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Agent Orange on Okinawa - New Evidence　オキナワにおけるオレンジ剤散布––新たなる証拠 •Japanese translation available

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Introduction

In September 2011, *The Asia-Pacific Journal* published my research into the presence of US military defoliants, including Agent Orange, on Okinawa during the 1960s and early '70s.[1] Drawing on the testimonies of over 20 US veterans who had served on the island at a time when it was a forward staging post for the war in Vietnam, the article catalogued the storage, spraying and burial of these dioxin-tainted chemicals on 14 American installations from the Yambaru jungles in northern Okinawa to Naha Port in the south. Despite this large number of firsthand accounts, however, the Pentagon continues to deny that military defoliants were ever on the island.

Fuelled by the September article - as well as others I have written for *The Japan Times* and investigations conducted by journalists from the *Okinawa Times* - Okinawa's politicians and activists have now demanded that both the Japanese and US governments allay residents' concerns by coming clean on the usage of Agent Orange on the island.[2] This tide of anger culminated on October 28th when Okinawa's governor, Nakaima Hirokazu, met with John V. Roos, the US Ambassador to Tokyo, and requested that he launch an investigation into the issue. Roos reportedly replied that he would do so assiduously.[3]

With new information regarding the presence of these defoliants on Okinawa emerging rapidly, this article aims to update readers on the most significant developments. First, it looks at the recent statement from a senior US official who claims defoliants were tested on the island between 1960 and 1962. Next, it examines a 1966 Air Force document which seems to debunk contemporary Department of Defense denials that herbicides were ever present on Okinawa. Following this, the article explores new evidence that these defoliants were used post-1972 - specifically on Iejima Island as well as at Camp Foster and MCAS Futenma. Finally, it outlines the press conference I held in Nago City on November 4th where, for the first time, Okinawan residents told the media about their experiences of US defoliant usage on their island.

November 4 press conference in Nago. Jon Mitchell is third from left
(Photo courtesy of Sunao)

Tests in the Yambaru jungles: 1960 - 1962

On September 6th, 2011, the *Okinawa Times* led with a front page story written by the paper's US correspondent, Heianna Sumiyo. Titled "Defoliants sprayed (on Okinawa), testifies former American high-ranking official", the article outlined defoliant tests that had been conducted between 1960 and 1962 in jungle near the northern villages of Kunigami-son and Higashi-son.[4]

According to the veteran, who spoke to Heianna on the condition of anonymity,

"Within 24 hours of the spraying, the leaves had turned brown. By week four, all of the leaves had fallen off. It was confirmed that weekly spraying stopped new buds from developing. I do not recall the specific size of the area sprayed."

The former service member claimed that the Department of Defense chose Okinawa for these tests primarily for two reasons. Firstly, the effects of the defoliants on the Yambaru jungles would elucidate how they would work in Vietnam since the two environments were very similar. Secondly, since the entire island of Okinawa was under US military control, the Pentagon could bypass the more stringent health & safety standards imposed by civilian authorities elsewhere.

The high-ranking official's account dovetails with publicly-available records regarding the Pentagon's defoliant tests at this time. During the early 1960s, the US military was still fine-tuning the technology with which it conducted aerial spray missions over south Vietnam as part of Operation Ranch Hand.[5]

Some Department of Defense officials were growing impatient with the slow pace of results so they expedited tests elsewhere under the cloak of the highly-secretive Project AGILE.[6] Although, some of the documents concerning AGILE show that defoliant experiments took place in Puerto Rico, Thailand and the mainland United States, the details of the other locations

In this May 1966 file photo, a U.S. Air Force C-123 flies low along a South Vietnamese highway spraying defoliants on dense jungle growth beside the road to eliminate ambush sites for the Viet Cong during the Vietnam War.

remain classified. Attempts to release the remaining files related to Project AGILE under the Freedom of Information Act have thus far been unsuccessful.

