

Crop Destruction In Vietnam and Elsewhere

To the Editor:

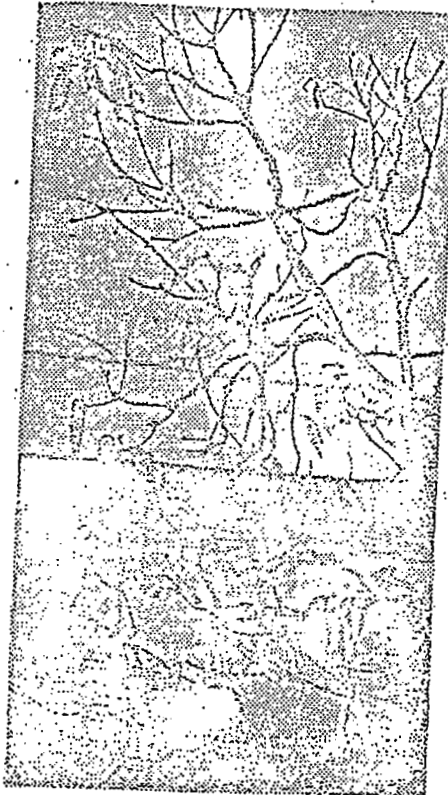
We believe that the July 12 Op-Ed article "Agent Blue in Vietnam" by Prof. Arthur H. Westing requires emendation.

The author states that in Quangngai province fifteen crop destruction missions were approved for 1970, totaling 182,000 acres, which would represent 85 per cent of the croplands of the province. Last summer in South Vietnam, we made a particular analysis of the crop destruction program in Quangngai and Quangtin.

According to official South Vietnamese-U.S. figures, crop destruction plans approved for these adjacent provinces (not Quangngai alone) in 1970 estimated a food loss of about 14,000 tons, enough for some 70,000 people. Food to be destroyed is a more appropriate measure of the extent of this program than is total acreage potentially exposed; this represents, using the Vietnamese Government's crop production figures, the spraying of about 7 rather than 85 per cent of the total rice crop of the two provinces.

The extensively cultivated coastal plain being under South Vietnamese control and not subject to anti-crop spraying, these plans call for the destruction of a much higher percentage of crops in the mountain valley land cultivated by Montagnards, for whom the loss of 14,000 tons would be the loss of most of their normal livelihood. The limited objectives of the projected crop destruction in Quangngai in 1970 do not change the fact that official sources agree that the diets of more than half a million civilians have been chemically destroyed, 1962-70.

Professor Westing states that the crop destruction program continues



The New York Times/Ralph Blumenthal

even though the Secretary of State told Congress in March that it had been stopped. We are unaware of any evidence of continued chemical crop destruction in Vietnam, although herbicides are still being used for defoliation. More alarming than this continued use are substantial reports of chemical crop destruction by Portuguese forces in Angola. It is urgent that the U.S. join other nations in abjuring the military use of chemical herbicides. JOHN D. CONSTABLE, M.D.

Professor of Surgery, Harvard

MATTHEW MESELSON

Professor of Biology, Harvard
Boston, July 15, 1971

'Agent Blue' in Vietnam

By ARTHUR H. WESTING

The United States has been destroying growing crops in South Vietnam since at least November 1961 as part of its "resource denial" program. This is accomplished largely by the aerial application of an aqueous solution of sodium dimethyl arsenate "Agent Blue"; applied at the rate of 9.3 pounds of active ingredients per acre. This is a highly persistent (and potentially hazardous) chemical not domestically registered for use on or near crops.

Based on available Department of Defense data, some 6,397,000 pounds of active ingredients were expended between the beginning of 1962 and the end of 1969. Figures for 1970 are not available, although the program continues. Annual acreage treated, according to the Defense Department is:

Year	Acres
1962	1,000
1963	250
1964	10,000
1965	66,000
1966	104,000
1967	221,000
1968	170,000
1969	115,000
Total	688,000

The 688,000 acres sprayed during eight years for which data are available represent 9 per cent of South Vietnam's 7.6 million acres of agricultural lands. Actually, most crop destruction occurs in the Central Highlands so that the percentage of destruction is region-

A Deadly Chemical Has Been Destroying Crops for Years

ally much higher. These regions have been traditionally food poor; their population consists largely of primitive hill tribes (Montagnards). Spraying is usually carried out near harvest time, destroying the standing crop and rendering the land useless until at least the next growing season.

Additionally, foods are purposely destroyed by various other ground techniques. Foods are also destroyed incidentally in the large-scale forest destruction program in which, according to the Pentagon, some 5,517,000 acres or 13 per cent of South Vietnam, have been arially sprayed through the end of 1969. No data are available to me on how much food has been destroyed in these ways.

Some estimates can be made for the amount of food destruction via herbicides arially applied for that purpose. A conservative yield estimate for upland rice fields (the major target) is 500 pounds of milled rice per acre per year. (Crops other than rice are also destroyed but we can assume for our purposes that their food yield is equivalent to that of upland rice.) One Vietnamese apparently can live on 1.1 pounds of milled rice per day, or 400 pounds per year. Using the above

listed acreages, one arrives at the following figures of destruction:

Year	Pounds of Rice Destroyed	Annual Diets Denied
1962	500,000	1,250
1963	120,000	300
1964	5,000,000	12,500
1965	33,000,000	82,500
1966	52,000,000	130,000
1967	110,500,000	276,250
1968	85,000,000	212,500
1969	57,500,000	143,750
Total	344,000,000	860,000

The main avowed purpose of the food destruction program is to deny food to the enemy soldier. Since the Vietcong number only about 260,000 out of 17.5 million (or 1.5 per cent) but control perhaps 80 per cent or 90 per cent of the rural economy of South Vietnam, enormous amounts of food must be destroyed in order to create a hardship for the Vietcong. In fact, classified studies performed for and by the U. S. in 1967 and 1968 revealed that food destruction has had no significant impact on the enemy soldier. Civilians, in contrast, did and do suffer. Estimates in these studies varied between 10 and 100 for how many civilians have to be denied food in order to deny it to one guerrilla. In other words, of the 860,000 total annual diets destroyed during 1962-1969, between 774,000 and 851,000 were destined for civilian stomachs. Moreover, it is not unreasonable to assume that

the brunt of this civilian burden is borne by infants, aged, fetuses, pregnant and lactating women, and sick.

By way of more specific example I single out Quangngai Province, a particularly war torn northern province of South Vietnam. During a visit there this past August I learned that 15 crop-destruction missions had been approved for 1970, totalling 182,000 acres. (An additional 13 forest-destruction missions were scheduled for 1970, totalling another 107,000 acres.) A study done for the Department of Defense in 1969 states that 215,000 acres in the province (out of a total of 1,418,000 acres) were then being used agriculturally. Thus approximately 85 per cent of the crop lands of Quangngai were scheduled for aerial destruction in 1970, presumably virtually all not under physical United States control. I must add that I have no knowledge of how many acres were actually sprayed in Quangngai Province in 1970 (or in previous years), only the number officially approved for that year.

Our nation's food-destruction program in South Vietnam, although not secret, has received only scant attention. It is clear that the acceptability of food destruction as a means of warfare requires an immediate and searching re-evaluation by the Congress, the Pentagon, and ultimately, the White House.

Arthur H. Westing, chairman of the biology department at Windham College in Putney, Vermont, has made two trips to Indochina.