

AGENT ORANGE USE - OUTSIDE VIETNAM - 01/28/2003

ID	Report Title	Pg #	Box #	Location	Dates	Agents	Project Description	DoD Involvement
1	Technical Report 114, Field Evaluation of Desiccants and Herbicide Mixtures as Rapid Defoliant	10	1	Apalachicola National Forest near Sophoppy, FL	5/3/1967-5/8/1967	basic desiccants and Orange/Blue	During the period of 12/1966 - 10/1967, a comprehensive short-term evaluation was conducted by personnel from Fort Detrick's Plant Science Lab in coordination with contract research on formulations by chemical industry and field tests by USDA and U of HI	Yes
2	Technical Report 114, Field Evaluation of Desiccants and Herbicide Mixtures as Rapid Defoliant	10	1	Fort Gordon, GA	7/15/1967-7/17/1967	in-house desiccants mixtures and formulations, Orange and Blue	During the period of 12/1966 - 10/1967, a comprehensive short-term evaluation was conducted by personnel from Fort Detrick's Plant Science Lab in coordination with contract research on formulations by chemical industry and field tests by USDA and U of HI	Yes
3	Technical Report 114, Field Evaluation of Desiccants and Herbicide Mixtures as Rapid Defoliant	10	1	Fort Chaffee, AK	5/16/1967-5/18/1967, 7/22/1967-7/23/1967, 8/23/1967 - 8/24/1967	basic, in-house, improved desiccants and Orange, Blue	During the period of 12/1966 - 10/1967, a comprehensive short-term evaluation was conducted by personnel from Fort Detrick's Plant Science Lab in coordination with contract research on formulations by chemical industry and field tests by USDA and U of HI	Yes
4	Technical Report 114, Field Evaluation of Desiccants and Herbicide Mixtures as Rapid Defoliant	10	1	Base Gagetown near Fredericton, New Brunswick, Canada	6/20/1967-6/24/1967	basic desiccants and Orange, Blue, various	During the period of 12/1966 - 10/1967, a comprehensive short-term evaluation was conducted by personnel from Fort Detrick's Plant Science Lab in coordination with contract research on formulations by chemical industry and field tests by USDA and U of HI	Yes
5	Technical Report 114, Field Evaluation of Desiccants and Herbicide Mixtures as Rapid Defoliant	12	1	Las Marias, Puerto Rico	2/1967-12/1967	various, including Orange	During the period of 12/1966 - 10/1967, a comprehensive short-term evaluation was conducted by personnel from Fort Detrick's Plant Science Lab in coordination with contract research on formulations by chemical industry and field tests by USDA and U of HI	Yes
6	Technical Report 114, Field Evaluation of Desiccants and Herbicide Mixtures as Rapid Defoliant	13	1	Kauai Branch Station near Kapaa, Kawai, HI	6/1967, 10/1967, 2/1968, 12/1967	Blue, diquat, paraquat, Orange, PCP, Picloram, White, HCA, 2,4,5-T, Endothall	During the period of 12/1966 - 10/1967, a comprehensive short-term evaluation was conducted by personnel from Fort Detrick's Plant Science Lab in coordination with contract research on formulations by chemical industry and field tests by USDA and U of HI	Yes
7	Report of Standing Subpanel E-2.5 on Plant Sciences	11	Drawe r 1	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
8	Special Report No. 184, Anticrop Aerial Spray Trials, Phase III	1	17	Englin Air Force Base, FL	11/1952-12/1952	2,4-D, 2,4,5-T: 143 and 974, respectively	Two trials: Chemical Corps-concerned with basic fundamental work, using 2,4-D, Air Force-concerned with evaluating prototype large capacity spray system for aircraft installation using 2,4,5-T, primarily. Used 3 atomizing nozzles: Bete Fog Nozzles, Whir	Yes
9	Special Report No. 79, Destruction by Chemical Agents also see Special Report No. 25, Vigo Plant CWS, Terre Haute, Indiana, and Beaumont TX, Box 12	4	17	Beaumont, TX	6/1944	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, they were testing on rice crops.	No
10	Special Report No. 79, Destruction by Chemical Agents	4	17	Bushnell Army Air Field, FL	2/1945	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

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11	Special Report No. 79, Destruction by 5 Chemical Agents also see Special Report No. 25, Vigo Plant CWS, Terre Haute, Indiana, and Beaumont TX, Box 12	17	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
12	Special Report No. 79, Destruction by 5 Chemical Agents	17	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
13	Special Report No. 79, Destruction by 5 Chemical Agents	17	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
14	Special Report No. 149, Low Volume Anticrop Aerial Spray Trials	17 and 12	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 of spraying pure anticrop agents from at low volume from aircraft. C-47 and Navy XBT2D-1 aircraft with var	Yes
15	Special Report No. 201, Field Development of Chemical Anticrop Agents, Response of Field Grown Crops to Chemical Anticrop Agents Released from Experimental Spray tower	4	17 area B, Camp 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 anticrop agents to broad-leaf crops.	Yes
16	Crop Destruction by Aerial Sprays, Preliminary Trials also see Special Report No. 14, The Effect of VKA and VKS on Natural Vegetation, Box 12	5	17 Bushnell Army Air Field, Bushnell, FL	2/1945-4/1945	2,4-D and its ammonium salt	Trials, performed by C.W.S. personnel from Camp Detrick, MD tested the practicability of severely injuring or destroying crop plants sprayed from smoke tanks mounted on tactical aircraft.	Yes
17	Technical Report USAF OEHL -78-92, II-1 the Toxicology, Environmental Fate and Human Risk of Herbicide Orange and its Associated Dioxin	17	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, JI
18	Memo for Record, Summary 1968 Vegetation Control Tests	2	Drawe Korea, third Brigade, 2nd Division area	7/23/1968-7/24/1968	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
19	Development of Arsenic Based Defoliant	3	8 Marinette, WI, Weslaco, TX	5/1967-1/1969	arsenic compounds, Orange, cacodylic acid, sodium cacodylate	71 new arsenic compounds were tested in primary screening against 6 plant species in greenhouse tests. Then, 5 of the most active compounds were tested in field trials against Red Maple and compared to formulations of cacodylic acid and a 50:50 blend of	Yes
20	Spread Factor Study of Drops of Orange and Stull Bifluid Defoliant on Kromekote Cards and Plant Leaves	ii	8 Eglin AFB, FL	6/11/1968-9/12/1968	orange, Bifluid #1, 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 defoliant. It involved development of new techniques to determine spread factors over an extended range of drop sizes. A spinning cup d	Yes
21	Miscellaneous Publication 8, Proceedings of the Second Defoliation Conference 5-6 August 1964	155	11 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