Service members stationed on the north of the island at the time in question substantiate the *Okinawa Times* story. One veteran who was on Okinawa between 1961 and 1962 claims that, during war games in the Yambaru, he witnessed defoliated sectors of jungle. Having bivouacked in these areas, he is now suffering from several diseases that the US government lists as dioxin-related - and he believes were caused by his experiences in the Yambaru. Adding weight to the high-ranking official's account is the fact that, to date, the only case in which the Department of Veterans Affairs (VA) has paid compensation for sicknesses contracted from defoliant exposure on Okinawa was to a former Marine Corps truck driver who came into contact with these chemicals between 1961 and 1962 when they were "used in Northern Okinawa for War Games training".[7]

Air Force Report on Okinawa and herbicides: 1966

In October 2011, I received a Department of Defense document[8] from Paul Sutton, the former Chairperson of the Vietnam Veterans of America Agent Orange/Dioxin Committee. Dated September 8th, 1966, the report detailed an 18-day trip made by civil engineering representatives to the Philippines, Taiwan and Okinawa. While on Okinawa, they visited Naha Air Base, Kadena Air Base, the Headquarters of the US Army and the US Army Medical Laboratory.

According to the report, one of the purposes of the trip was to "review base programs and assist individual bases with establishment of safer and more effective programs" related to "pest control" and "herbicides".

"Literature on various products was distributed at the conference and all bases visited. This action is designed to keep sections informed on some of the newer chemicals now available for pest and weed control."

The document also states that "Okinawa certifications are valid until October 1966. Due to language problems, translation will be necessary."

Before discussing this document, it is important to clarify the US military's usage of the terms "herbicide" and "defoliant". According to William Buckingham in his official Air Force history of Operation Ranch Hand, "'herbicide' and 'defoliant' are used practically interchangeably in discussions about the "Ranch Hand" program."[9] Even today, the Pentagon avoids references to "defoliants" - possibly due to the term's dioxin-laden connotations. For example, during recent email correspondences I have received from Major Neal Fisher - Deputy Director of Public Affairs for United States Forces Japan - he repeatedly refers to Agent Orange as "Herbicide Orange."

With this in mind, it seems that the 1966 report directly contradicts current Pentagon denials. In 2004, for example, General Myers stated, "records contain no information linking use or storage of Agent Orange or other herbicides in Okinawa."[10] This 7-year old denial has become the benchmark by which the VA continues to refuse aid to veterans claiming dioxin-exposure on Okinawa.[11]

The 1966 Air Force report, which specifically refers to herbicides, appears to offer sufficient grounds for former service members to appeal against their denials of recognition and support by the VA. Joe Sipala, the organizer of the Agent Orange Okinawa Facebook campaign to push the Pentagon for transparency on the issue, says

"It really helps veterans. Here is an official Air Force document that clearly mentions herbicides on Okinawa - contrary to what the Department of Defense states about having no records."

Numerous veterans with whom I am in contact have begun to incorporate the document into their appeals and, to encourage others to do so, I have made the complete 1966 Air Force report available here.

The Pentagon and the VA are likely to try to argue that the herbicides mentioned in the report were not the same as the dioxin-tainted ones employed in Operation Ranch Hand. However, the available evidence overwhelmingly suggests otherwise. The 1966 visit was organized by the Air Force, the branch in charge of Operation Ranch Hand, in a year that the US military undertook a massive escalation of its defoliant usage in Southeast Asia.[12] Furthermore, the report's reference to "newer chemicals now available for... weed control" suggests Agent Orange which had first been shipped to Vietnam in 1965. Veterans I have interviewed are adamant that these herbicides bound for the war zone were also sprayed on Okinawa. Among them is one former service member stationed on Naha Port in the late-1960s who said, "It wasn't a secret. Everybody knew that we were using the exact same defoliants they were using over there (in Vietnam)."

A final point worth noting is the reference in the document to the need for translation of "Okinawan certifications." This indicates that civilian base workers were involved in herbicide usage - a belief substantiated by veterans who report having seen teams of civilians involved in weed control on Camp Kue, Camp Foster and Machinato supply depot.[13]

The potential health impact on these workers is discussed in more detail below.

Use of defoliants: post-1972

Although evidence of the toxicity of the dioxin found in Agent Orange had been uncovered as early as 1965[14], the Pentagon and military contractors consistently sought to suppress this information. Throughout the 1960s, the international media reported unusually high incidences of birth defects in South Vietnam - but the White House dismissed these accounts as communist propaganda.[15] However, in 1969, the US

Food and Drug Administration issued a report that dioxin killed and caused stillbirths in laboratory mice and recommended that the usage of Agent Orange be curtailed.[16] The Department of Defense and manufacturers fought tooth and nail to keep employing defoliants which, the Pentagon still claimed were "relatively nontoxic to man or animals"[17] - but, in 1971, Operation Ranch Hand flew its final mission. By April 1972, the US had removed the remainder of its stockpiles of defoliants from South Vietnam.[18]

