

## 2019 DoD List of Locations Where Tactical Herbicides and Their Chemical Components Were Tested, Used or Stored Outside of Vietnam

State/Country	Location	Application Dates or Ranges of Dates	Site	Tactical Herbicide or Component	Purpose	Personnel involved in application
Arkansas	Fort Chaffee	May 16-18; July 22-23; August 23-25, 1967	The Archives Search Report identified defoliant spray areas (DSA) or brush spray areas (BSA) in FTCH-041 as part of the Environmental Baseline Survey completed in 1996.	Herbicide Orange, Herbicide Blue, Herbicide White	Response of woody vegetation to mixtures of herbicides and/or desiccants was evaluated by the Plant Physiology Division, Plant Science Laboratories of Fort Detrick. Applications made with a Bell G-2 helicopter or a cherrypicker (elevating work platform ) to simulate aerial spray applications.	Spray equipment, pilot, and support were furnished under contract with Allied Helicopter Services of Tulsa, Oklahoma. Fort Chaffee Forestry personnel conducted site selections to identify locations with required vegetation prior to herbicide application.
Florida	Avon Park	February-March 1951 (Phase I)	Avon Park Bombing Range	n-butyl 2,4-D/LNA/LN143	Conducted tests to determine if low-volume highly concentrated anticrop agents could be sprayed from aircraft both effectively and practically.	Tactical Air Command, Langley AFB, furnished C-47 aircraft and Navy provided XBT 2D-1 with Navy Aero X 2A.
Florida	Avon Park	Fall 1951 (Phase II)	Avon Park Bombing Range	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Conducted low-volume anticrop aerial spray trials (49 missions) with USAF B-17, USAF B-26, USN AD Skyraider, and USN F4U Corsair.	3210th Chemical and Ordnance Test Group/3210th Chemical Test Squadron, Army Chemical Center, APG MD furnished the B-17 and B-26 aircraft and experienced test pilots and crew. Malaria and Mosquito Control Unit #1, Jacksonville, NAS furnished the Navy AD Skyraider and F4U Corsair, Navy dispersal equipment and personnel who participated in the Navy phases of the trails.
Florida	Avon Park	March 30 - April 16, 1954	Not Specified on Avon Park	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Study the behavior of chemical anticrop aerial sprays when released from high-speed jet aircraft.	Bureau of Aeronautics, US Navy made available a Navy F3D aircraft with pilot and provided facilities at the Naval Auxiliary Air Station, Sanford, Florida. A building for a laboratory and extensive bombing range for tests was made available at Avon Park.
Florida	Avon Park	March and April 1955	Chemicals were applied with a 250-ml hand sprayer with a flat-spray Tee jet nozzle, usually to a 16 square foot area of the plant. In the case of small shrubs several plants were included in the application.	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Evaluate under field conditions those chemical which showed potential in the preliminary tests.	Camp Detrick, Crops Divison Personnel
Florida	Avon Park	April 15, 1967	Native grass-sedge vegetation near Avon Park	Herbicide Blue (Phytar 560G)	Evaluate 24 soil-applied herbicides over a 3-year period for duration and degree of total vegetation control.	Camp Detrick, Crops Divison Personnel
Florida	Eglin AFB	November - December 1952 (Phase III)	Field #2 and Bombing Ranges 52 and 57 *	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Two series of chemical anticrop aerial spray trails. Army Chemical Corps conducting basic research on dispersion using butyl 2,4-D; Air Force evaluation of capacity spraying system for B29 aircraft used butyl 2,4-D and butyl 2,4,5-T.	B-17 aircraft and crew were furnishd by 6570th Chemical and Ordnance Test Group, Aberdeen Proving Grounds, MD from the 6570th Chemical Test Squadron, Army chemical Center, MD.. B-29 aircraft and crew were detached from the 303rd Bomb wing (M), Davis-Monthan AFB,AZ

\*To include herbicide loading sites, e.g. hardstands or taxiway ends used for loading purposes.

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Florida	Eglin AFB	March - April 1953	Not Specified. *	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Evaluation of production model of the Large Capacity Bomb Bay Spray Tank Assembly in B-29 and C-119 aircraft. Initial testings included installation of system in aircraft; filling test using agent; dump test using water; insulation test with agent to determine if fiberglass blankets around the tank and valves kept the agents from becoming viscous; performance tests using agent.	Special Weapons Branch, Armament Laboratories, Director of Laboratories, Wright Air Development Center, Wright-Patterson AFB and Biological Research Laboratories, Camp Detrick, MD
Florida	Eglin AFB	June 1962	Field 2, unused portion of the runway away from vegetation *	Herbicide Purple	Flow rate calibration of C123. Aircraft was stationary with trough and screens used to collect spray into 55 gallon drums to be reused.	
Florida	Eglin AFB	June 24, 27; July 1, 4, 6, 14, 15, 16, 17. 1962	Range 52 South*	Herbicide Purple	Swath width and particle size determination. C-123 aircraft with spray equipment was flown either cross wind or in wind to card line.	
Florida	Eglin AFB	July 18-21, 1962	Range 52 South*	Herbicide Purple	Swath width and particle size determination. HUS-1 helicopter with the HIDAL spray equipment was flown either cross wind or in wind to card line.	
Florida	Eglin AFB	May -July 1963	Range 52 South*	Herbicide Purple	Determine the effective swath widths for each system under specified conditions.	
Florida	Eglin AFB	October 2-23, 1963 (Specific date not specified but it occurred prior to spray flights)	Eglin Test Range C-52A south *	Herbicide Purple	Phase 1 (C-130) Flow rate calibrations to determine the accuracy of the flowmeter. Five tests were run on ground using a 32-foot canvas trough to collect spray and funnel it into a 500-gallon catch tank prior to determination of the ground characteristics.	Pilots and flight mechanics 4500th Aerial Spray Flight. List of personnel responsible for testing in the forward
Florida	Eglin AFB	October 24- December 29, 1963. All flights were conducted from approximately 0430 to 0730 CST.	CB grid was located on Eglin Test Range C-52A south.*	Herbicide Purple	Phase 1 (C-130) to determine the ground characteristics of the A/A 45Y-1 dispenser. Multiple passes were done on each day at varying altitudes and flow rate. All passes were into the wind. A total of 52 passes were done during this time period.	Pilots and flight mechanics 4500th Aerial Spray Flight.
Florida	Eglin AFB	May 19, 1964	C52A*	Herbicide Orange	Ground calibrations were conducted to determine the correct nozzle setting to attain the required flow rates. A 32-foot canvas trough was used to collect and funnel the spray into a catch so it could be measured and the flow rate determined.	Pilots and flight mechanics 4500th Aerial Spray Flight.
Florida	Eglin AFB	May 21 - June 13, 1964	Southwest corner of the square mile CB Grid *	Herbicide Orange	Fifty-three spray flights were made across the CB Defoliant Grid located on Test Area C-52 South. All flights were made from approximately 0430 to 0730, in order to obtain required weather conditions.	Pilots and flight mechanics 4500th Aerial Spray Flight.

