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| Location | Dates | Agents/Chemicals | Project Description | DoD |
|---|---|---|---|---|
| Apalachicola National Forest near Sophoppy, FL | 5/3/1967<br>5/3/1967 | basic desiccants and Agents Orange/Blue | During the period of 2/1966 - 10/1967, a comprehensive short term evaluation was conducted by personnel from Fort Detrick's Plant Science Lab in coordination with contact research on formulations by chemical industry and field tests by USDA and U of HI | Yes |
| Fort Gordon, GA | 7/15/1967<br>7/17/1967 | In-house desiccants mixtures and formulations Orange and Blue | During the period 12/1966 - 10/1967, a comprehensive short term evaluation was conducted by personnel from Fort Detrick's Plant Science Lab in coordination with contact research on formulations by chemical industry and field tests by USDA and U of HI | Yes |
| Fort Chaffee, AK | 5/16/1967<br>5/18/1967<br>7/22/1967-<br>7/23/1967<br>8/23/1967<br>8/24/1967 | basic, in-house, improved desiccants and Orange, Blue | During the period 12/1966 - 10/1967, a comprehensive short term evaluation was conducted by personnel from Fort Detrick's Plant Science Lab in coordination with contact research on formulations by chemical industry and field tests by USDA and U of HI | Yes |
| Base Gagetown near Fredericton, New Brunswick Canada | 6/20/1967<br>6/24/1967 | Basic desiccants and Orange, Blue, various | During the period 12/1966 - 10/1967, a comprehensive short term evaluation was conducted by personnel from Fort Detrick's Plant Science Lab in coordination with contacts research on formulations by chemical industry and field tests by USDA and U of HI | Yes |
| Las Marias, Puerto Rico | 2/1967<br>12/1967 | Various, including Orange | During the period 12/1966 - 10/1967, a comprehensive short term evaluation was conducted by personnel from Fort Detrick's Plant Science Lab in coordination with contacts research on formulations by chemical industry and field tests by USDA and U of HI | Yes |
| Kauai Branch Station near Kapaa, Kawai, HI | 6/1967<br>10/1967<br>12/1967<br>2/1968 | Blue, diquat, paraquat, Orange, PCP, Picloram. White, HCA, 2.4,5-T, endothall | During the period 12/1966 - 10/1967, a comprehensive short term evaluation was conducted by personnel from Fort Detrick's Plant Science Lab in coordination with contacts research on formulations by chemical industry and field tests by USDA and U of HI | Yes |
| Thailand | 1964 -1965 | Purple, Orange, Others | Sponsored by ARPA: ARPA Order 423. Between the mentioned dates, there was a large-scale test program to determine effectiveness of mentioned agents in defoliation of upland forest or jungle vegetation representative of SEA | Yes |
| Eglin AFB, FL | 11/1952-<br>12/1952 | 2,4-D; 2,4,5-T; 143 and 974, | Two trials: Chemical Corp concerned with basic fundamental work, using | Yes |

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| | | respectively | 2,4-D; Air Force concerned with evaluating prototype large capacity spray system for aircraft installation using 2,4,5-T primarily. Using three (3) atomizing nozzles: Beta Fog Nozzles, Whir | |
| Beaumont, TX | 6/1944 | LN *phenoxy | Small plot experiments were concerned to test the effectiveness of LN agents. Various trials were done under contract with the USDA, aided by personnel at Camp Detrick. Here they were testing on rice crops. | No |
| Bushnell Army Air Field, FL | 1945 | LN * phenoxy | Small plot experiments were commenced to test the effectiveness of LN agents. Various trials were done under contract with the USDA, aided by personnel at Camp Detrick. Here, it was aerial spray experiments on potted plants | Yes |
| Vigo Plant CWS, Terre Haute, IN | 5/1945 - 9/1945 | LN (see attached) *phenoxy | Small plot experiments were commenced to test the effectiveness of LN agents. Various trials were done under contract with the USDA, aided by personnel at Camp Detrick. Here, it was aerial trials spraying field grown plants. | Yes |
