog.](#)
- [Please have a sales rep contact me](#) about air samplers.

### Testimonial from a Pharmaceutical Lab worker...

*"The two heads of TRIO BAS DUO air sampler was one of the best investments we made during the last two years. The laboratory staff, which is responsible for the bacteriological sampling, is able to double the number of environmental microbial cycles per day. This means more efficiency and lower cost, together with the possibility to increase the number of sampling in other areas of the premises in the future."*

\* \* \*

against DWV. Not only did scientists engineer a bacterial strain to target DWV, but also a strain against the Varroa mites themselves. This strain inevitably evokes an immune response within the mites, which eventually leads to mite die-off.

To support their research, scientists monitored bees inoculated with the DWV-fighting engineered bacteria as well as uninoculated control bees over a 10-day period. Those bees inoculated with the genetically engineered bacteria were 36.5% more likely to survive through the test period than the uninoculated bees. Alternatively, mites feasting on fat bodies of bees inoculated with the mite-fighting bacteria were 70% more likely to perish by the end of the 10-day test period.

So what does this mean for the honey industry? Fortunately, because the engineered bacteria are particularly safe and unlikely to spread to other insects or organisms due to their intrinsic isolation to the bee gut, researchers are hopeful that this project can be safely scaled-up to be used within the agricultural industry setting with very low risk.

Ref: [1](#), [2](#), [3](#), [4](#), [5](#), [6](#), [7](#), [8](#)

Sara Hylton  
Technical Services Microbiologist II  
HARDY DIAGNOSTICS

\* \* \* \* \*

## Phraseology...

### "Eat Crow"

The phrase to "eat crow" means humiliation by admitting having been wrong after taking a strong position on a subject. The crow is a scavenger bird known to eat carrion and thus would be repulsive for someone to dine on. The origin of this phrase is not known for sure, but probably dates back to the 1850s.

Eating crow belongs to a family of idioms having to do with eating and being proven incorrect, such as to "eat dirt" and to "eat your hat" (or shoe), all probably originating from "to eat one's words," which first appears in print in 1571 in one of John Calvin's tracts, on Psalm 62: "God eateth not his words when he hath once spoken."

## Do you perform colony counts?



## Compact Dry

- o Self-diffusing of sample - No spreader needed
- o Room temperature storage
- o Rigid plate with removable lid
- o Stackable plates to conserve space
- o Many media formulas available

[Learn more...](#)

[Request Samples](#) of Compact Dry



## Now Available!

The Wizard is an automated Compact Dry plate reader that will perform colony counts within seconds!

[Find out more...](#)

[Watch a short video...](#)

\* \* \* \* \*

*Stool cultures with no  
interference from Proteus!*

\*\*\*\*\*

*Wisdom to Ponder...*

## Marcus Aurelius

121 ~ 180 AD

*Roman emperor from AD 161 to 180 and a Stoic philosopher. He was the last of the rulers known as the Five Good Emperors, and the last emperor of the Pax Romana, an age of relative peace and stability for the Roman Empire.*

"When you arise in the morning, think of what a precious privilege it is to be alive - to breathe, to think, to enjoy, to love."

"The only wealth which you will keep forever is the wealth you have given away."

"It is not death that a man should fear, but he should fear never beginning to live."

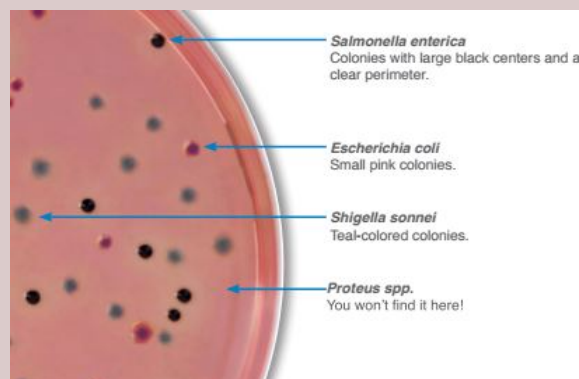
"You have power over your mind - not outside events. Realize this, and you will find strength."

"Very little is needed to make a happy life; it is all within yourself, in your way of thinking."

"The happiness of your life depends upon the quality of your thoughts: therefore, guard accordingly, and take care that you entertain no notions unsuitable to virtue and reasonable nature."

"How much more grievous are the consequences of anger than the causes of it."

## HardyCHROM SS NoPRO



NOTE: New study shows **50% less colony work-ups**, for an overall **cost savings of 80%!**  
[Find out how you can save also...](#)

- Reduces costly false-positive work-ups due to *Proteus* spp.!
- Less colony picking, subculturing, and identifications
- No need for TSI, LIA, or KIA tubes
- Reduces use of expensive ID cards
- Reduces the number of plates for primary stool setup
- Increased specificity
- Easy identification by patented chromogenic reaction
- The only chromogenic media that will detect both *Salmonella* and *Shigella*

**Learn more about HardyCHROM SS NoPRO.**

**Place your order now.**

**Try out some free samples.**

\*\*\*\*\*

## RUBES



\* \* \*

## *Rapid PYR*

For the identification of Group A Strep in seconds.  
[Learn more...](#)

## *HUrBi*



Quick and easy detection of urinary pathogens.  
 This bi-plate will separate Gram positive and yeast on one  
 side and Gram negatives on the other.