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Florida	Eglin AFB	June 26 - July 9, 1964	Southwest quarter of the CB grid at Eglin Test Range C-52A.*	Herbicide Orange	C-123 ground flow rate calibrations on the A/A 45Y-1 dispenser to determine the accuracy of the flowmeter. Thirteen tests were run on ground using a 32-foot canvas trough to collect spray and funnel it into a 500-gallon catch tank prior to determination of the ground characteristics.	Pilots and flight mechanics 4500th Aerial Spray Flight.
Florida	Eglin AFB	July 10-22, 1964	Southwest quarter of the CB grid at Eglin Test Range C-52A.*	Herbicide Orange	Phase 2 (C-123): C-123 flights to determine the ground characteristics of the A/A 45Y-1 dispenser. Multiple passes were done on each day at varying altitudes and flow rates into the wind over the CB Grid. A total of forty-nine passes were conducted.	Pilots and flight mechanics 4500th Aerial Spray Flight.
Florida	Eglin AFB	July 7- November 6, 1965	CB grid at Eglin Test Range C-52A*	Herbicide Orange	Developmental test and evaluation of the COIN defoliant dispenser, A/B 23Y-1, installed on an A-1E aircraft. Thirty-seven flights were conducted. Spray flights were conducted between either 5:30 to 7:30 am or 3-6 pm to obtain required weather conditions over the CB Grid.	Air Proving Ground Center, Eglin AFB
Florida	Eglin AFB	April 14-22, 1966	CB grid at Eglin Test Range C-52A *	Herbicide Orange	Feasibility test of the Stull Bifluid Defoliant System to determine its capability to control droplet size and drift of defoliant. A Cessna 206 Super Skywagon with specially fabricated spray equipment was flown over the southwest corner of the CB Grid on Test Range 52A.	Air Proving Ground Center and Air Force Armament Laboratory Eglin AFB; Stull Chemical Company, Operations and Maintenance Contractor
Florida	Eglin AFB	June 20 - November 8, 1968	CB grid at Eglin Test Range C-52A *	Herbicide Orange	A comparison of the Stull Bifluid defoliant system with the C-123 with A/A45Y-a internal defoliant dispenser. Testing was conducted on the sampler grid located in the southwest corner of the CB grid at Test Range C-52A.	Aircraft, crew, maintenance, and weather support were supplied by the 4408th Combat Crew Training Wing, 319th Air Commando Squadron, England AFB, Louisiana and Detachment 10, 6th Weather Wing.
Florida	Eglin AFB	December 20, 1968; January 10, 13, 14, 21; February 4; March 11, 20, 25 and April 1, 7, 24 1969.	CB grid at Eglin Test Range C-52A *	Herbicide Orange	Determine the ground depositions and swath widths for defoliant using the US-123K/A/A45Y-1 system with 22 foot wing booms. All spray flights were conducted at sunset or later to take advantage of the more favorable weather conditions.	Armament Development and Test Center, Eglin AFB
Florida	Eglin AFB	April 30, May 1, 13, 19, 20, 21, 22, 23; June 3, 5, 9, 10 1969	CB grid at Eglin Test Range C-52A as described in Air Proving Ground Center Technical Facilities Vol II Land Test Area 196804 *	Herbicide White	Determine the ground depositions and swath widths for defoliant using the US-123K/A/A45Y-1 system with 22 foot wing booms. All spray flights were conducted at sunset or later to take advantage of the more favorable weather conditions.	Armament Development and Test Center, Eglin AFB