Among the US veterans I've interviewed, the consensus is that most of the military's supplies of defoliants were transported off Okinawa in a similar time frame. In 1972, the US army initiated Operation Red Hat to ship stocks of bio-chemical weapons from Okinawa to Johnston Island - and it is widely believed that barrels of defoliant were included, too.[19] The VA itself supports this suspicion when it stated in a 2009 ruling that "the records pertaining to Operation Red Hat show herbicide agents were stored and later disposed in Okinawa from August 1969 to March 1972."[20]

However over the past two months, details have surfaced that defoliants were present - and sprayed - on Okinawa until much later than had been previously feared. By the mid-1970s, the US military was irrefutably aware of the health risks posed by dioxins. The continued use of these chemicals at this time is clear evidence of criminal disregard from the base commanders who ordered or allowed their usage. Furthermore, it exposes the Pentagon to serious charges of liability for its failure to prevent such actions.

1. *Iejima Island: 1973*

Since 1955, when the US military seized over two-thirds of Iejima island at bayonet-point in order to construct an air-to-surface bombing range, the army had waged a battle of attrition against local farmers who still tried to work the fields now under military control.[21] In an attempt to deter local residents from entering the base, soldiers regularly used gasoline to raze their crops.

According to an *Okinawa Times* article dated October 31, 1973 - "American military in defoliant operation" - in that month, US forces employed a new technique to discourage the farmers.

"This time, the military did not use gasoline, they sprayed for the first time an unidentified defoliant. Villagers lost their pasture land and they worried about pollution of the nearby shore and the effect on their health. It seemed that the defoliants were used in a 2000 square meter area around the perimeter of the firing range, but the true extent of its use and whether other areas were affected is not clear." [22]

The *Okinawa Times* article explained that the villagers of Maja filed a complaint with the US military protesting the spraying of these defoliants and demanding that they never be used again.

The usage of the chemicals on Iejima - the birthplace of the Okinawa civil rights movement - reveals a new depth of brutality. Given that the US military was now aware of the health dangers of these defoliants, its actions border on biological warfare against the very Okinawan allies who it was supposed to be protecting. I am currently in talks with residents of Iejima in order to ascertain the location defoliated - and I am attempting to track down the US base commander's response to the villagers' 1973 complaint.

2. Camp Foster: 1975

Between 1975 and 1976, Caethe Goetz was stationed with the Marine Corps on Camp Foster. While there, she witnessed military personnel spraying herbicides along the base's perimeter.

"The fence line was devoid of vegetation. When I walked past it, there was a pungent smell and I would get a headache. I sometimes saw men using hand sprayers… One time there was a breeze and some of the mist blew onto me." [23]

Caethe Goetz

Today, Goetz is suffering from multiple myeloma - one of the fourteen diseases recognized by the VA as related to dioxin exposure. Despite being seriously ill, Goetz has been a vocal activist in the struggle to win recognition of the presence of defoliants on Okinawa. The banner of Sparrow Walk, the blog she started during her lengthy stays in hospital, reads "As a former Marine who served in Okinawa, she advocates for the VA to acknowledge the use of Agent Orange in Okinawa for the benefit of all who served in Okinawa." [24]

The accounts of three other veterans support Goetz's claim that Agent Orange was used on Camp Foster in the mid-1970s. One former truck driver alleges that he saw dozens of barrels on the base at the time, while another recalls he often witnessed spray teams clearing weeds near the perimeter fences. The third veteran also saw barrels of defoliants on Camp Foster - and he says that the "demand for AO was strong on the island" due to its potency in killing vegetation. He explained that other branches of the military had removed their supplies due to fears over its health effects, but the Marine Corps kept theirs longer since "disposing of it would have been wasteful."

3. MCAS Futenma: 1975

Carlos Garay, a former Marine Corps Lance Corporal, was stationed on MCAS Futenma between 1974 and 1975 at the base's supply section. According to Garay, there were stocks of defoliants present on the installation and he typed up a request to dispose of 12 barrels containing the chemicals.

"The disposal process was still being decided. Since it was toxic material, only the D.O.D. (Department of Defense) could designate its destination and disposal. I had sent messages to the D.O.D and informed H.Q.M.C. (Headquarters Marine Corps) on several occasions in accordance to follow up procedures, but they never replied."