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22	Miscellaneous Publication 8, Proceedings of the Second Defoliation Conference 5-6 August 1964	156	11	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
23	Special Report No. 64, Destruction of Tropical Crops with Growth-inhibiting Agents	4	12	Kumbala, 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 variou	Yes
24	Special Report No. 92, Field Plot Experiments with Plant Inhibitors 1946 and 1947 Seasons	1	12	Camp Detrick, MD-Fields A,B, and C	1946-1947	2,4,5-T, 2,4,5-T triethanolamine, 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 the solid form to be taken up by the roots.	Yes
25	Special Report No. 105, Field Plot Experiments with Plant Inhibitors 1948 Season	2	12	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 of plant inhibitors applied as sprays or to the soil in the solid form to be taken up by the roots.	Yes
26	Special Report No. 130, Field Plot Experiments with Plant Inhibitors 1949 Season	2	12	Camp Detrick, MD-Fields C,D,E	1949	triethelyne. 2,4,5-T, carbamates	The experiments were directed mainly towards the investigation of plant inhibitors applied as sprays or to the soil in the solid form to be taken up by the roots. Experiments were done by Ennis, DeRose, Newman, Williamson, DeRigo, and Thomas.	Yes
27	Special Report No. 130, Field Plot Experiments with Plant Inhibitors 1949 Season	28	12	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 of plant inhibitors applied as sprays or to the soil in the solid form to be taken up by the roots. Experiments were carried out under supervision of T.E. Odland if RI State College. H.T. D	Yes
28	Special Report No. 153, Field Plot Experiments with Plant Inhibitors, 1950 Season	2	12	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 of plant inhibitors applied as sprays or to the soil in the solid form to be taken up by the roots. Experiments were done by Ennis, DeRose, Acker, Newman, Williamson, and Zimmerly.	Yes
29	Special Report No. 156, Field Plot Experiments with Plant Inhibitors, 1950-51 Season	2	12	Camp Detrick, MD-Field F	1950-51	2464, carbamate, butyl 2,4-D, 143 and 974 (orange?),2,4,5-T, 2,4-D, Orange	The experiments were directed mainly towards the investigation of plant inhibitors applied as sprays or to the soil 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
30	Special Report No. 13, Marking and Defoliation of Forest Vegetation	1	12	Orlando, FL at Army Grove Air Force's Tactical Center	3/14/1944, 4/12/1944	ammonium thiocyanate, zinc chloride, sodium nitrate, sodium arsenate, sodium fluoride	The purpose was to determine means of accomplishing defoliation of tropical forest vegetation by application of a chemical agent.	Yes
31	Special Report No. 13, Marking and Defoliation of Forest Vegetation	8	12	Marathon, FL	3/21/1944-3/23/1944	zinc chloride, ammonium sulphamate, ammonium thiocyanate	The purpose was to determine means of accomplishing defoliation of tropical forest vegetation by application of a chemical agent. Spraying was done here.	Yes
32	Special Report No. 13, Marking and Defoliation of Forest Vegetation	9	12	near Lake George, FL	Spring 1944	zinc chloride	The purpose was to determine means of accomplishing defoliation of tropical forest vegetation by application of a chemical agent. Spraying here.	Yes