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Florida	Eglin AFB	July 1, 7, 24, 28, 30, 31; August 7, 11, 21, 1969	CB grid at Eglin Test Range C-52A *	Blue	Determine the ground depositions and swath widths for defoliant using the US-123K/A/A45Y-1 system with 22 foot wing booms. All spray flights were conducted at sunset or later to take advantage of the more favorable weather conditions.	Armament Development and Test Center, Eglin AFB
Florida	Eglin AFB	November 4, 12, 17, 25; December 1, 2, 3, 4, 5 1969	CB grid at Eglin Test Range C-52A *	Orange	Evaluation of the TMU-28/B spray tank as an interim capability for dispensing defoliant by high-speed aircraft. Nine missions were conducted.	Armament Development and Test Center, Eglin AFB
Georgia	Fort Gordon	July 15-17, 1967	Not specified in TR114; Defoliant Testing Areas defined in SWMU 037 [Solid Waste Management Unit 37] located in Training Area 47.	Herbicide Orange, Herbicide Blue, Herbicide White	Evaluate rapid-acting desiccants, and defoliant and to assess the defoliation response of woody vegetation to mixtures of herbicides and/or desiccants. Applications made with Bell G-2 helicopter.	Spray equipment pilot and support were furnished under contract with Allied Helicopter Services of Tulsa, Oklahoma. Civilian and military personnel from Plant Physiology Division, Plant. Fort Gordon Forestry personnel conducted site selections to identify locations with required vegetation prior to pesticide application.
Georgia	Fort Gordon	Dates not specified in 1968 but prior to July 1, 1968	Not specified but testing was done on brush and small trees. Defoliant and desiccants were applied with a high-line bucket lift (cherry picker) with a 15 foot boom sprayer used for liquid application.	Picloram	Evaluation of application of liquid or solid herbicides to leaves and soil by ground and aerial application.	Army Crops Division Plant Sciences Laboratory, Contract Personnel, (Fort Gordon Forestry personnel conducted site selections to identify locations with required vegetation prior to pesticide application)
Indiana	Vigo Plant CWS, Terra Haute	May 18- August 22, 1945	4 experimental grids and 6 field grids	n-butyl 2,4- D (LNA/LN143)	Determine the effectiveness of chemicals defoliant when dispersed from tactical aircraft.	
Maryland	Aberdeen Proving Ground	May 1963	M Field, Watsons Creek, Edgewood. Two locations specified as: marsh area with water and marsh/wooded area with no standing water.	Herbicide Purple	Phase II: To determine the effectiveness of the E156 clusters when dropped by helicopter from 2500 feet at 90 MPH.	Not specified.
Maryland	Aberdeen Proving Ground	May 1963	M Field, Watsons Creek, Edgewood. Two locations specified as: marsh area with water and marsh/wooded area with no standing water.	Herbicide Purple	Phase III: To determine the effectiveness of a single E138 bomblet when dropped by helicopter from 2500 feet at 90 MPH.	Not specified.
Maryland	Aberdeen Proving Ground	May 1963	M Field, Watsons Creek, Edgewood. Five squares horizontal grids, 96 feet on a side, were constructed in cattails four to six feet high.	Herbicide Purple	Phase IV: bomblets were statically fired in an effort to obtain information of applied dosages over selected targets.	Fort Detrick Technical Evaluation Division

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Maryland	Aberdeen Proving Ground	May - July 1965	Location not specified. 244 plots of unspecified size with predominant tree species including sweetgum, black willow, persimmon, black gum, white oak, black oak, pin oak, and sumac.	Herbicide Purple, Herbicide Orange, Cacodylic Acid	Simulated aerial applications to forest vegetation. Used truck mounted sprayer designed to closely simulate a helicopter application.	Fort Detrick
Maryland	Aberdeen Proving Ground	August- September 1965	Location not specified. 75 plots of unspecified size with predominant tree species including sweetgum, black willow, persimmon, black gum, white oak, black oak, pin oak, and sumac.	Herbicide Purple, Herbicide Orange, Cacodylic Acid	Simulated aerial applications to forest vegetation to test seasonal variations of 5 different compounds applied at 3 rates. Used truck-mounted sprayer designed to closely simulate a helicopter application.	Fort Detrick
Maryland	Aberdeen Proving Ground	Mary 27 and 28, 1969	Three test sites in an open grassy area adjacent to the Phillips Army Airfield, APG	Cacodylic Acid	Evaluate several formulations containing bromacil, Tandex, and diuron for control of native temperate-zone grasses and associated broadleaf plants.	Fort Detrick
Maryland	Aberdeen Proving Ground	July 14-19, 1969	Poole's Island	Herbicide Orange	Evaluate the effectiveness of conducting herbicide operations against tropical vegetation from riverine watercraft.	Personnel from Naval Applied Science Laboratory with personnel from Limited War Laboratory conducted defoliation tests along shoreline.
Maryland	Camp Detrick	June 4, 1946	Field A - Irish potatoes	n-butyl 2,4,5-T (LNB/LN974/ Herbicide Green)	Study the influence of droplet size.	C Division, Camp Detrick, MD
Maryland	Camp Detrick	August 2, 1946	Field C - soybeans	n-butyl 2,4,5-T (LNB/LN974/ Herbicide Green)	Studies carried out to test the comparative inhibitory effectiveness of several promising plant inhibitors upon field-grown crops when applied in low-volume aqueous or oil sprays on soybeans.	C Division, Camp Detrick, MD
Maryland	Camp Detrick	June 13, 1947	Field C - Irish potatoes	n-butyl 2,4,5-T (LNB/LN974/ Herbicide Green)	Studies carried out to test the comparative inhibitory effectiveness of several promising plant inhibitors upon field-grown crops when applied in low-volume aqueous or oil sprays on Irish potatoes.	C Division, Camp Detrick, MD
Maryland	Camp Detrick	July 10, 1947	Field C - soybeans	n-butyl 2,4,5-T (LNB/LN974/ Herbicide Green)	Studies carried out to test the comparative inhibitory effectiveness of several promising plant inhibitors upon field-grown crops when applied in low-volume aqueous or oil sprays on soybeans.	C Division, Camp Detrick, MD
Maryland	Camp Detrick	July 18, 1947	Field C - soybeans	n-butyl 2,4,5-T (LNB/LN974/ Herbicide Green)	Studies carried out to test the comparative inhibitory effectiveness of several promising plant inhibitors upon field-grown crops when applied in low-volume aqueous or oil sprays on soybeans.	C Division, Camp Detrick, MD