| Jefferson Proving Grounds, Madison, IN | Summer 1945 | LN * phenoxy | Small plot experiments were commenced to test the effectiveness of LN agents. Various trials were done under contract with the USDA, aided by personnel at Camp Detrick. Here it was dropping trials. | Yes |
| Granite Peak, UT | Summer 1945 | LN * phenoxy | Small plot experiments were commenced to test the effectiveness of LN agents. Various trials were done under contract with the USDA, aided by personnel at Camp Detrick. Here it was dropping trials. | Yes |
| Avon Air Force Base, FL | 2/1951 – 4/1951 | Butyl; 2,4-D | Trials were conducted at Avon Air Force Base, FL by Chemical Corps with personnel of the Air Force and Navy to determine the practical effectiveness or spraying pure anti-crop agents at low volume from aircraft. C-47 and Navy XBT2D-l aircraft with various | Yes |
| Area B. Corp Detrick, MD | Spring/ Summer 1953 | 3:1 mixture 2,4-D and 2,4,5-T | Personnel at Camp Detrick tested the feasibility of using an experimental spray tower for applying a mixture of chemical anti-crop agents a broad leaf crops. | Yes |
| Bushnell | 2/1945 - | 2,4-D and its | Trials, performed by C.W.S. personnel | Yes |

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| Army Air Field, Bushnell, FL | 4/1945 | ammonium salt | from Camp Detrick, MD. Tested the practicability of severely injuring or destroying crop plants sprayed from smoke tanks mounted on tactical aircraft. | |
| SEA | Summer 1977 | Orange | In 1977, the USAF incinerated 2.22 million gallons of Herbicide Orange at sea in an operation entitled PACER HO. Extensive industrial hygiene sampling efforts supporting the transfer operations at Gulfport, MS and Johnston Island indicated all exposures... | Yes Gulfport, No |
| Korea, Third Brigade, 2nd Division Area | 7/23/1965 – 7/24/1968 | Hyvar XWS, tandex, Urox B, Urox oil, concentrate (liquids) bromacil, tandex, Urox 22 (solids) | In I 968. chemicals were sent from the Plant Sciences Lab, Ft Detrick, MD. to the Republic of Korea for the purpose of testing their effectiveness in the control or vegetation. | Yes |
| Marinette WI, Weslaco, TX | 5/1967 – 1/1969 | Arsenic compounds, Orange, cacodylic acid, sodium cacodylate | 71 new arsenic corn pounds were tested in primary screening against six plant species in greenhouse tests. Then, five of the most active compounds were tested in field trials against Red Maple and compared to formulations of cacodylate acid and a 50:50 blend of... | Yes |
| Eglin AFB, FL | 6/11/1968 – 6/12/1968 | Orange, Bifluid #l, Bifluid #2, Stull Bifluid | A spread factor study was performed by the Army to correlate the spherical drop sizes of both Orange and Stull Bifluid defoliants. It involved development of new techniques to determine spread factors over an extended range of drop sizes. A spinning cup d... | Yes |
| Fort Ritchie, MD | 1963 | Tordon; 2,4-D; Orange; diquat; endothal; and combinations of each with Tordon | Various studies were done to explore the effectiveness of different herbicides. They were all field trials. These studies were done by personnel from the US Army Biological Laboratories. | Yes |
| Fort Meade. MD | 1963 | Cacodylic acid, Dowco 173, butyediol | Various studies were done to explore the effectiveness of different herbicides. They were all field trials. These studies were done by personnel from the US Army Biological Laboratories. | Yes |
| Kumbla, South India | 1945 -1946 | LN compounds *phenoxy | The main objective of the experiments was to determine the feasibility of accomplishing severe injury or destruction of tropical food crops by the application of growth-inhibiting (LN*) compounds in static trials. Field plantings were treated with various... | Yes |