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33	Formulation and Testing of Broad Spectrum of Herbicide Pellets, First Six Month's Report on Contract No. DAAA13-67-C-0218	14	8	near Wayside, Miss., Wilcox Road, Greenville, Miss.	9/19/1967	picloram, bromacil, pyriclor, and terbacil, Orange, cacodylic acid	In 1967, the Dow Chemical Company was awarded a DoD research contract. The objective was to prepare as pellets mixtures of various herbicides and to test them on varying vegetation situations for the control of a range of plant species.	Und
34	Formulation and Testing of Broad Spectrum of Herbicide Pellets, Second Six Month's Report on Contract No. DAAA13-67-C-0218	15	8	Las Mesas Cerros, Mayaguez, PR	5/24/1968, 5/26/1968, 5/27/1968	picloram, bromacil, pyriclor	In 1967, the Dow Chemical Company was awarded a DoD research contract. The objective was to prepare as pellets mixtures of various herbicides and to test them on varying vegetation situations for the control of a range of plant species.	Und
35	Formulation and Testing of Broad Spectrum of Herbicide Pellets, Second Six Month's Report on Contract No. DAAA13-67-C-0218	28	8	Fulcher Ranch, Greenville, Mississippi	4/15/1968	picloram and bromicil	In 1967, the Dow Chemical Company was awarded a DoD research contract. The objective was to prepare as pellets mixtures of various herbicides and to test them on varying vegetation situations for the control of a range of plant species.	Und
36	Appendix D, Aerial Herbicide Applications Evaluated for Maximum Effect and Minimum Drift	6	8	Replacement Center of the Royal Thai Army near Pranburi, Thailand	1964 and 1965	Orange, Purple	An extensive series of 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 SE As	Yes
37	First Quarterly Progress Report of Research carried out by the Federal Experiment Station in Puerto Rico for The Chemical Corps Biological Laboratories, Fort Detrick on contract #CD6-404-3654	1	8	Las Mesas and La Jagua experimental areas at Mayaguez, PR	2/1956-6/1956	2,4,5-T, 2,4-D, pentachlorophenol, ammate, weedazol, endothal Harvestaid, Butyne -1,4-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 microsprayer to the leaves.	Yes
38	Second Quarterly Progress Report of Research carried out by the Federal Experiment Station in Puerto Rico for The Chemical Corps Biological Laboratories, Fort Detrick on contract #CD6-404-3654	1	8	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 Kiler, ACP M-118, Shed-A-Leaf	9 chemicals were evaluated on 16 genera of tropical woody between June and September. The chemicals were sprayed to duplicate small branches, using a microsprayer.	Yes
39	Third Quarterly Progress Report of Research carried out by the Federal Experiment Station in Puerto Rico for The Chemical Corps Biological Laboratories, Fort Detrick on contract #CD6-404-3654	1	8	Las Mesas and La Jagua, Mayaguez, Joyuda at Cabo 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, esterone 2,4-D, F3, F4, F5, F6	16 compounds with defoliating properties were evaluated using 28 different tropical woody plants, each representing a separate genus. The chemicals were applied to duplicate small branches with a microsprayer and to single larger branches or whole trees	Yes
40	Fourth Quarterly Progress Report of Research carried out by the Federal Experiment Station in Puerto Rico for The Chemical Corps Biological Laboratories, Fort Detrick on contract #CD6-404-3654	3	8	Las Mesas and La Jagua, Mayaguez, Guanica Beach, PR	1/1957-3/1957	V-C 3-105, V-C 1-21, V-C 1-443, F-7, TBP, Phillips 713, V-C 3-173	7 compounds were evaluated on 29 different woody plants to determine their effectiveness as defoliant, desiccants, and as killing agents. They were applied with a microsprayer to the upper leaf surfaces of duplicate small branches.	Yes
41	Quarterly Progress Report of Research carried out by the Federal Experiment Station in Puerto Rico for The Chemical Corps Biological Laboratories, Fort Detrick on contract #CD6-404-3654	2	8	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	7 compounds were sprayed on 25 different plants in order to evaluate their effectiveness as defoliant, desiccants, and killing agents. The compounds were applied with a microsprayer to the upper and lower leaf surfaces of duplicate small branches.	Yes
42	Progress Report of Research carried out by the Federal Experiment Station in Puerto Rico for The Chemical Corps Biological Laboratories, Fort Detrick on contract #CD6-404-3654	2	8	Las Mesas and La Jagua, Mayaguez, PR	7/1957-12/1957	MgClO3, Golden Harvest Defoliant, Dow-M562, F-8, F-9, F-10, F-11, F-12	8 different spray formulations were applied to 16 different tropical trees and shrubs in order to evaluate their effectiveness as defoliant, desiccants, and killing agents.	Yes

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43 Record 1305-01, Report of Cambodian Rubber Damage	1	8	southeastern part of Kompong Cham Province and Dar and Prek Clong plantations, 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 exper	Yes
44 Dow Sponsored Test of TORDON Ester and Orange in Hawaii	1	8	State Forest area, 3500 ft.elevation on slope of Mauna Loa, near Hilo, HI	12/2/1966, 12/4/1966, 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 mixtures with ORANGE, as a candidate defoliant agent, using ORANGE as standard. There were personnel from Fort Detrick there.	Und
45 Soil Applied Herbicides in the Control of Temperate Zone Grasses, Broadleaf Weeds and Woody Plants	1	8	Stone Valley Experimental Forest in Huntington County and near State College in Centre Countv. PA	3/1969-10/1970	bromacil, diuron, tandex, fenuron, picloram	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 sprea	Und
46 Technical Report BWL 16, Defoliation and Desiccation	9	1	Fort Detrick, MD; Fort Ritchie, MD	1956-1957	various, 577 compounds	In 1956 And 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
47 Report of Standing Subpanel E-2.5 on Plant Sciences	10	4	GA and TN	1964	diquat and Tordon 101, various	In 1964, helicopter spray tests were conducted on transmission line rights-of-way by the Georgia Power Company and Tennessee Valley Authority in collaboration with Fort Detrick to evaluate effectiveness of several commercially available herbicides.	Yes
48 Report of Standing Subpanel E-2.5 on Plant Sciences	11	4	2 areas in FL, 2 areas in GA, and 1 in TN	1968	bromacil, Tandex, monuron, diuron, and fenuron	In 1968, emphasis was given to soil applied herbicides for grass control. Applications were made by a jeep-mounted sprayer on small plots or by helicopter on larger plots.	Und
49 Development of Army Defoliation Systems, TIR 21-2-1A1	1	4	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
50 Development of Army Defoliation Systems, TIR 21-2-1A1	2	4	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 of chemical agents for increasing the flammability of vegetation prior to flame attack.	Yes
51 Special Report No. 225, Chemical Anticrop Aerial Spray Trials Using Jet Aircraft also in Special Report 232, Some Effects of Altitude and Airspeed on the Behavior of Chemical Anticrop Sprays, Box 18	ii	7	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 the spring of 1954 to study the behavior of chemical anticrop aerial sprays when released from high-speed jet aircraft. The Navy F3D jet fighter was used with Aero 14A Airborne Spray Tanks to dispers	Yes
52 Special Report No. 200, Field Development of Chemical Anticrop Agents	3	7	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 performed by USDA.	No
53 Herbicide Operations in Southeast Asia, July 1961-June 1967	22	7	Laos	12/1965- 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 eas	Yes