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Maryland	Camp Detrick	July 23 and August 25, 1947	Field C - sweet potatoes	n-butyl 2,4,5-T (LNB/LN974/ Herbicide Green)	Studies carried out to further test the inhibitory effectiveness of several plant growth regulators on sweet potatoes	C Division, Camp Detrick, MD
Maryland	Camp Detrick	July 16, 1948	Field D - soybeans	n-butyl 2,4-D (LNA/LN143)	Test relative inhibitory effectiveness of aqueous and oil sprays of commercial formulations.	Biological Department, Chemical Corps C Division Camp Detrick MD
Maryland	Camp Detrick	June 9, 1948	Field D - Irish potatoes	n-butyl 2,4,5-T (LNB/LN974/ Herbicide Green)	Compare inhibitory effectiveness of LN-974 and LN-2777 when applied to Irish potatoes in oil and oil emulsion.	Biological Department, Chemical Corps C Division Camp Detrick MD
Maryland	Camp Detrick	June 28, July 15, July 28, 1948	Field D - soybeans	n-butyl 2,4,5-T (LNB/LN974/ Herbicide Green)	Comparing the three listed herbicides against each other on soybeans at three stages of development.	Biological Department, Chemical Corps C Division Camp Detrick MD
Maryland	Camp Detrick	July 29, 1949	Field C - soybeans	n-butyl 2,4,5-T (LNB/LN974/ Herbicide Green)	Determine if the yield of soybeans could be markedly reduced by varying volume and concentrations. Applications in both water and oil carriers.	
Maryland	Camp Detrick	May 18 and June 8, 1949	Field C - onion	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Screening of onion plants for possible different responses to two compounds.	
Maryland	Camp Detrick	June 2 and 9, 1949	Field C - flax	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Screening of flax plants for possible different responses to two compounds.	
Maryland	Camp Detrick	August 4, 1949	Field C - peanuts	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Screening of peanuts plants for possible different responses to two compounds.	
Maryland	Camp Detrick	June 6 and July 5, 1949	Field C - kale	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Screening of kale plants for possible different responses to two compounds.	
Maryland	Camp Detrick	June 6 and July 5, 1949	Field C - rutabaga	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Screening of rutabaga plants for possible different responses to two compounds.	
Maryland	Camp Detrick	June 7 and July 6, 1949	Field C - rutabaga	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Screening of rutabaga plants for possible different responses to two compounds.	
Maryland	Camp Detrick	June 20 and July 21, 1949	Field C - mangel	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Screening of mangel plants for possible different responses to two compounds.	
Maryland	Camp Detrick	June 21 and July 20, 1949	Field C - sugar beet	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Screening of sugar beet plants for possible different responses to two compounds.	
Maryland	Camp Detrick	June 21 and July 1, 1949	Field C - garden beet	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Screening of garden beet plants for possible different responses to two compounds.	
Maryland	Camp Detrick	June 20 and July 6, 1949	Field C - cabbage	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Screening of cabbage plants for possible different responses to two compounds.	
Maryland	Camp Detrick	July 21 and August 9, 1949	Field C - eggplant	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Screening of eggplant plants for possible different responses to two compounds.	
Maryland	Camp Detrick	July 22, 1949	Field C - rape	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Screening of rape plants for possible different responses to two compounds.	

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Maryland	Camp Detrick	July 22, 1949	Field C - tobacco	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Screening of tobacco plants for possible different responses to two compounds.	
Maryland	Camp Detrick	July 26, 1949	Field C - soybean	n-butyl 2,4,5-T (LNB/LN974/ Herbicide Green)	Study the influence of droplet size upon growth inhibiting soybeans.	
Maryland	Camp Detrick	July 27, 1949	Field C - soybean	n-butyl 2,4,5-T (LNB/LN974/ Herbicide Green)	Study the influence of droplet size upon growth inhibiting for soybeans.	
Maryland	Camp Detrick	May 22 and June 2, 1950	Field A - wheat	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Limits of growth periods of wheat and barley within which the yield of grain may be markedly reduced by spray applications of plant inhibitors. To prevent drift during applications a movable chamber was placed around plots during applications.	
Maryland	Camp Detrick	June 16, 1950	Field D - flax	n-butyl 2,4,5-T (LNB/LN974/ Herbicide Green)	Limits of growth periods of flax within which the yield of grain maybe markedly reduced by spray applications of plant inhibitors. To prevent drift during applications, a movable chamber was placed around plots during applications.	
Maryland	Camp Detrick	June 2,1950	Field D - Irish potatoes	n-butyl 2,4,5-T (LNB/LN974/ Herbicide Green)	Limits of growth periods of Irish potatoes within which the yield of grain maybe markedly reduced by spray applications of plant inhibitors. To prevent drift during applications, a movable chamber was placed around plots during applications.	
Maryland	Camp Detrick	June 27, 1950	Field D - sugar beet	n-butyl 2,4-D (LNA/LN143)	Limits of growth periods of sugar beets within which the yield of grain may be markedly reduced by spray applications of plant inhibitors. To prevent drift during applications, a movable chamber was placed around plots during applications.	
Maryland	Camp Detrick	July 14 and Aug 3, 1950	Field D soybeans	n-butyl 2,4,5-T (LNB/LN974/ Herbicide Green)	Limits of growth periods of soybean within which the yield of grain maybe markedly reduced by spray applications of plant inhibitors. To prevent drift during applications, a movable chamber was placed around plots during applications.	
Maryland	Camp Detrick	June 5, 1950	Field D - Irish potatoes	n-butyl 2,4,5-T (LNB/LN974/ Herbicide Green)	Limits of growth periods of Irish potatoes within which the yield of grain may be markedly reduced by spray applications of plant inhibitors. To prevent drift during applications, a movable chamber was placed around plots during applications.	
Maryland	Camp Detrick	June 21, 1950	Field D 4 - flax	n-butyl 2,4,5-T (LNB/LN974/ Herbicide Green)	Limits of growth periods of flax within which the yield of grain maybe markedly reduced by spray applications of plant inhibitors. To prevent drift during applications, a movable chamber was placed around plots during applications.	

