

Preface

For over 50 years US news about chemical warfare during the American-Vietnam War has been dominated by the story of Agent Orange and its devastating impacts. During this same period, however, Agent Blue was also used extensively in South Vietnam. This arsenic-based herbicide was used to kill the rice crop and the public knew little about its use. In fact, the first news reference to this chemical weapon was a Letter to the Editor published by the New York Times titled “Agent Blue” in Vietnam by Arthur H. Westing in (1971). This blip of attention to Agent Blue then disappeared. Then, 44 years later, Loana Hoylman published an article on “Today’s Blue Arsenic in the Environment” in a 2014 issue of the VVA Veteran magazine. Finally, in 2020 Kenneth R. Olson and Larry Cihacek published the first refereed journal article on this topic, “The Fate of Agent Blue, the Arsenic Based Herbicide, Used in South Vietnam during the Vietnam War” in the Open Journal of Soil Science. Using new primary source data, they reconstructed the paper trail of these “Made in America” chemical weapons, and developed an updated chemical research framework, whereupon the Agent Blue story was finally picked up in the international print media. How could this secret use of Agent Blue, to destroy civilian food (rice) sources and agricultural production sites in South Vietnam, never have been covered by US news organizations during the last 60 years? Good question.

Let’s sketch this hidden chemical warfare and its current impact. In the beginning, Agent Blue was sprayed by the Republic of Vietnam (RV) military for three years before the official start of the American-Vietnam War in 1965. Few, if any, RV military, US Army, US Navy, and CIA spray records exist for this period. Vietnam War veterans, historians and scholars have reported the spraying of 3.2 million liters (468,008 kg arsenic) of Agent Blue on rice pad-

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dies and mangrove forests in the Mekong Delta and Central Highlands by the RV military with the support of the US Army, US Navy, and CIA. The Institute of Medicine estimated that 3.2 million liters (468,000 kg arsenic) were sprayed during the RV Khai Quang (food denial) program. This was in addition to the US Air Force's Operation Ranch Hand spraying of the tactical herbicide Agent Blue primarily by C-123 aircraft. The Operation Ranch Hand missions-maintained location and quantities of herbicides sprayed over 4,712,000 liters (664,392 kg arsenic) from 1961-1971. The Institute of Medicine estimated a total of 7.8 million liters (1,132,400 kg arsenic) of Agent Blue was applied to southern Vietnam landscape from 1962 to 1971. This total includes both the 1962 to 1965 RV Khai Quang program with the assistance of the CIA, US Army, and US Navy, and the part of the total Agent Blue applied by US Air Force Operation Ranch Hand from 1962 to 1971. This is a mind-boggling amount of highly toxic chemicals to be sprayed over the Mekong Delta's rice fields, which were a prime rice growing region in Vietnam, for a decade.

So, what has happened to all this chemical warfare agent during the last 60 years? Since this chemical warfare began, the southern Vietnam environment and Vietnamese living in the Mekong Delta have bio-accumulated arsenic, from both natural and anthropic sources, via their drinking water (groundwater from tube wells) and food supply which has increased their risk of chronic poisoning over time. Arsenic is water soluble, has no half-life, and is toxic. A synthesis and analysis of publications and records documents the RV Government and US militaries contribution to arsenic levels and as well as its present-day persistence in the Vietnam Mekong Delta groundwater. Both the Vietnamese rice farmers and US military personnel who were exposed to Agent Blue can attest, poisoning the water you drink or the local food you eat is not a good idea. Kenneth R. Olson, *Ph.D., Emeritus Professor of Soil Science, NRES, ACES, University of Illinois, Champaign-Urbana, Illinois, USA.*