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54 Investigation of Spray Project near Globe, AZ	1	8	Pinal Mountains near Globe, AZ	1965, 1966, 1968, and 1969	2,4-D isooctyl-ester, 2,4,5-t isooctyl-ester, silvex, propyleneglycol butylether ester, 2,4,5-T 2-e-	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 objectives of multiple land use.	No
55 Formulation and Testing of Broad Spectrum of Herbicide Pellets, First Six Month's Report on Contract No. DAAA13-67-C-0218	9	8	near Rio Grande, on the northeast coast of Puerto Rico	8/23/1967, 10/18/1967, 12/21/1967-12/26/1967	he 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 of various herbicides and to test them on varying vegetation situations for the control of a range of plant species.	Und
56 Summary Report, Herbicide Operations Conducted from Riverine Watercraft	3-1	13	Poole's Island, Aberdeen Proving Ground, MD	7/14/1969-	Orange, Orange plus foam, Orange plus foam Orange, 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
57 Miscellaneous Publication 33, Information Manual for Vegetation Control in Southeast Asia	9	13	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
58 Miscellaneous Publication 33, Information Manual for Vegetation Control in Southeast Asia	40	13	Loquillo, PR	4/1966, 10/1966	Orange	Field tests of defoliant 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
59 Miscellaneous Publication 33, Information Manual for Vegetation Control in Southeast Asia	40	13	Hilo, HI	12/1966	Orange	Field tests of defoliant 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 persone	Yes

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60	Miscellaneous Publication 33, Information Manual for Vegetation Control in Southeast Asia	40	13	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
61	Miscellaneous Publication 33, Information Manual for Vegetation Control in Southeast Asia	40	13	Thailand	1964-65	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
62	Spray Test Calibration of the HIDAL (HUS-1 or H-34)	1	15	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 been calibrated previously. Spray tests were performed to do so. This was done under order by OSD/ARPA.	Yes
63	Abstracts of Technical Publications April 1965-June 1965, July 1965, Technical Report 50, Defoliation Studies: Screening of Defoliants, Herbicides, and Desiccants	10	22	Fort Detrick, MD	8/1961-6/1963	1410 compounds	From 8/1961 to 6/1963, compounds were spray-tested in the greenhouse to evaluate them as effective defoliants, desiccants, and herbicides.	Yes
64	Minutes of the Quarterly Meetings for Calendar Year 1970 of the Subcommittee on Defoliants/Anticrop Systems, Joint Technical Coordinating Group/Chemical Biological	9,26	1	Gulfport, Miss.	1968-1970	Orange	While discussing the mandatory disposal of Orange, it was mentioned that 15,161 drums were being stored at Gulfport, Mississippi.	Yes
65	Memo for Record, Summary 1968 Vegetation Control Tests	2	Drawe r 1	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
66	Memo for Record, Summary 1968 Vegetation Control Tests	2	Drawe r 1	Korea, third 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
67	Technical report 40, Stem Rust in Analog Areas, 1960	3	Drawe r 3	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.
68	Minutes-Meeting of Vegetation Control Subcommittee of the JTCG/CB, 2-3 March 1971	7	Drawe r 4	Eglin AFB, FL, C-52A test area	1962-70	Orange (1962-68), Purple (1962-68), White (1967-70), 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
69	Special Report No. 13, Marking and Defoliation of Forest Vegetation	v	12	Beaumont, TX	1950-51	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 woorked here.	Und.
70	Special Report No. 13, Marking and Defoliation of Forest Vegetation	v	12	Prosser, WA	1950-51	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. V.F. Burns worked here.	Und.

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71 Special Report No. 13, Marking and
Defoliation of Forest Vegetation v

12

Brawley, CA

1950-51

2,4-D

The purpose was to determine means Und.
of accomplishing defoliation of
tropical forest vegetation by
application of a chemical agent. Here,
irrigation water studies were done with
the agent. H.F. Arle worked here

ID	Report Title	Pg #	Box #	Location	Dates	Agents
1	Technical Report USAF OEHL -78-92, the Toxicology, Environmental Fate and Human Risk of Herbicide Orange and its Associated Dioxin	II-1	17	Sea	Summer 1977	Orange
2	Minutes of the Quarterly Meetings for Calendar Year 1970 of the Subcommittee on Defoliants/Anticrop Systems, Joint Technical Coordinating Group/Chemical Biological	9,26	1	Gulfport, Miss.	1968-1970	Orange

Project Description

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 were inconsequential (2-3 orders of magnitude below the TLVs for 2,4-D and 2,4,5-T).

While discussing the mandatory disposal of Orange, it was mentioned that 15,161 drums were being stored at Gulfport, Mississippi.

DoD**Involvement**

Yes, Gulfport
No, JI

Yes

ID	Report Title	Pg #	Box #	Location	Dates	Agents
1	Herbicide Operations in Southeast Asia, July 1961-June 1967	22	7	Laos	12/1965- 1967	Orange
2	Miscellaneous Publication 33, Information Manual for Vegetation Control in Southeast Asia	9	13	Fort Drum, NY	1959	Orange
3	Record 1305-01, Report of Cambodian Rubber Damage	1	8	southeastern part of Kompong Cham Province and Dar and Prek Clong plantations, Cambodia	6/1969	Orange
4	Investigation of Spray Project near Globe, AZ	1	8	Pinal Mountains near Globe, AZ	1965, 1966, 1968, and 1969	2,4-D isooctyl-ester, 2,4,5-t isooctyl-ester, silvex, propyleneglycolbutylether ester, 2,4,5-T butyl ester, 2,4,5-T 2-e-h e

Project Description**DoD
Involvement**

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 eastern panhandle, to Cambodian border.