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| Camp Detrick, MD – Fields A, B, and C | 1945 -1947 | 2,4,5-T; 2,4,5-T triethanomine tributylphosphate; ethyl 2,4-D; butyl 2,4,5-Triet 2,4-D | The experiments were directed mainly towards the investigation of plant inhibitors applied as sprays or to the soil in solid form to be taken up by the roots. | Yes |
| Camp Detrick, MD – Fields C, D, and E | 1948 | 2,4,5-T; isopropyl phenol carbamate, LN 2426, 2,4-D | The experiments were directed mainly towards the investigation or plant inhibitors applied as sprays or in the solid form to be taken up by the roots. | Yes |
| Camp Detrick, MD – Fields C, D, E | 1949 | Triethelyne; 2,4,5-T; carbamates | The experiments were directed mainly towards the investigation or plant inhibitors applied as sprays or in the solid form to be taken up by the roots. Experiments were done by Ennis, DeRose, Newman, Williamson, DeRigo, and Thomas | Yes |
| Kingston, RI | 7/26/1949, 1950-51 | Trieth 2,4,5-T; butyl 2,4,5-T; 974 | The experiments were directed mainly towards the investigation or plant inhibitors applied as sprays or in the solid form to be taken up by the roots. Experiments were carried under supervision of TE Odland of RI State College H.T. D. | Yes |
| Camp Detrick, MD – Fields A, B, D, E | 1950 | 2464, butyl 2,4-D; 974, butyl 2,4,5-T; q:q 143 and 974 | The experiments were directed mainly towards the investigation or plant inhibitors applied as sprays or in the solid form to be taken up by the roots. Experiments were done by Ennis, DeRose, Acker, Newman, Williamson, and Zimmerly | Yes |
| Camp Detrick, MD – Field F | 1950-51 | 2464, butyl 2,4-D; 143 and 974 (Orange?); 2,4,5-T and 2,4-D, Orange | The experiments were directed mainly towards the investigation or plant inhibitors applied as sprays or in the solid form to be taken up by the roots. Experiments were done by Acker, DeRose, McLane, Newman, Williamson, Baker, Dean, Johnson, T… | Yes |
| Orlando, FL at Army Grove Air Force's Tactical Center | 3/14/1944, 4/12/1944 | ammonium thiocynate, zinc chloride, sodium nitrate, sodium arsenate, sodium fluoride | The purpose was to determine means or accomplishing defoliation of tropical forest vegetation by application of a chemical agent. | Yes |
| Marathon, FL | 3/21/1944, 3/23/1944 | zinc chloride, ammonium sulphamate, ammonium thiocynate | The purpose was to determine means or accomplishing defoliation of tropical forest vegetation by application of a chemical agent. Spraying was done here. | Yes |
| Near Lake George, FL | Spring 1944 | zinc chloride | The purpose was to determine means or accomplishing defoliation of tropical forest vegetation by application of a | Yes |

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| | | | chemical agent. Spraying here. | |
| Near Wayside, MS; Wilcox Road, Greenville, MS | 8/18/1967 | Picloram, bromacil, pyriclor and terbacil, Orange, cacodylic acid | In 19€7, the Dow Chemical Company was awarded a DoD research contract. The objective was to prepare as pellets mixtures or various herbicides and to test them on varying vegetation situations for the control of range of plant species. | Und |
| Las Mesas Cerros, Mayaguez, PR | 5/24/1968 5/26/1968 5/27/1968 | Picloram, bromacil, pyriclor | In 19€7, the Dow Chemical Company was awarded a DoD research contract. The objective was to prepare as pellets mixtures or various herbicides and to test them on varying vegetation situations for the control of range of plant species. | Und |
| Fulcher Ranch. Greenville, MS | 4/18/1968 | Picloram and bromacil | In 19€7, the Dow Chemical Company was awarded a DoD research contract. The objective was to prepare as pellets mixtures or various herbicides and to test them on varying vegetation situations for the control of range of plant species. | Und |
