

THE SUNRISE & SUNSET OF SUNSCREENS

WE'RE WELL into the dog days of summer in the Northern Hemisphere and there are lots of activities involving the use of sunscreens for protection from the scathing sun. Consumer Reports revealed its top-rated sunscreens for 2018. The Environmental Working Group published its 2018 Sunscreen Guide. Congress is busy finalizing its OTC Monograph Reform Legislation. FDA commissioner Scott Gottlieb addressed the new FDA actions to keep consumers safe from the harmful effects of sun exposure. Hawaii's governor signed into law the banning of oxybenzone and octinoxate, which will ignite a revolution in the sunscreen industry. The FDA has issued warnings to the public about the use of edible sunscreens. Hundreds of articles have been written espousing the best and the worst sunscreens to use for protection. These articles have also made recommendations concerning UV-proof clothing to protect from sunburn, addressed the effectiveness of spray sunscreens, explored water resistance issues, identified the US states where skin cancers

are most common, and even promoted sunscreens that are safe for your pets.

But, wait! I did find one lonely article on a potential new sunscreen that purportedly prevents sun induced damage. Just one article. But it does refute my earlier expressed views that novel research on sunscreen ingredients is dead or non-existent!

The Reports Are In...

Consumer Reports (CR) studied 73 sunscreens on the market and evaluated their UVA protection, UVB (SPF) protection, variability in testing of their reported SPF values, their cost per ounce and the active ingredients present in each product.¹ The Environmental Working Group (EWG) Guide is more ambitious; it evaluated 650 beach and sport sunscreens in its 12th annual guide.² EWG claims that two-thirds of the products examined contain worrisome ingredients (oxybenzone and vitamin A- retinyl palmitate) offering inferior sun protection. EWG accurately reports that mineral-only sunscreens have more than doubled in the last decade from 17% in 2007 to 41% in 2018.

Congress has been busy on Capitol Hill finalizing its OTC (over-the-counter) Monograph Reform legislation which includes reforms that are specific to sunscreens with language that would address the Sunscreen Innovation Act (SIA) for the pending sunscreen ingredients submitted under the TEA (Time and Extent Application) process. The House Committee on Energy and Commerce and the Senate HELP (Health, Education, Labor and Pensions) committee have marked-up and passed OTC Reform legislation through their committees. Now both the House and the Senate enter into a process known as "pre-conferencing" before they bring the bill to the House and Senate floors for all the members to vote on. Pre-conferencing would include working out in advance some of the differences between

the two bills so that they can pass one version acceptable to both and, hopefully, the bill will be signed by the end of July. We will see if that holds true considering that the current Supreme Court nominee process, with its increased scrutiny, may undoubtedly delay this process.^{3,4}

FDA's (in)Action

Recently, FDA commissioner Gottlieb issued FDA actions to keep consumers safe from the harmful effects of sun exposure and ensure the long-term safety and benefits of sunscreens.⁵ Unfortunately, the Commissioner did not address the FDA's inaction in approving better UVA filters pending under the TEA process that would truly assist American consumers reduce the incidence of skin cancer. For those who did not read my June 2018 "Sunscreen Filter" column in *Happi*⁶, I would urge them to do so to realize the calamity that the sunscreen industry is currently in—and will remain in—unless we react promptly and decisively.

So, Hawaii Governor David Ige (D) signed the sunscreen bill on July 3, making Hawaii the first state in the nation to enact legislation to protect its marine ecosystem by banning both Oxybenzone and Octinoxate⁷. The bill (SB 2571- M.Gabbard (D)), is billed as "the-first-in-the-world law" and goes into effect in January 2021. Other countries including Mexico, the Philippines, the Caribbean, and French Polynesia had previously expressed concern about sunscreens destroying coral reefs. Imagine the consequences to the sunscreen industry when California and Florida and other states and countries jump on the band wagon and ban those ingredients. Are we prepared?

I am reminded by my editor to limit my August column to 1000 words, so I will leave you with references to read on the other topics that have been reported on in the last few months. Perhaps I will



Nadim Shaath
Alpha Research
& Development Ltd
Email: alphamd@aol.com

Dr. Nadim Shaath is the president of Alpha Research & Development, Ltd. in White Plains, NY. He has over 30 years of experience as chairman of the chemistry department at SUNY-Purchase and the CEO of Kato Worldwide. Recently he published his new book entitled "Healing Civilizations: The Search for Therapeutic Essential Oils and Nutrients" Cameron Books, Petaluma, CA.

address them in future columns. These topics include FDA warnings to the public about the use of edible sunscreens, which prompted Senator Schumer (D-NY) to demand that the FDA request that the products be pulled off shelves and no longer be sold by on-line retailers⁸; the effectiveness of UV-proof clothing protect you from the sun⁹⁻¹²; the states in the US where skin cancer rates are most common¹³; the effectiveness of spray sunscreens¹⁴; water-resistance issues of sunscreens¹⁵; the best sunscreens for dark skin¹⁶; the legitimacy of DNA-repair sunscreens¹⁷; and which sunscreens are safe for your dogs¹⁸.

A New Sunscreen?

Finally, I must detail that in the past few months I have only found one article, from Oregon State University, that describes a new sunscreen ingredient to prevent sun-induced aging.¹⁹ OSU researchers say that they discovered the first natural compound isolated from meadowfoam that acts as

a sunscreen. The researchers (Arup and Indra) are investigating the effect of seed meal of meadowfoam on skin cells exposed to UVB rays. They discovered that the skin shows fewer sun-damaged cells in slides that include the meadowfoam seed meal. Unfortunately for the researchers, approving a new sunscreen agent in the US requires FDA approval. Good luck! ●

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