Yes

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

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

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 objectives of multiple land use.

No

ID	Report Title	Pg #	Box #	Location	Dates	Agents
1	Technical Report 114, Field Evaluation of Desiccants and Herbicide Mixtures as Rapid Defoliant	10	1	Apalachicola National Forest near Sophoppy, FL	5/3/1967-5/8/1967	basic desiccants and Orange/Blue
2	Technical Report 114, Field Evaluation of Desiccants and Herbicide Mixtures as Rapid Defoliant	10	1	Fort Gordon, GA	7/15/1967-7/17/1967	in-house desiccants mixtures and formulations, Orange and Blue
3	Technical Report 114, Field Evaluation of Desiccants and Herbicide Mixtures as Rapid Defoliant	10	1	Fort Chaffee, AK	5/16/1967-5/18/1967, 7/22/1967-7/23/1967, 8/23/1967 - 8/24/1967	basic, in-house, improved desiccants and Orange, Blue
4	Technical Report 114, Field Evaluation of Desiccants and Herbicide Mixtures as Rapid Defoliant	10	1	Base Gagetown near Fredericton, New Brunswick, Canada	6/20/1967-6/24/1967	basic desiccants and Orange, Blue, various
5	Technical Report 114, Field Evaluation of Desiccants and Herbicide Mixtures as Rapid Defoliant	12	1	Las Marias, Puerto Rico	2/1967-12/1967	various, including Orange
6	Technical Report 114, Field Evaluation of Desiccants and Herbicide Mixtures as Rapid Defoliant	13	1	Kauai Branch Station near Kapaa, Kawai, HI	6/1967, 10/1967, 2/1968, 12/1967	Blue, diquat, paraquat, Orange, PCP, Picloram, White, HCA, 2,4,5-T, Endothall
7	Report of Standing Subpanel E-2.5 on Plant Sciences	11	Drawer 1	Thailand	1964-1965	Purple, Orange, Others

8	Special Report No. 184, Anticrop Aerial Spray Trials, Phase III	1	17	Englin Air Force Base, FL	11/1952-12/1952	2,4-D, 2,4,5-T: 143 and 974, respectively
9	Special Report No. 79, Destruction by Chemical Agents also see Special Report No. 25, Vigo Plant CWS, Terre Haute, Indiana, and Beaumont TX, Box 12	4	17	Beaumont, TX	6/1944	LN *phenoxy
10	Special Report No. 79, Destruction by Chemical Agents	4	17	Bushnell Army Air Field, FL	2/1945	LN *phenoxy
11	Special Report No. 79, Destruction by Chemical Agents also see Special Report No. 25, Vigo Plant CWS, Terre Haute, Indiana, and Beaumont TX, Box 12	5	17	Vigo Plant CWS, Terre Haute, IN	5/1945-9/1945	LN (see attached) *phenoxy
12	Special Report No. 79, Destruction by Chemical Agents	5	17	Jefferson Proving Grounds, Madison, IN	Summer 1945	LN *phenoxy
13	Special Report No. 79, Destruction by Chemical Agents	5	17	Granite Peak, UT	Summer 1945	LN *phenoxy
14	Special Report No. 149, Low Volume Anticrop Aerial Spray Trials	1	17 and 12	Avon Air Force Base, FL	2/1951-4/1951	butyl 2,4 D

15 Special Report No. 201, Field Development of Chemical Anticrop Agents, Response of Field Grown Crops to Chemical Anticrop Agents Released from Experimental Spray tower	4	17	area B, Camp Detrick, MD	Spring/Summer 1953	3:1 mixture 2,4-D and 2,4,5-T
16 Crop Destruction by Aerial Sprays, Preliminary Trials also see Special Report No. 14, The Effect of VKA and VKS on Natural Vegetation, Box 12	5	17	Bushnell Army Air Field, Bushnell, FL	2/1945-4/1945	2,4-D and its ammonium salt
17 Memo for Record, Summary 1968 Vegetation Control Tests	2	Drawers 1	Korea, third Brigade, 2nd Division area	7/23/1968-7/24/1968	Hyvar XWS, tandex, Urox B, Urox Oil concentrate (liquids) bromacil, tandex, Urox 22 (solids)
18 Development of Arsenic Based Defoliant	3	8	Marinette, WI, Weslaco, TX	5/1967-1/1969	arsenic compounds, Orange, cacodylic acid, sodium cacodylate
19 Spread Factor Study of Drops of Orange and Stull Bifluid Defoliant on Kromekote Cards and Plant Leaves	ii	8	Eglin AFB, FL	6/11/1968-9/12/1968	orange, Bifluid #1, Bifluid#2, Stull Bifluid
20 Miscellaneous Publication 8, Proceedings of the Second Defoliation Conference 5-6 August 1964	155	11	Fort Ritchie, MD	1963	Tordon, 2,4-D, Orange, diquat, endotal, and combinations of each with Tordon
21 Miscellaneous Publication 8, Proceedings of the Second Defoliation Conference 5-6 August 1964	156	11	Fort Meade, MD	1963	cacodylic acid, Dowco 173, butyediol