| Replacement Training Center of the Royal Thai Army near Pranburi, Thailand | 1964 and 1965 | Orange and Purple | An extensive series or tests were conducted by Fort Detrick during 1964 and 1965 in collaboration with the Military Research and Development Center of Thailand. The objective was to perform onsite evaluation of phytotoxic chemicals on vegetation in SEA | Yes |
| Las Mesas and La Jagua experimental areas at Mayaguez. PR | 2/1956 – 6/1956 | 2,4,5-T; 2,4-D; pentachloropheno I; ammate; weedazol; endothal; Harvestaid; Butyne-l,4-diol | During February to June, 9 chemicals were evaluated in PR on 16 genera tropical woody plants. The chemicals were applied in highly concentrated solutions with a micro-sprayer to the leaves. | Yes |
| Guanica and Joyuda, PR | 6/1956 – 9/1956 | 2,4,5-T; potassium cyanate, amiendo, F-2, 6-Ca-4, Y-F Tree and Brush Killer. ACP M-118. Shed A-Leaf | Nine chemicals were evaluated on 16 genera of tropical woody between June and September. The chemicals were sprayed to duplicate small branches, using a micro-sprayer | Yes |
| Las Mesas and La Jagua Mayaguez, Joyuda at caho Rojo and Guanica Insular Forest at Guanica, PR | 9/1956 – 12/1956 | 6-Ca-4, Liojn Oil; 2,4,5-T; B-1613; B-1638; Ammate; V-C1-186; endothal; Shed-A-Leaf; M-118; Y-F; esteron; 2,4-D | Sixteen compounds with defoliating properties were evaluated using 26 different tropical plants, each representing a separate genus. The chemicals were applied to duplicate small branches with a micro-sprayer and to single target branches or whole trees. | Yes |
| Las Mesas and | 1/1957 – | V-C 3-105; V-C 1-21; | Seven compounds were evaluated on | Yes |

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| La Jagua Mayaguez, Guanica Beach, PR | 3/1957 | V-C 1-443; F-7; TSP; Phillips 713; V-C 3-173 | 29 different woody plants to determine their effectiveness as defoliants, desiccants, and as killing agents. They were applied with a micro-sprayer to the upper leaf surfaces of duplicate small branches. | |
| Las Mesas and La Jagua Mayaguez, Guanica Beach, PR | 4/1957 – 6/1957 | B-1676; B-1638; NP 1098; SD 1369; Ammate; Shed-A-Leaf | Seven compounds were evaluated on 29 different woody plants to determine their effectiveness as defoliants, desiccants, and as killing agents. They were applied with a micro-sprayer to the upper leaf surfaces of duplicate small branches. | Yes |
| Las Mesas and La Jagua Mayaguez, PR | 7/1957 – 12/1957 | MgCIO3; Golden Harvest Defoliant; Dow-M562; F-8; F-9; F-10; F-11; F-12 | Eight different spray formulations were applied to 15 different tropical trees and shrubs in order to evaluate their effectiveness as defoliants, desiccants, and as killing agents. | Yes |
| Southeastern part or Kompong Cham Province and Dar and Prek Clong p1anations, Cambodia | 6/1969 | Orange | In 6/1969, the US government received notice of charge by Cambodian government that major defoliation damage to the Cambodian rubber plantation near the RVN border had occurred as a result of US defoliation activity. This was confirmed by a team of experts. | Yes |
| State Forest area, 3500 ft elevation on slope of Mauna Loa, near Hilo, HI | 12/2/1965 12/4/1965 1/12/1967 | Orange; M-3140; TORDON ester; 2,4-D ester; 2,4,5-T ester | The purpose of this project was to evaluate iso-octyl ester of picloram (TORDON) in fixtures with ORANGE, as a candidate defoliant agent using ORANGE as standard. There were personnel from Fort Detrick there. | Und |
| Stone Valley Experimental Forest in Huntington County and near State College in Centre County, PA | 3/1969 - 10/1970 | Bromacil; diuron; tandex; fenuron; plicoram | Soil-applied herbicides were studied by the U of PA with Ft Detrick for 18 months for their effectiveness, rapidity of action and duration of response in native stands of central PA grasses, broadleaf weeds, and woody plants. These herbicides were spread | Und |