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Maryland	Camp Detrick	June 29 and 30, 1950	Field D - sugar beet	n-butyl 2,4-D (LNA/LN143)	Limits of growth periods of sugar beets within which the yield of grain may be markedly reduced by spray applications of plant inhibitors. To prevent drift during applications, a movable chamber was placed around plots during applications.	
Maryland	Camp Detrick	July 20 and 21, 1950	Field D - soybean	n-butyl 2,4,5-T (LNB/LN974/ Herbicide Green)	Limits of growth periods of soybeans within which the yield of grain may be markedly reduced by spray applications of plant inhibitors. To prevent drift during applications, a movable chamber was placed around plots during applications.	
Maryland	Camp Detrick	June 6 and 20, 1950	Field D 4 - fiber flax	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Limits of growth periods of fiber flax within which the yield of grain may be markedly reduced by spray applications of plant inhibitors. To prevent drift during applications, a movable chamber was placed around plots during applications.	
Maryland	Camp Detrick	June 6 and 20, 1950	Field D - oil flax	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Limits of growth periods of oil flax within which the yield of grain may be markedly reduced by spray applications of plant inhibitors. To prevent drift during applications, a movable chamber was placed around plots during applications.	
Maryland	Camp Detrick	July 12 and August 2, 1950	Field D - sunflower	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Limits of growth periods of sunflower within which the yield of grain may be markedly reduced by spray applications of plant inhibitors. To prevent drift during applications, a movable chamber was placed around plots during applications.	
Maryland	Camp Detrick	July 26 and August 7, 1950	Field D - sweet corn	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Limits of growth periods of sweetcorn within which the yield of grain may be markedly reduced by spray applications of plant inhibitors. To prevent drift during applications, a movable chamber was placed around plots during applications.	
Maryland	Camp Detrick	August 4, 14, and 30, 1950	Field D - sorghum	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Limits of growth periods of sorghum within which the yield of grain may be markedly reduced by spray applications of plant inhibitors. To prevent drift during applications, a movable chamber was placed around plots during applications.	
Maryland	Camp Detrick	June 5, 1950	Field D - Irish potatoes	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Limits of growth periods of Irish potatoes within which the yield of grain may be markedly reduced by spray applications of plant inhibitors. To prevent drift during applications, a movable chamber was placed around plots during applications.	

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Maryland	Camp Detrick	July 31, 1950	Field F - soybean	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Limits of growth periods of soybean within which the yield of grain may be markedly reduced by spray applications of plant inhibitors. To prevent drift during applications, a movable chamber was placed around plots during applications.	
Maryland	Camp Detrick	July 25, 1951	Field F - soybean	n-butyl 2,4-D (LNA/LN143)	Determine the effectiveness of high concentration (90%) of butyl 2,4,5-T when applied to soybeans.	
Maryland	Camp Detrick	July 11, 1951	Field F - lima beans	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Determine the minimum volume of 96% formulations of LN 974 or 100% of LN 143 required to significantly reduce yield of lima beans.	
Maryland	Camp Detrick	July 2, 1951	Field F - string beans	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Determine the minimum volume of 96% formulations of LN 974 or 100% of LN 143 required to significantly reduce yield of string beans.	
Maryland	Camp Detrick	July 13, 1951	Field F - kale	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Determine the minimum volume of 96% formulations of LN 974 or 100% of LN 143 required to significantly reduce yield of kale.	
Maryland	Camp Detrick	July 17, 1951	Field F - sunflower	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Determine the minimum volume of 96% formulations of LN 974 or 100% of LN 143 required to significantly reduce yield of sunflowers.	
Maryland	Camp Detrick	July 10, 1951	Field F sweet pepper	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Determine the minimum volume of 96% formulations of LN 974 or 100% of LN 143 required to significantly reduce yield of sweet peppers.	
Maryland	Camp Detrick	July 18, 1951	Field F - tomato	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Determine the minimum volume of 96% formulations of LN 974 or 100% of LN 143 required to significantly reduce yield of tomatoes.	
Maryland	Camp Detrick	August 3, 1951	Field F - eggplant	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Determine the minimum volume of 96% formulations of LN 974 or 100% of LN 143 required to significantly reduce yield of eggplant.	
Maryland	Camp Detrick	Date treated not in report. Plants were planted on Jun 4 and Harvested on September 17, 1951. Does note plants were in early bud stage.	Field F - hemp	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Determine the minimum volume of 96% formulations of LN 974 or 100% of LN 143 required to significantly reduce yield of hemp.	
Maryland	Camp Detrick	August 10, 1951	Field F - peanut	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Determine the minimum volume of 96% formulations of LN 974 or 100% of LN 143 required to significantly reduce yield of peanut.	
Maryland	Camp Detrick	July 9 and 10, 1951	Field F - rutabaga	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Determine the minimum volume of 96% formulations of LN 974 or 100% of LN 143 required to significantly reduce yield of rutabaga.	
Maryland	Camp Detrick	July 16, 1951	Field F - mangel	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Determine the minimum volume of 96% formulations of LN 974 or 100% of LN 143 required to significantly reduce yield of mangel.	