22	Special Report No. 64, Destruction of Tropical Crops with Growth-inhibiting Agents	4	12	Kumbla, South India	1945-1946	LN compounds *phenoxy
23	Special Report No. 92, Field Plot Experiments with Plant Inhibitors 1946 and 1947 Seasons	1	12	Camp Detrick, MD-Fields A,B, and C	1946-1947	2,4,5-T, 2,4,5-T triethanolamine, tributylphosphate, ethyl 2,4-D, butyl 2,4,5-Triet 2,4-D,
24	Special Report No. 105, Field Plot Experiments with Plant Inhibitors 1948 Season	2	12	Camp Detrick, MD- Fields C,D, and E	1948	2,4,5-T, isopropyl phenol carbamate, LN-2426, 2,4-D
25	Special Report No. 130, Field Plot Experiments with Plant Inhibitors 1949 Season	2	12	Camp Detrick, MD-Fields C,D,E	1949	triethelyne. 2,4,5-T, carbamates
26	Special Report No. 130, Field Plot Experiments with Plant Inhibitors 1949 Season	28	12	Kingston, RI	7/26/1949, 1950-51	trieth.2,4,5-T, butyl 2,4,5-T,974
27	Special Report No. 153, Field Plot Experiments with Plant Inhibitors, 1950 Season	2	12	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
28	Special Report No. 156, Field Plot Experiments with Plant Inhibitors, 1950-51 Season	2	12	Camp Detrick, MD-Field F	1950-51	2464, carbamate, butyl 2,4-D, 143 and 974 (orange?),2,4,5-T, 2,4-D, Orange

29	Special Report No. 13, Marking and Defoliation of Forest Vegetation	1	12	Orlando, FL at Army Grove Air Force's Tactical Center	3/14/1944, 4/12/1944	ammonium thiocyanate, zinc chloride, sodium nitrate, sodium arsenate, sodium fluoride
30	Special Report No. 13, Marking and Defoliation of Forest Vegetation	8	12	Marathon, FL	3/21/1944-3/23/1944	zinc chloride, ammonium sulphamate, ammonium thiocyanate
31	Special Report No. 13, Marking and Defoliation of Forest Vegetation	9	12	near Lake George, FL	Spring 1944	zinc chloride
32	Formulation and Testing of Broad Spectrum of Herbicide Pellets, First Six Month's Report on Contract No. DAAA13-67-C-0218	14	8	near Wayside, Miss., Wilcox Road, Greenville, Miss.	9/19/1967	picloram, bromacil, pyriclor, and terbacil, Orange, cacodylic acid
33	Formulation and Testing of Broad Spectrum of Herbicide Pellets, Second Six Month's Report on Contract No. DAAA13-67-C-0218	15	8	Las Mesas Cerros, Mayaguez, PR	5/24/1968, 5/26/1968, 5/27/1968	picloram, bromacil, pyriclor
34	Formulation and Testing of Broad Spectrum of Herbicide Pellets, Second Six Month's Report on Contract No. DAAA13-67-C-0218	28	8	Fulcher Ranch, Greenville, Mississippi	4/15/1968	picloram and bromicil
35	Appendix D, Aerial Herbicide Applications Evaluated for Maximum Effect and Minimum Drift	6	8	Replacement raining Center of the Royal Thai Army near Pranburi, Thailand	1964 and 1965	Orange, Purple
36	First Quarterly Progress Report of Research carried out by the Federal Experiment Station in Puerto Rico for The Chemical Corps Biological Laboratories, Fort Detrick on contract #CD6-404-3654	1	8	Las Mesas and La Jagua experimental areas at Mayaguez, PR	2/1956-6/1956	2,4,5-T, 2,4-D, pentachloropheno l, ammate, weedazol, endothal Harvestaid, Butyne -1,4-diol

37	Second Quarterly Progress Report of Research carried out by the Federal Experiment Station in Puerto Rico for The Chemical Corps Biological Laboratories, Fort Detrick on contract #CD6-404-3654	1	8	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 Kiler, ACP M-118, Shed A-Leaf
38	Third Quarterly Progress Report of Research carried out by the Federal Experiment Station in Puerto Rico for The Chemical Corps Biological Laboratories, Fort Detrick on contract #CD6-404-3654	1	8	Las Mesas and La Jagua, Mayaguez, Joyuda at Cabo 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, F3, F4, F5, F6
39	Fourth Quarterly Progress Report of Research carried out by the Federal Experiment Station in Puerto Rico for The Chemical Corps Biological Laboratories, Fort Detrick on contract #CD6-404-3654	3	8	Las Mesas and La Jagua, Mayaguez, Guanica Beach, PR	1/1957-3/1957	V-C 3-105, V-C 1-21, V-C 1-443, F-7, TBP, Phillips 713, V-C 3-173
40	Quarterly Progress Report of Research carried out by the Federal Experiment Station in Puerto Rico for The Chemical Corps Biological Laboratories, Fort Detrick on contract #CD6-404-3654	2	8	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
41	Progress Report of Research carried out by the Federal Experiment Station in Puerto Rico for The Chemical Corps Biological Laboratories, Fort Detrick on contract #CD6-404-3654	2	8	Las Mesas and La Jagua, Mayaguez, PR	7/1957-12/1957	MgClO ₃ , Golden Harvest Defoliant, Dow-M562, F-8, F-9, F-10, F-11, F-12
42	Dow Sponsored Test of TORDON Ester and Orange in Hawaii	1	8	State Forest area, 3500 ft. elevation on slope of Mauna Loa, near Hilo, HI	12/2/1966, 12/4/1966, 1/12/1967	Orange, M-3140, TORDON ester, 2,4-D ester, 2,4,5-T ester