| Fort Detrick, MD; Fort Ritchie, MD | 1956 -1957 | Various, 577 compounds | In 1956-1957, defoliation and desiccation were carried out at Fort Detrick and Fort Ritchie. Maryland by the Chemical Corps and Biological Warfare Research. These were bench tests. | Yes |
| GA and TN | 1964 | Diquat and Tordon 101; various | In 19€4. helicopter spray tests were conducted on transmission line right-of-way by the Georgia Power Company and Tennessee Valley Authority in collaboration with Fort Detrick to | Yes |

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| | | | evaluate effectiveness of several commercially available herbicides | |
| Two areas in FL; Two areas in GA; and One in TN | 1968 | Bromacil, Tandex, monuron, diuron, and feruron | In 19€8. emphasis was given to soil applied herbicide a for grass control. Applications were made by a jeep-mounted sprayer on small plots or by helicopter on larger plots. | Yes |
| Orlando, FL; Cocoa. FL | 1944 | ammonium thiocyanate and zinc chloride | Tests were conducted in 1944 by the Army in Orlando and Cocoa areas of Florida to determine the value of ammonium thiocyanate and chloride as marking and defoliation agents.. They were conducted initially at ground level and later from aircraft. | Yes |
| Fort Knox, KY | 1945 | various | In 1945. a special project known as Sphinx was conducted jointly by CWS and the ARML to investigate the use or chemical agents for increasing the flammability of vegetation prior to flame attack. | Yes |
| Avon Park Air Force Base. FL | Spring 1954 | butyl 2,4-D; butyl 2,4.5-T; Isopropyl 2,4-D | Series of tests were conducted at Avon Park AFB during he spring of 1954 to study he behavior of chemical anti-crop aerial sprays when released from high-speed jet aircraft. The Navy F3D jet fighter was used with Aero 14A Airborne Spray Tanks to disperse. | Yes |
| Galatin Valley near Bozeman, Montana | 7/3/1953, 7/6/1953 7/14/1953 | 4-fluorophenoxy-acetic acid and 2 of its esters, 3:1 butyl 2,4-D and butyl 2 4,5-T | A preliminary series of field evaluations of chemical agents for attacking wheat using a miniature spraying system mounted on light aircraft were preformed by USDA. | Yes |
| Laos | 12/1985 - 1967 | Orange | In December 1965. herbicide operations were begun in Laos with sorties being flown from Tan Son Nhut and Da Nang. The purpose was the exposure of foot trails, dirt roads, and other LOCs that crossed into SVN. This network leads from NVN through the east | Yes |
| Pinal Mountains near Globe, AZ | 1965, 1966, 1968, and 1969 | 2,4-D isooctyl-ester; 2,4,5-T isooctyl-ester; Silvex; propyleneglycolbu tylether ester; 2,4,5-T butyl ester; another 2,4,5-T ester | In 1965, the USFS began a land improvement program in the Pinal Mountains. The program called for spraying an area of chaparral with herbicides to accomplish the objective of multiple land use. | No |
| Near Rio Grande on the northeast coast of Puerto | 8/23/1967, 10/18/1967, 12/21/1967, 12/26/1967 | picloram, bromacil, pyriclor, and terbacil | In 1967. the Dow Chemical Company was awarded a DoD research contract. The objective was to prepare as pellets mixtures or various herbicides and to | Und |

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| Rico | | | test them on varying vegetation situations for the control of a range of plant species. | |
| Poole's Island, Aberdeen Proving Ground, MD | 7/14/1969 | Orange; Orange plus foam | During the week of 7/14/1969, personnel from Naval Applied Science Laboratory in conjunction with Personnel from Limited War Laboratory conducted a defoliation test along the shoreline. | Yes |
| Fort Drum, NY | 1959 | Orange | The Commanding General, 1st US Army, requested that Ft Detrick assist with defoliation efforts at Ft Drum. Thirteen drums were sprayed there on 4 square miles from a helicopter spray device. | Yes |