"Some of the other squadrons also had a leftover barrel or so but were told to wait since the D.O.D's response time was extremely slow."

The Pentagon's failure to reply to Garay's requests reflects its confusion as to how best to dispose of the approximately 7.5 million liters of defoliants left over since the cessation of Operation Ranch Hand in 1971. Buckingham's official history catalogues the government's disorder as, for six years, it flailed from one increasingly desperate proposed solution to the next: "injection in deep wells, biodegradation in soil, disposal in underground nuclear test cavities, sludge burial, microbial reduction and high temperature incineration."[25] Eventually, after protests by local residents over the continued storage of Agent Orange in Gulfport, Mississippi, stocks were burned at sea aboard the Dutch-owned incinerator ship, Vulcanus, between July and September 1977.

In addition, Garay's account confirms fears that base commanders had failed to relay the health risks of these chemicals through the chain of command.

"We were instructed to gather some of the barrels together. I believed my senior's statement that, 'If you're not a damn plant it won't fucking kill you." So I didn't wait for the forklift with the special barrel lift attachment. As a result, during the move I got spillage from the barrel on me. The Agent Orange splashed my arms, legs and boots."

Today Garay, like Caethe Goetz, is suffering from illnesses related to this exposure – while his claims continue to be denied by the VA.

The experiences of Nago residents: November 4th, 2011

At the beginning of November, I held a press conference in Nago City to update the Japanese-language media on my current research and collect statements from residents with information regarding the use of US defoliants.[26] Thanks to a concerted publicity drive by Citizens' Network for Biodiversity in Okinawa[27] - combined with the *Okinawa Times'* publication of the 1966 Air Force document on the morning of the press conference - the meeting was well-attended. Over 50 local people came (including Akutagawa Prize winning author, Medoruma Shun[28]), representatives of the Okinawa Defense Bureau, Prefectural Assembly member Tokashiki Kiyoko, and members of the Nago City Council.

In September, Nago had become the first municipality on Okinawa to adopt a resolution demanding an official investigation into Agent Orange usage. Councilors' fears focused on Camp Schwab - a USMC installation located within the city - where former service member Scott Parton claimed that large volumes of Agent Orange had been stored and sprayed on the base between 1970 and '71.

According to Parton:

"Dozens of barrels of Agent Orange were stored in a big galvanized barn that was off-limits to most of us. Some of the barrels were marked with a single orange stripe. Others had a double orange stripe… Some of the barrels were leaking. So the military had dug a foot and a half (45cm) deep ditch around the palettes to catch the spills."

Parton's claims were supported by a second marine who had come forward with similar accounts of having witnessed defoliated areas within the base.[29]

After I had summarized the two veterans' testimonies at the press conference, local residents were invited to speak. Many of them were particularly troubled by Parton's claim of defoliant usage on the banks of a creek that fed into the nearby bay. City councilor, Oshiro Yoshitami, believed that he had identified the area - located close to a shore once popular for collecting shellfish.

Nago resident, S. Higa, explained that, prior to the 1970s, the rocks and shoreline of the nearby beaches had been covered in algae and seaweed but as time went on, all of the vegetation died and the rocks became bleached with no signs of sealife in the area.

Next to speak was F. Shimabukuro, who had worked as a maid on Camp Schwab's Kanno barracks between 1962 and 1972. She remembers talking to Okinawan base workers who had sprayed herbicides on the installation. Some members of these teams had died young. Another resident echoed her fears, stating that over the years there had been an unusually large number of leukemia cases in the area.[30]

F. Shimabukuro, Nago resident, speaks at the Nov. 4 press conference (Photo courtesy of Okinawa Outreach)

F. Shimabukuro also reiterated Higa's concerns about poisoned sealife. She recalled the deaths of several men who had died after eating shellfish consumed from the waters near the base. "The last words of one of the men was never to eat shellfish from the area [near Camp Schwab]." Another resident recalled a dark oily substance emerging from clams that had been gathered near the installation - a particularly worrying observation given that the US army describes Agent Orange "as a dark-brown oily liquid which is insoluble in water."[31]

Residents' fears extended to the jungles north of the city. Y. Iha, showed recent photographs that he had taken in Higashi-son, the village mentioned by the high-ranking US official as the site of the 1960-2 defoliant tests. The land in the photographs had belonged to the US military until the early 1990s but in the twenty years since its return to civilian use, the foliage still had not grown back.