43	Soil Applied Herbicides in the Control of Temperate Zone Grasses, Broadleaf Weeds and Woody Plants	1	8	Stone Valley Experimental Forest in Huntington County and near State College in Centre County, PA	3/1969-10/1970	bromacil, diuron, tandex, fenuron, picloram
44	Technical Report BWL 16, Defoliation and Desiccation	9	1	Fort Detrick, MD; Fort Ritchie, MD	1956-1957	various, 577 compounds
45	Report of Standing Subpanel E-2.5 on Plant Sciences	10	4	GA and TN	1964	diquat and Tordon 101, various
46	Report of Standing Subpanel E-2.5 on Plant Sciences	11	4	2 areas in FL, 2 areas in GA, and 1 in TN	1968	bromacil, Tandex, monuron, diuron, and fenuron
47	Development of Army Defoliation Systems, TIR 21-2-1A1	1	4	Orlando, FL, Cocoa, FL	1944	ammonium thiocyanate and zinc chloride
48	Development of Army Defoliation Systems, TIR 21-2-1A1	2	4	Fort Knox, KY	1945	various
49	Special Report No. 225, Chemical Anticrop Aerial Spray Trials Using Jet Aircraft also in Special Report 232, Some Effects of Altitude and Airspeed on the Behavior of Chemical Anticrop Sprays, Box 18	ii	7	Avon Park Air Force Base, FL	Spring 1954	butyl 2,4-D, butyl 2,4,5-T, Isopropyl 2,4-D

50	Special Report No. 200, Field Development of Chemical Anticrop Agents	3	7	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
51	Formulation and Testing of Broad Spectrum of Herbicide Pellets, First Six Month's Report on Contract No. DAAA13-67-C-0218	9	8	near Rio Grande, on the northeast coast of Puerto Rico	8/23/1967, 10/18/1967, 12/21/1967-12/26/1967	picloram, bromacil, pyriclor, and terbacil
52	Summary Report, Herbicide Operations Conducted from Riverine Watercraft	3-1	13	Poole's Island, Aberdeen Proving Ground, MD	7/14/1969-	Orange, Orange plus foam, Orange plus foam Orange, Foam
53	Miscellaneous Publication 33, Information Manual for Vegetation Control in Southeast Asia	40	13	Loquillo, PR	4/1966, 10/1966	Orange
54	Miscellaneous Publication 33, Information Manual for Vegetation Control in Southeast Asia	40	13	Hilo, HI	12/1966	Orange
55	Miscellaneous Publication 33, Information Manual for Vegetation Control in Southeast Asia	40	13	Kauai, HI	1967	Orange
56	Miscellaneous Publication 33, Information Manual for Vegetation Control in Southeast Asia	40	13	Thailand	1964-65	Orange, Blue

57 Spray Test Calibration of the HIDAL (HUS-1 or H-34)	1	15	Jacksonville,FL	7/18/1962-7/21/1962	Purple, Fuel Oil, Mix
58 Abstracts of Technical Publications April 1965-June 1965, July 1965, Technical Report 50, Defoliation Studies: Screening of Defoliant, Herbicides, and Desiccants	10	22	Fort Detrick, MD	8/1961-6/1963	1410 compounds
59 Memo for Record, Summary 1968 Vegetation Control Tests	2	Drawe r 1	Korea,2nd and 4th Brigades, 2nd Division area	8/1968	Hyvar XWS, tandex, Urox B, Urox Oil concentrate (liquids) bromacil, tandex, Urox 22 (solids)
60 Memo for Record, Summary 1968 Vegetation Control Tests	2	Drawe r 1	Korea, third Brigade, 2nd Division area	10/3/1968	Hyvar XWS, tandex, Urox B, Urox Oil concentrate (liquids) bromacil, tandex, Urox 22 (solids)
61 Technical report 40, Stem Rust in Analog Areas, 1960	3	Drawe r 3	Hays, KS, Langdon, ND	1960	stem rust of wheat
62 Minutes-Meeting of Vegetation Control Subcommittee of the JTCG/CB, 2-3 March 1971	7	Drawe r 4	Eglin AFB, FL, C-52A test area	1962-70	Orange (1962-68), Purple (1962-68), White (1967-70), Blue (1968-70)
63 Special Report No. 13, Marking and Defoliation of Forest Vegetation	v	12	Beaumont, TX	1950-51	2,4-D
64 Special Report No. 13, Marking and Defoliation of Forest Vegetation	v	12	Prosser,WA	1950-51	2,4-D

65 Special Report No. 13, Marking and
Defoliation of Forest Vegetation

v

12

Brawley, CA

1950-51

2,4-D

Project Description**DoD
Involvement**

During the period of 12/1966 - 10/1967, a comprehensive short-term evaluation was conducted by personnel from Fort Detrick's Plant Science Lab in coordination with contract research on formulations by chemical industry and field tests by USDA and U of HI sites.

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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.

Two trials: Chemical Corps- concerned with basic fundamental work, using 2,4-D, Air Force-concerned with evaluating prototype large capacity spray system for aircraft installation using 2,4,5-T, primarily. Used 3 atomizing nozzles: Bete Fog Nozzles, Whirljet Spray Nozzles, and Fogjet 1.5F50

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, they were testing on rice crops.

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

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.

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.

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.

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 of spraying pure anticrop agents from at low volume from aircraft. C-47 and Navy XBT2D-1 aircraft with various nozzles were used.

Personnel at Camp Detrick tested the feasibility of using an experimental spray tower for applying a mixture of chemical anticrop agents to broad-leaf crops. Yes

Trials, performed by C.W.S. personnel from Camp Detrick, MD tested the practicability of severely injuring or destroying crop plants sprayed from smoke tanks mounted on tactical aircraft. Yes

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

71 new arsenic compounds were tested in primary screening against 6 plant species in greenhouse tests. Then, 5 of the most active compounds were tested in field trials against Red Maple and compared to formulations of cacodylic acid and a 50:50 blend of orange and sodium cacodylate. The Ansul Co. for DoD. Yes

A spread factor study was performed by the Army to correlate the spherical drop sizes of both Orange and Stull Bifluid defoliant. It involved development of new techniques to determine spread factors over an extended range of drop sizes. A spinning cup drop generator was used. Yes

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

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

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 agents at different rates in different forms.