| Loquillo, PR | 4/1966, 10/1966 | Orange | Field tests of defoliants were designed to evaluate such variables as rates, volume of application, season, and vegetation. Data from aerial application tests at several CONUS and OCONUS locations are provided in tables. | Yes |
| Hilo, HI | 10/1966 | Orange | Field tests of defoliants were designed to evaluate such variables as rates, volume of application, season, and vegetation. Data from aerial application tests at several CONUS and OCONUS locations are provided in tables. There were Fort Detrick personnel present. | Yes |
| Kauai, HI | 1967 | Orange | Field tests of defoliants were designed to evaluate such variables as rates, volume of application, season, and vegetation. Data from aerial application tests at several CONUS and OCONUS locations are provided in tables. | Yes |
| Thailand | 1964-1965 | Orange; Blue | Field tests of defoliants were designed to evaluate such variables as rates, volume of application, season, and vegetation. Data from aerial application tests at several CONUS and OCONUS locations are provided in tables. | Yes |
| Jacksonville, FL | 7/18/1962 - 7/21/1962 | Purple fuel oil mix | The HIDAL was used successfully on an H-34 helicopter to spray herbicidal materials. Therefore, it had not be done previously. This was done under order by OSD/ARFA | Yes |
| Fort Detrick, MD | 8/1964-6/1963 | 1410 compounds | From 1961 to 1963, compounds were spray-tested in the greenhouse to evaluate them as effective defoliants, | Yes |

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| | | | desiccants. and herbicides | |
| Gulfport, MS | 1968-1970 | Orange | While discussing the mandatory disposal of Orange, it was mentioned that 15,161 drums were being stored at Gulfport, Mississippi | Yes |
| Korea, 2nd and 4th Brigades, 2nd Division area | 8/1968 | Hyvar XWS; tandex; Urox B; Urox oil concentrate (liquids); bromacil, tandex, Urox 22 (solids) | In 1968. chemicals were sent from the Plant Sciences Lab, Ft Detrick, MD to the Republic of Korea for the purpose of testing their effectiveness in the control of vegetation | Yes |
| Korea, 3rd Brigade, 2nd Division area | 10/3/1968 | Hyvar XWS; tandex; Urox B; Urox oil concentrate (liquids); bromacil, tandex, Urox 22 (solids) | In 1968. chemicals were sent from the Plant Sciences Lab, Ft Detrick, MD to the Republic of Korea for the purpose of testing their effectiveness in the control of vegetation | Yes |
| Hays, KS, Langdon, ND | 1960 | Stem rust of wheat | Two studies on the stem rust of wheat were conducted during 1960 to obtain data on the establishment, development. and destructiveness of artificially induced stem rust epiphytotics | Und |
| Eglin AFB. FL. C-52A test area | 1960 - 1972 | Orange (1962-68); Purple (1962-68); White (1947-70); Blue (1968-70) | CPT John Hunter discussed vegetation changes and ecological studies of the 2 square mile test area which had been sprayed with herbicides over the period 1962-70. | Yes |
| Beaumont, TX | 1950 - 1951 | 2,4-D | The purpose was to determine means of accomplishing defoliation of tropical forest vegetation by application of a chemical agent. Here, irrigation water studies were done with the agent. Coghill, Hasse, and Yeatner worked here. | Und |
| Prosser, WA | 1950 - 1951 | 2,4-D | The purpose was to determine means of accomplishing defoliation of tropical forest vegetation by application of a chemical agent. Here, irrigation water studies were done with the agent. VF Burns worked here. | Und |
| Brawley, CA | 1950 - 1951 | 2,4-D | The purpose was to determine means of accomplishing defoliation of tropical forest vegetation by application of a chemical agent. Here, irrigation water studies were done with the agent. HF Arle worked here. | Und |