Iha felt this was unusual given that Okinawa's vegetation usually reclaims any open spaces within four or five years. Further adding to fears that the area was contaminated by dioxins were media reports from 2007 cataloguing deformities among lizards, turtles and wild boars in the area.[32]

Y. Iha's photographs of the barren land

Y. Iha explains the photographs to the author (Photo courtesy of Sunao)

Toward the end of the press conference, I was approached by a middle-aged man who told me that his father had used defoliants donated by the American military in the years prior to the 1972 Reversion of Okinawa to Japan. According to the man, the defoliant was "oil-based, thin and, when mixed with gasoline, light brown. I saw it sprayed along the streets. The results were truly impressive."

The man recalled how, within a couple of days, "the weeds were killed. The parts of the leaves that had been splashed by the spray also became black. The chemical even stripped the leaves off large trees on the roadside."

While neither he nor his father suffered any ill-effects from the spraying, he was concerned that the chemical was Agent Orange since the only Japanese herbicides available on Okinawa at the time tended to be water-soluble and not powerful enough to defoliate large trees.

Conclusion - the urgent need for environmental testing

This recent surge of new information regarding military defoliants on Okinawa is clear cause for alarm. Evidence that these chemicals were used into the mid-1970s and the accounts from Okinawan civilians suggest that the human and environmental toll may be far graver than suggested by my September 2011 article.

In the absence of environmental tests on the sites believed to have stored Agent Orange, it will be impossible to allay the fears among both Okinawan residents and US military personnel currently stationed on the island's bases. The dioxin-poisoned veterans I have interviewed, well aware of the health risks of Agent Orange, have expressed their unconditional cooperation in pinpointing the precise location of these areas.

The chief scientist formerly in charge of identifying dioxin hotspots on past-US bases in South Vietnam, Wayne Dwernychuk, states that such tests would categorically confirm or disprove the presence of these defoliants on Okinawa.

"Results of the tests and the congener composition of the various dioxins would enable determining if the contamination was of Agent Orange origin. Agent Orange had one specific congener of dioxin: 2,3,7,8-TCDD. A very high concentration of this single congener would indicate the contamination came from Agent Orange, unquestionably."

At the moment, two obstacles impede this course of action. Firstly, there are no facilities on Okinawa equipped to test for dioxins and the $1000-per-sample price tag is too high to meet without financial support from the authorities.

The second difficulty lies in the reluctance of both the Pentagon and Okinawa Defense Bureau to cooperate with such tests. On November 11, for example, the Okinawa Defense Bureau refused to agree to the soil tests requested by Nago City on Camp Schwab despite a 1973 Japan-US Joint Committee agreement which allows local municipalities to order such investigations.

According to Wayne Dwernychuk, this recalcitrance backfires on the authorities.

"If the US wanted to put this to bed and stop the insinuations, they would approve a small sampling program. This, to me, is a red flag. What are they trying to hide?"

In the past, Tokyo and Washington might have tried to hold their ground and wait for this storm to blow by. But recent developments appear to have ruled out such an option. Okinawa's leaders have linked Japanese and American cover-ups of Agent Orange with comparable malfeasance over the relocation of MCAS Futenma to Henoko. As such, over the coming weeks, as Tokyo and Washington attempt to increase pressure on Okinawa to accept a new base at Henoko, it seems likely that they will come under heavy pressure to concede to tests for these defoliants which, many people are now convinced, have been poisoning the island's land for over half-a-century.

See the updated version of this article here.

Former service members and Okinawan citizens with information regarding the usage of Agent Orange on Okinawa are encouraged to contact Jon Mitchell at jon.w.mitchell@gmail.com

Regular updates on this rapidly-moving subject are posted here.

The leading online community - Agent Orange Okinawa - is hosted on Facebook by Joe Sipala (link).

Jon Mitchell is a Welsh-born writer based in Yokohama and represented by Curtis Brown Ltd., New York. He has written widely on Okinawan social issues for the Japanese and American press - a selection of which can be found here. Currently, he teaches at Tokyo Institute of Technology.

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• Ngoc Nguyen and Aaron Glantz, Vietnamese Agent Orange Victims Sue Dow and Monsanto in US Court

Notes

[1] Jon Mitchell, "Military defoliants on Okinawa: Agent Orange", *The Asia-Pacific Journal,* September 12, 2011.