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Maryland	Camp Detrick	July 11, 1951	Field F - sugar beets	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Determine the minimum volume of 96% formulations of LN 974 or 100% of LN 143 required to significantly reduce yield of sugar beets.	
Maryland	Camp Detrick	August 13, 1951	Field F - sweet potatoes	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Determine the minimum volume of 96% formulations of LN 974 or 100% of LN 143 required to significantly reduce yield of sweet potatoes.	
Maryland	Camp Detrick	August 9, 1951	Field F - tobacco	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Determine the minimum volume of 96% formulations of LN 974 or 100% of LN 143 required to significantly reduce yield of tobacco.	
Maryland	Camp Detrick	July 3 & 12, 1951	Field F - rutabaga	n-butyl 2,4-D (LNA/LN143)	Determine the minimum volume of 96% formulations of LN 974 or 100% of LN 143 required to significantly reduce yield of rutabaga (purple top).	
Maryland	Camp Detrick	July 10, 1951	Field F - garden beet	n-butyl 2,4-D (LNA/LN143)	Determine the minimum volume of 96% formulations of LN 974 or 100% of LN 143 required to significantly reduce yield of garden beet.	
Maryland	Camp Detrick	June 19, 1951	Field F - cabbage	n-butyl 2,4-D (LNA/LN143)	Determine the minimum volume of 96% formulations of LN 974 or 100% of LN 143 required to significantly reduce yield of cabbage.	
Maryland	Camp Detrick	June 20, 1951	Field F - flax	n-butyl 2,4,5-T (LNB/LN974/ Herbicide Green)	Determine the minimum volume of 96% formulations of LN 974 or 100% of LN 143 required to significantly reduce yield of flax.	
Maryland	Camp Detrick	June 16, July 2 and 9, 1951	Field F - Irish potatoes	n-butyl 2,4,5-T (LNB/LN974/ Herbicide Green)	Determine the effectiveness of low volumes of highly concentrated Ln 974 at various stages of development for reducing the yield and/or quality of Irish potatoes.	
Maryland	Camp Detrick	January 5; March 5; and April 6&7, 1951	Field F winter wheat	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Determine the effectiveness of butyl 2,4-D (LN 143); butyl 2,4,5 T (LN 974); maleic hydrazide (1700); isopropyl N-(3-chlorophenyl) carbamate (2464) at various rates of application and at various stages of development of winter wheat.	
Maryland	Camp Detrick	July 7, 1951	Field F - Irish potatoes	n-butyl 2,4,5-T (LNB/LN974/ Herbicide Green)	Determine the effectiveness in reducing potato yields of various organic and inorganic compounds alone and in combination with 974.	
Maryland	Camp Detrick	June 26, 1951	Field F - Irish potatoes	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Screen 45 LN compounds under field conditions in an attempt to find a chemical which would be as effective or more effective than 974.	
Maryland	Camp Detrick	July 20, August 2, 1951	Field F - soybeans	n-butyl 2,4,5-T (LNB/LN974/ Herbicide Green)	Determine the effectiveness of LN2, LN14, and LN974 applied as dust formulation to field grown soybeans.	
Maryland	Camp Detrick	June-July 1953	Area B on one acre plots of soybeans and sweet potatoes	n-butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	To determine the feasibility of using an experimental spray tower mounted on a pickup truck to simulate aerial spray applications of chemical anticrop agents.	Crops Divisions, Chemical Corps, Fort Detrick

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Maryland	Fort Detrick	November 6 and December 11, 1956; January 4, February 5, March 5, April 11, 13,22,30, May 6, 13 1957	Not specified but wheat field	Cacodylic Acid	Investigate if wheat was susceptible to cacodylic acid.	Crops Division, Fort Detrick
Maryland	Fort Detrick	November 14, 1956; February 24, March 20 and May 1, 1957	Not specified but rye field	Cacodylic Acid	Investigate if rye was susceptible to cacodylic acid.	Crops Division, Fort Detrick
Maryland	Fort Detrick	November 14, 1956; January 1, February 4, and March 26, 1957	Not specified but oat field	Cacodylic Acid	Investigate if oats were susceptible to cacodylic acid.	Crops Division, Fort Detrick
Maryland	Fort Detrick	June 3 and July 26, 1957	Not specified but sorghum field	Cacodylic Acid	Investigate if sorghum was susceptible to cacodylic acid.	Crops Division, Fort Detrick
Maryland	Fort Detrick	June 26 and July 26, 1957	Not specified but corn field	Cacodylic Acid	Investigate if corn was susceptible to cacodylic acid.	Crops Division, Fort Detrick
Maryland	Fort Detrick	August 1957	Rice field near Nallin Pond	Cacodylic Acid	Effect of dosage rate and droplet size upon biological activity.	
Maryland	Fort Detrick	Feb 28; March 3, 11,17, 19, 28; April 4, 1958	Greenhouse - 9 crop plants grown in containers	Cacodylic Acid	Agent applied in a spray room.	
Maryland	Fort Detrick	March 3, 1958	Greenhouse - rice grown in containers	Cacodylic Acid	Rice plants were treated with cacodylic acid at six rates in the spray room then moved back to the greenhouse.	
Maryland	Fort Detrick	July 30; Aug 4, 5, 6, 7, 11, 12, 18, 20, 21, 26, 1958	Field grown crops of millet, peanuts, sorghum and soy beans	Cacodylic Acid	Activity of cacodylic acid on crops other than rice.	
Maryland	Fort Detrick	March 3, 1958	Greenhouse	Cacodylic Acid	Plants placed in dew chamber for one hour then moved to spray room where dust was applied with small duster.	
Maryland	Fort Detrick	May 19 - August 2, 1960	Field grown crops of wheat, rye, oats, barley, kaoliang, millet, corn, sweet potatoes, and Irish potatoes	Cacodylic Acid	Obtain crop response data for a broad range of economically important crop species.	
Maryland	Fort Detrick	May 1963	Cattails	Herbicide Purple	Five bomblets were statically fired.	Technical Evaluation Division of Fort Detrick
Maryland	Fort Detrick	August 1961- June 1963	Primary screening carried out in greenhouses on 14 day old bean plants; secondary screening carried sprayed in green houses at 1,5, 10 lbs/ac on tree seedlings	Cacodylic Acid	To evaluate them for effectiveness as defoliators, deiscants, and herbicides. Ones identified as promising went to field screening at Fort Ritchie or Fort Meade.	
Maryland	Fort Detrick	1967-68	Greenhouse studies on 14-day old Red Kidney Beans	Herbicide Blue (Phytar 560G), Picloram, n-butyl 2,4-D (LNA/LN 143)	Determine the effect of cacodylic acid on the translocation of 2,4-D and picloram. 100ul of chemical were applied with a pipet to plants.	
Maryland	Fort Detrick	May 21, 1968	11 plots, 20 x 20 sq ft	Herbicide Orange, Herbicide White, Picloram	Plots were observed periodically for lateral and vertical movement of herbicides in soil for 12 months.	Crops Division, Fort Detrick
Maryland	Fort Detrick	June 12 - September 12, 1968	Laboratory and greenhouse studies	Herbicide Orange	Seven experiments were done on black valentine or red kidney bean plants and three experiments were done on saplings of silver maple or green ash.	Plant Sciences Laboratory, Fort Detrick