[Find out more...](#)

[Request samples.](#)

*Warning:*

## PUN ZONE AHEAD

~ My new theory on inertia doesn't seem to be gaining momentum.

~ I was going to tell you a joke about infinity, but it didn't have an ending!

~ England doesn't have a kidney bank, but it does have a Liverpool.

~ People are choosing cremation over traditional burial. It shows that they are thinking out of the box.

~ Jill broke her finger today, but on the other hand she was completely fine.

*What is Hardy all about?*

[View a short video to find out...](#)



*Did you know Hardy Diagnostics  
is 100% owned by its employees?*

\* \* \*

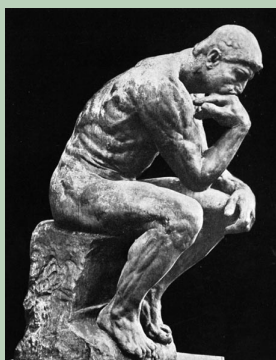
## Brainteasers



Feeling sluggish?

[Here's a brain stimulant...](#)

*Think about it...*



- \* Why do you park in a driveway and drive in a parkway?
- \* Why do you have a hot-water heater when you don't need to heat hot water?
- \* Why is an orange an orange and an apple not a red?
- \* Why is a pear called a pear when there is only one?
- \* What do they pack styrofoam in?
- \* Why did God give men nipples?
- \* If buttered toast always lands butter-side down, and a cat always lands on its feet, what would happen if you tied a piece of buttered

~ A girl said she recognized me from the Vegetarian Club, but I had never met herbivore.

# # #



Over 250 formulas that are used  
by thousands of labs daily.

[Watch a short video](#) about CRITERION's features.

[Learn more about CRITERION](#) powdered culture media.

[Request for a free two liter sample for your lab.](#)

## StrepPRO Rapid latex agglutination



Type your Streps within minutes!

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[See all](#) our Rapid Tests

*"An archaeologist is the best husband a woman can have.  
The older she gets, the more interested he is in her"*

toast on the back of a cat?

\* \* \*

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YouTube Channel!***

Learn about all the innovative Hardy\_products

to help you save time and money!



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Watch a short video  
to learn how easy it is  
to order from Hardy on-line!

***Pick... Click...  
And your order is on its way!***

\* \* \*

***Did you know?***

Agatha Christie

"How can a nation be called great if its bread tastes like kleenex?"

*Julia Child*

***"There is in youth an unforgettable day that lights up  
all the rest of our lives.***

***That is the day when we meet those teachers to whom  
we owe our first enthusiasm.***

***Ah, what other moment, what fortune of our careers  
can ever be worth as much as that moment"***

Luis Pasteur

*For your ordering convenience!*

Available at  
**amazon**

Did you know that of the 2,700 products that Hardy makes, 700 of them are now available on Amazon?



## Hardy Diagnostics...

- Manufactures over 2,700 microbiology products for you to choose from.
- Stocks a total of 13,000 laboratory products for your "one-stop shop" experience.
- Is celebrating its 40th year of serving microbiologists.
- Manufactures from two ISO certified factories; one in California and one in Ohio.
- Maintains nine distribution centers in the U.S. for faster turn-around-time to your lab.
- Is ISO 13485 certified for the manufacture of medical devices to give you confidence in our products.
- Services over 10,000 labs and maintains a worldwide network of over 80 distributors.
- Is a 100% Employee Owned company. *"If we act like we own the place...it's because we do!"*



View our [Corporate Profile](#).

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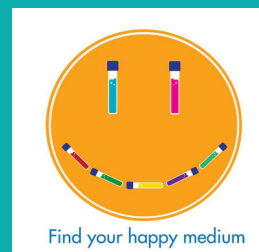


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**HARDY**  
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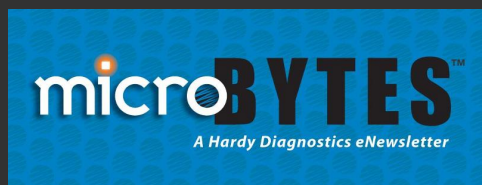
"As Hardy Diagnostics approaches its 40th year of serving microbiologists in the laboratory, I would like to thank each of our customers for their support and loyalty. It truly has been a pleasure to serve you!"

If there is any way we can improve or expand upon our service, would you please let me know?"

Jay Hardy, CLS, SM(NRCM)  
President  
HARDY DIAGNOSTICS

[Send Jay a message...](#)





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*Sometimes we act like we own the place...  
Because we do!*



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