[2] In October 2011, Prime Minister Noda sent Cabinet members to Okinawa to pave the way for the relocation of MCAS Futenma to an expanded base at Henoko. During these meetings, the Agent Orange issue was cited as one of the primary complaints that local leaders wanted Tokyo to address. On 18th October, the leaders of three municipalities - Chatan, Kadena and Okinawa City - met Japan's Minister of Foreign Affairs, Gemba Koichiro, and requested a wide-ranging investigation into the matter (details of which can be read in Japanese here). On 21st October, 2011, the Mayor of Chatan met the deputy Chief Cabinet Secretary, Saito Tsuyoshi, and asked him for reassurances on the burial of defoliants in his town (a Japanese-language link is here). The account of the alleged burial of dozens of barrels of Agent Orange in Chatan Town can be read in full here.

[3] See: 軍転協「辺野古は不可能」外相・米大使らに訴え, Okinawa Times October 29 2011. Available here.

[4] Japanese text is available here.

[5] William A. Buckingham, "Operation Ranch Hand - The air force and herbicides in Southeast Asia, 1961-1971", Office of Air Force History, Washington D.C., 1982, 16.

[6] Some declassified sections of Project AGILE are available here.

[7] The complete text of the 1998 VA ruling can be read here.

[8] A full pdf file of the document is available here.

[9] Buckingham, 196.

[10] Quoted in "Agent Orange was likely used in Okinawa: U.S. vet board", Kyodo News Service, July 8, 2007.

[11] The VA often relies upon a formulaic denial along the lines of this 2009 decision: "The Board is unaware of any official confirmation that veterans were exposed to herbicides anywhere in Okinawa... There appears to be no actual evidence of herbicides in Okinawa."(The full text of this denial can be found here.)

[12] In 1966, the Air Force began to spray defoliants over Laos and the border between North and South Vietnam. This expansion put such a strain on herbicides supplies that in 1966, there was almost a herbicide shortage in the United States. Buckingham, 133.

[13] See my September article for more information related to the exposure of Okinawan base workers.

[14] Philip Jones Griffiths, "Agent Orange - 'Collateral Damage in Viet Nam", Trolley Ltd., London, 2003, 165.

[15] Buckingham, 164.

[16] Griffiths, 169.

[17] "Employment of Riot Control Agents, Flame, Smoke, Antiplant Agents, and Personnel Detectors in Counterguerilla Operations," Department of the Army Training Circular, April 1969.

[18] Buckingham, 188.

[19] The alleged disposal of Agent Orange during Operation Red Hat is explained in detail in my September, 2011 article.

[20] Attempts to acquire the documents upon which the Montana VA made these comments are currently the focus of a protracted Freedom of Information request tussle with the National Archives and Records Administration.

[21] Jon Mitchell, "*Beggars' Belief*: The Farmers' Resistance Movement on Iejima Island, Okinawa", *The Asia-Pacific Journal,* June 7, 2010.

[22] 米軍が枯葉作戦, Okinawa Times, October 31, 1973.

[23] A fuller account of Goetz's struggle with the VA can be read here.

[24] Goetz's blog can be accessed here.

[25] Buckingham, 188.

[26] A Japanese-language TV report on the press conference can be viewed here.

[27] Originally formed in anticipation of COP-10, Citizens' Network for Biodiversity in Okinawa is a group focusing on the interrelationship of the environment, peace and human rights.

[28] Medoruma Shun has become increasingly involved in the recent struggle for truth over defoliant usage on Okinawa and his coverage of my press conference can be read here.

[29] A complete account of Parton's testimony can be read here.

[30] In an October 2011 meeting with Nakamura Goro, Vietnam War photographer and one of Japan's leading experts on Agent Orange, he explained to me the problems faced by researchers attempting to identify clusters of dioxin-related diseases in Japan. Unlike the US, whose Centers for Disease Control and Prevention record spikes in diseases, Japan has no such system. With no centralized source available for tracking down records related to public health, it is almost impossible for researchers to pinpoint higher incidences of dioxin warning signs such as birth deformities and specific cancers. The only way involves surveying clinics and hospitals near the areas of suspected defoliant usage.

[31] "Employment of Riot Control Agents, Flame, Smoke, Antiplant Agents, and Personnel Detectors in Counterguerilla Operations," Department of the Army Training Circular, April 1969.

[32] For example, see: 薬品影響？北部で奇形生物 Okinawa Times, July 12, 2007.

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