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Maryland	Fort Detrick	June 12 - September 12, 1968	Laboratory and greenhouse studies	Herbicide Orange	Study to correlate the spherical drop sizes of the defoliant with the spot sizes they produced by absorption and spreading on Kromekote Cards.	Plant Sciences Laboratory, Fort Detrick
Maryland	Fort Detrick	May 2 and 12, 1969	Redcoat winter wheat plots location not specified	Herbicide Blue (Phytar 560G)	Evaluate the yield response of winter wheat to foliage spray applications of cacodylic acid formulations in comparison to Phytar 560G. Sprays applied using movable spray shield to prevent drift.	
Maryland	Fort Detrick	1970	Controlled environmental chamber with individual potted plants	Picloram	Examine the interaction of bromacil and picloram at varying concentrations.	
Maryland	Fort Detrick	1970	Controlled environmental chamber with individual potted plants	Picloram	Second experiment to further explore the interaction of bromacil and picloram at varying concentrations.	
Maryland	Fort Meade	2 August 1963	24 Plots, each approximately 150 square feet, location not specified.	Cacodylic Acid	Purpose was to simulate aerial application and evaluate defoliation.	Crops Division, Chemical Corps, Fort Detrick
Maryland	Fort Meade	Spring- Summer 1964	Isolated area of an abandoned farm; area was marked off in 225 sq ft plots.	Herbicide Orange, Herbicide Purple	Evaluate selected chemicals under field conditions.	Chemical Corps, Fort Detrick
Maryland	Fort Ritchie	July 11-12, 1963	Eighteen individual trees each of: white ash, American elm, red maple, black locust, chestnut oak, and northern red oak	Herbicide Orange	Purpose was to simulate aerial application and evaluate defoliation.	Chemical Corps, Fort Detrick
Mississippi	Naval Construction Battalion Center, Gulfport	26 June 1968- June 10, 1977	Secure 12 Acre Storage Area	Herbicide Orange, Herbicide Blue, and Herbicide White	Shipping to Vietnam, then storage pending guidance on disposal.	San Antonio Air Material Area (SAAMA); 355th General Supply Company (Air Reserves); 2954th Combat Logistic Support Squadron
Mississippi	Naval Construction Battalion Center, Gulfport	May 24 - June 10, 1977	Redrumming facility	Herbicide Orange	Drums were moved to redrumming facility where the drum heads were removed and herbicide was sucked through intake hoses into tank railcars. Rail cars were then moved to the dock where the herbicide was transferred to the Vulcanus. Per IAW EPA regulations, each drum was rinsed with diesel fuel, crushed, and stacked.	32 men from the 2954th CLSS and 76 personnel from other ALCs.
New York	Fort Drum	May - October 1959	Four square mile (2,560 acres) area located in an artillery impact area; access to it on the ground was not possible.	Herbicide Orange [1:1 mixture of n-butyl 2,4,5-T (LNB/LN974/Herbicide Green):n-butyl 2,4-D (LNA/LN143)]	To kill deciduous vegetation in impact area that was obstructing observation of artillery impacts on targets. Defoliant was obtained from the USDA and mixed on-site prior to loading into H-21 helicopter for application.	Chemical Corps
Texas	Kelly AFB	November 18, 1970 - Unknown	Storage in Yard 62 East Kelly area	Herbicide Blue; n-butyl 2,4,5-T (LNB/LN974/Herbicide Green); n-butyl 2,4-D (LNA/LN143)	Kelly AFB Yard 62 became the storage location for herbicide blue, n-butyl 2,4-D and n-butyl 2,4,5-T when SAAMA had to take delivery per contract requirements.	San Antonio Air Material Area (SAAMA)

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Utah	Dugway Proving Ground	August 7 & 8, 1963	Downwind Grid	Herbicide Orange	To determine if the disseminating characteristics of the Air Force TMU 28/B spray tank will meet the objectives of the A/B45Y-3 program when the tank is used for defoliating agents.	
Utah	Dugway	September 14 -October 6, 1964	Firing range	Herbicide Orange	To determine the performance, reliability, maintenance requirements, and suitability of the Army interim defoliation system for the US Army OV-1 (MOHAWK) aircraft.	Chemical Corps Fort Detrick/Army Aviation
Johnston Island (Atoll)	Johnston Island (Atoll)	April 18, 1972 - July 14, 1977	The herbicide area that was located on the northwest corner of Johnston Island	25,219 drums (1,361,826 gallons) Herbicide Orange moved from Vietnam on the SS Transpacific to Johnston Atoll for storage.	Storage pending decision on disposition.	PACAF
Johnston Island (Atoll)	Johnston Island (Atoll)	July 15, 1977 - September 3, 1977	Herbicide Orange moved from herbicide storage area to dock in fuel trucks	24,708 barrels were transferred to refueling trucks and transported to the ship Vulcan.	Destruction	Personnel from Holmes and Harver Corporation, Anaheim

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Florida	Apalachicola National Forest, near Sopchoppy, Wakulla County, Tallahassee	May 3-8, 1967	Not specified but land and facilities were provided by the Supervisor, Apalachicola National Forest	Herbicide Orange, Herbicide Blue	Evaluate rapid-acting desiccants and defoliants and to assess the defoliation response of woody vegetation to mixtures of herbicides and/or desiccants. Applications made with Bell G-2 helicopter.	
Georgia	Georgia Power Company: Valdosta-Thomasville line and Bonaire line near Macon	May 20-22, 1964	Six plots, each 60 X 2640 feet, were treated on the Valdosta-Thomasville line. Seven plots, each 200 X 750 feet, were treated on the Bonaire line.	Herbicide Orange, Herbicide Purple	Evaluate chemicals under field conditions against a standard herbicide, Herbicide Purple, in a swamp forest. Chemicals were sprayed on 5-acre plots by a Bell helicopter at a rate of 10-gallons total mixture/acre either just after sunrise or just before sunset.	Georgia Power Company and U.S. Army Biological Center (Provisional)
Montana	Bozeman	July, 3, 6, and 14, 1953	Galatin Valley	n-Butyl 2,4-D (LNA/LN 143); n-butyl 2,4,5-T (LNB/LN974/Herbicide Green)	Field evaluations of chemical agents for attacking wheat using miniature spraying systems mounted on a light aircraft.	
Tennessee	Tennessee Valley Authority: power line from Hiwassee Dam, NC to Coker Creek, TN	June 17; July 2,3; 1964	Seven plots, each 200 X 750 feet. Right of way 200 feet wide on the power line from Hiwassee Dam, NC to Coker Creek, TN	Herbicide Orange, Herbicide Purple	Evaluate chemicals under field conditions against a standard herbicide, purple. Compounds were applied by Bell helicopter.	Tennessee Valley Authority and U.S. Army Biological Center (Provisional)