Yes

The experiments were directed mainly towards the investigation of plant inhibitors applied as sprays or to the soil in the solid form to be taken up by the roots.

Yes

The experiments were directed mainly towards the investigation of plant inhibitors applied as sprays or to the soil in the solid form to be taken up by the roots.

Yes

The experiments were directed mainly towards the investigation of plant inhibitors applied as sprays or to the soil in the solid form to be taken up by the roots. Experiments were done by Ennis, DeRose, Newman, Williamson, DeRigo, and Thomas.

Yes

The experiments were directed mainly towards the investigation of plant inhibitors applied as sprays or to the soil in the solid form to be taken up by the roots. Experiments were carried out under supervision of T.E. Odland if RI State College. H.T. DeRigo was also there.

Yes

The experiments were directed mainly towards the investigation of plant inhibitors applied as sprays or to the soil in the solid form to be taken up by the roots. Experiments were done by Ennis, DeRose, Acker, Newman, Williamson, and Zimmerly.

Yes

The experiments were directed mainly towards the investigation of plant inhibitors applied as sprays or to the soil in the solid form to be taken up by the roots. Experiments were done by Acker, DeRose, McLane, Newman, Williamson, Baker, Dean, Johnson, Taylor, Walker, and Zimmerly.

Yes

The purpose was to determine means of accomplishing defoliation of tropical forest vegetation by application of a chemical agent. Yes

The purpose was to determine means of accomplishing defoliation of tropical forest vegetation by application of a chemical agent. Spraying was done here. Yes

The purpose was to determine means of accomplishing defoliation of tropical forest vegetation by application of a chemical agent. Spraying here. In 1967, the Dow Chemical Company was awarded a DoD research contract. The objective was to prepare as pellets mixtures of various herbicides and to test them on varying vegetation situations for the control of a range of plant species. Und

In 1967, the Dow Chemical Company was awarded a DoD research contract. The objective was to prepare as pellets mixtures of various herbicides and to test them on varying vegetation situations for the control of a range of plant species. Und

In 1967, the Dow Chemical Company was awarded a DoD research contract. The objective was to prepare as pellets mixtures of various herbicides and to test them on varying vegetation situations for the control of a range of plant species. Und

An extensive series of 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 SE Asia. Yes

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 microsprayer to the leaves. Yes

9 chemicals were evaluated on 16 genera of tropical woody between June and September. The chemicals were sprayed to duplicate small branches, using a microsprayer. Yes

16 compounds with defoliating properties were evaluated using 28 different tropical woody plants, each representing a separate genus. The chemicals were applied to duplicate small branches with a microsprayer and to single larger branches or whole trees with a 2-gallon knapsack sprayer. Yes

7 compounds were evaluated on 29 different woody plants to determine their effectiveness as defoliants, desiccants, and as killing agents. They were applied with a microsprayer to the upper leaf surfaces of duplicate small branches. Yes

7 compounds were sprayed on 25 different plants in order to evaluate their effectiveness as defoliants, desiccants, and killing agents. The compounds were applied with a microsprayer to the upper and lower leaf surfaces of duplicate small branches. Yes

8 different spray formulations were applied to 16 different tropical trees and shrubs in order to evaluate their effectiveness as defoliants, desiccants, and killing agents. Yes

The purpose of this project was to evaluate iso-octyl ester of picloram (TORDON) in mixtures with ORANGE, as a candidate defoliant agent, using ORANGE as standard. There were personnel from Fort Detrick there. Und

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 or sprayed. Und

In 1956 And 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

In 1964, helicopter spray tests were conducted on transmission line rights-of-way by the Georgia Power Company and Tennessee Valley Authority in collaboration with Fort Detrick to evaluate effectiveness of several commercially available herbicides. Yes

In 1968, emphasis was given to soil applied herbicides for grass control. Applications were made by a jeep-mounted sprayer on small plots or by helicopter on larger plots. Und

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

In 1945, a special project known as Sphinx was conducted jointly by CWS and the ARML to investigate the use of chemical agents for increasing the flammability of vegetation prior to flame attack. Yes

Series of tests were conducted at Avon Park AFB during the spring of 1954 to study the behavior of chemical anticrop aerial sprays when released from high-speed jet aircraft. The Navy F3D jet fighter was used with Aero 14A Airborne Spray Tanks to disperse the anticrop agents. Yes

A preliminary series of field evaluations of No chemical agents for attacking wheat using a miniature spraying system mounted on light aircraft were performed by USDA.

In 1967, the Dow Chemical Company Und was awarded a DoD research contract. The objective was to prepare as pellets mixtures of various herbicides and to test them on varying vegetation situations for the control of a range of plant species.

During the week of 7/14/1969, personnel Yes from Naval Applied Science Laboratory in conjunction with personnel from Limited War Laboratory conducted a defoliation test along the shoreline.

Field tests of defoliant were designed to Yes 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.

Field tests of defoliant were designed to Yes 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 there.

Field tests of defoliant were designed to Yes 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.

Field tests of defoliant were designed to Yes 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.

The HIDAL was used successfully on an H-34 helicopter to spray herbicidal materials. Therefore, it had not been calibrated previously. Spray tests were performed to do so. This was done under order by OSD/ARPA.

Yes

From 8/1961 to 6/1963, compounds were spray-tested in the greenhouse to evaluate them as effective defoliant, desiccants, and herbicides.

Yes

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

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

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 epiphytotic.

Und

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

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.

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. V.F. Burns worked here.

Und.

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accomplishing defoliation of tropical
forest vegetation by application of a
chemical agent. Here, irrigation water
studies were done with the agent. H.F.
Arle worked here