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Cambodia	Mimot or Krek, Kompon Cham Province	April 16 -30, 1969	Dar and Prek Clong Plantations	Orange	Spray drift from Vietnam defoliation missions. Forty spray missions had been flown to control vegetation in northern Tay Ninh Province.	Ranch Hand
Canada	Canadian Forces Base Gagetown, New Brunswick	June 14-17, 1966	Western portion of Base Gagetown between Broad Road and Blissville Road (Fig 1). Test site was ~ 4 miles long by 1,200 feet wide. 116 plots, each 200 X 600 feet wide.	Herbicide Orange; Herbicide Purple	Further evaluate chemical agents that cause rapid defoliation of woody and herbaceous vegetation. Defoliations applied by helicopter using HIDAL spray system.	
Canada	Base Gagetown, New Brunswick	21-24 June 1967	Test area was located approximately 10 miles from nearest boarder on Rippon Road east of Broad Road. 50 plots, each 200 x 660 feet with a 200 ft buffer zone between adjacent plots.	Herbicide Orange; Sodium Cacodylate	Further evaluate chemical agents that cause rapid defoliation of woody and herbaceous vegetation. Defoliations applied by helicopter using HIDAL spray system.	Crops Division, Fort Detrick with assistance from enlisted men from the Royal Canadian Army Service Corps, Royal Canadian Army Horse Artillery, Royal Canadian Dragoons, and Royal Canadian Black Watch
India	Kumbia	May 1945- February 1946	Kumbia	n-Butyl 2,4-D (LNA/LN143)	Destructiveness of chemical agents, applied primarily as sprays, was tested on five major tropical crops plants grown in field plots.	Chemical Defense Research Establishment, Cannanor, South India, under the jurisdiction of the Chemical Defense Research Department, Ministry of Supply, Great Britain
Korea	DMZ to include I Corps (GP) Area	Mid-May through mid-July, 1968	Area north of Civilian Control Line (CCL) and south of southern boundary of DMZ (South Tape). Priority Area 1, a 100 meter strip on each side of DMZ Security Fence.	Herbicide Orange	Control vegetation.	Over 3,000 ROKA personnel were involved in the defoliation operation, to include transportation, mixing and application of all defoliant. Operations were done under the supervision of U.S. Army Chemical Corps officers and enlisted personnel from the Chemical Section, 2nd Infantry Division.
Korea	DMZ to include I Corps (GP) Area	Mid-May through mid-July, 1968	Area north of Civilian Control Line (CCL) and south of southern boundary of DMZ (South Tape). Primarily used in Priority Area 3, a 30 meter wide strip on each side of tactically significant roads in the forward area.	Herbicide Blue	Control vegetation.	ROKA personnel made all defoliant applications under the supervision of Chemical Corps officers and enlisted personnel from the Chemical Section, 2nd Infantry Division.
Laos		December 1965- September 1969	Ho Chi Minh Trails and road network	Herbicide Orange, Herbicide White, Herbicide Blue	Herbicide operations were begun in Laos to counter the use of the Ho Chi Minh trail by the Vietnamese. Sorties being flown from Tan Son Nhut and Da Nang.	Ranch Hand
Thailand	Royal Thai Army Replacement Training Center, Pranburi Military Reservation	April 1964/January 1964	Hua Hin Airport	Herbicide Orange, Herbicide Purple, Herbicide Pink; Cacodylic Acid, Sodium Cacodylate	Ground calibration of aircraft spray system, defoliation tests.	Personnel from the US Army Biological Center, Fort Detrick.

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Thailand	Udorn Royal Thai Air Force Base	October 1968	Herbicides were only temporarily at Udorn to refill planes for missions in northern Laos.	Herbicide Orange	Ranch Hand Aircraft, support personnel and Herbicide Orange were flown into Udorn for missions flown in Laos. No herbicide was sprayed in Thailand.	Ranch Hand
Thailand	Udorn Royal Thai Air Force Base	November 1968	Herbicides were only temporarily at Udorn to refill planes for missions in northern Laos.	Herbicide Blue	Ranch Hand Aircraft, support personnel and Herbicide Orange were flown into Udorn from Phu Cat Air Base Vietnam for missions flown in northern Laos. No herbicide was sprayed in Thailand.	Ranch Hand
Thailand	Udorn Royal Thai Air Force Base	December 28, 1968 - January 2, 1969	Herbicides were only temporarily at Udorn to refill planes for missions in northern Laos.	Herbicide Orange	Ranch Hand Aircraft, support personnel and Herbicide Orange were flown into Udorn from Phu Cat Air Base Vietnam for missions flown in northern Laos. No herbicide was sprayed in Thailand.	Ranch Hand
Thailand	Udorn Royal Thai Air Force Base	February 2-5, 1969	Herbicides were only temporarily at Udorn for to refill planes for missions in northern Laos.	Herbicide Orange	Ranch Hand Aircraft, support personnel and Herbicide Orange were flown into Udorn from Phu Cat Air Base Vietnam for missions flown in northern Laos. No herbicide was sprayed in Thailand.	Ranch Hand
Thailand	Udorn Royal Thai Air Force Base	August 31- September 7, 1969	Herbicides were only temporarily at Udorn for to refill planes for missions in northern Laos.	Herbicide Blue	Ranch Hand Aircraft, support personnel and Herbicide Orange were flown into Udorn from Phu Cat Air Base Vietnam for missions flown in northern Laos. No herbicide was sprayed in Thailand.	Ranch Hand