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THE DAMAGE CONTROL RESEARCH IN AGRICULTURE

INVESTIGACIONES SOBRE EL CONTROL DE DAÑOS CAUSADOS POR LOS VERTEBRADOS EN LA AGRICULTURA

1970 ANNUAL REPORT
INFORME ANUAL 1970



PALMIRA, COLOMBIA
RESEARCH CENTER
CENTRO DE INVESTIGACIONES

Cooperating Agencies
Agencias Cooperadoras



Ministry of Agriculture and Fisheries
Bureau of Technical Assistance
U.S. Agency for International Development

Denver Wildlife Research Center
Bureau of Sport Fisheries and Wildlife
U.S. Department of Interior

**CALI, COLOMBIA, FIELD STATION
1970 ANNUAL PROGRESS REPORT***

PRINCIPAL INVESTIGATORS:

**Paul P. Woronecki, José Fernando
Londoño V., and Donald J. Elias**

COOPERATING AGENCIES:

Colombia -

Instituto Colombiano Agropecuario

United States -

**Agency for International Development
Bureau of Technical Assistance
Bureau of Sport Fisheries and Wildlife
Denver Wildlife Research Center
(Work Unit DF-104.4)**

***Results Incomplete and Not for Publication, Release, or Use
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Center.**

ABSTRACT*

With the transfer of biologists Paul P. Woronecki and Donald J. Elias to Cali, Colombia, in October, the initial phase of establishment of a vertebrate damage control research center began. The center is being established by Instituto Colombiano Agropecuario and the Denver Wildlife Research Center in cooperation with the U.S. Agency for International Development. Facilities will be located on the Centro Nacional de Investigaciones Agropecuarias at Palmira, Valle, Colombia. Temporary office facilities are located in the Central Office Building of the ICA Experiment Station at Palmira. José Fernando Londoño V. was assigned to the project by ICA as a research biologist. Another Colombian biologist will join the staff in early 1971 along with a secretary and technicians. Biologists are presently surveying problem situations; soybean damage by doves will probably receive initial research emphasis.

*This research was conducted with funds provided to the Bureau of Sport Fisheries and Wildlife by the Agency for International Development under the project "Control of Vertebrate Pests: Rats, Bats, and Noxious Birds," PASA RA(ID) 1-67.

INTRODUCTION

Two biologists from the Denver Wildlife Research Center were transferred to Cali, Colombia, in October to help establish a vertebrate damage control research center. This is the third field station to be established under a worldwide agreement¹ between the U.S. Agency for International Development (AID) and the U.S. Department of the Interior, Bureau of Sport Fisheries and Wildlife (BSFW).

The center is being developed in cooperation with the Instituto Colombiano Agropecuario (ICA), and will be located on the Centro Nacional de Investigaciones Agropecuarias at Palmira, Valle, Colombia.

The establishment and location of the center are the result of a series of preliminary surveys by Denver Center biologists, which were initiated in 1968 to determine the extent and economic impact of bird and mammal damage to agriculture in Latin America.

PLANNING

The Cauca Valley of Colombia is the major agricultural area of the country and forms an ideal location for the center. Although Colombia is located in the tropical zone, it enjoys a variety of climates ranging from extreme heat to perpetual snow and cold at higher elevations. The geographic diversity makes Colombia suitable for many agricultural crops; the varied fauna contributes to the possibility of a variety of vertebrate pest problems. The research program will expand into each of these geographic areas. It is intended that the center will eventually become a base for the investigation of vertebrate damage problems in agriculture in Latin America.

OBJECTIVES

The specific objectives of the program are to reduce losses of food and fiber crops caused by birds and mammals and to develop Colombian research capability in this specialized field. Biologists assigned to the program by the Colombian Government will receive practical training and research experience. Formal training will include short-term workshops and post-graduate scholarships for qualified personnel.

¹Participating Agency Service Agreement PASA RA(ID) 1-67 for research on control of rodents, vampire bats, and noxious birds.

CENTER PERSONNEL

Luis H. Camacho, National Director of Grain Legume and Annual Oil Crops Program, is serving as the Project Director for ICA.

Paul P. Woronecki, formerly at the Davis, California, field station of the Denver Wildlife Research Center, arrived in Colombia on October 20, 1970, and is assigned as the U.S. team leader.

Donald J. Elias, formerly with the Agricultural Rodent Unit at the Denver Wildlife Research Center, arrived in Colombia on October 19, 1970, and is assigned to the project as a research biologist.

José Fernando Londoño V., formerly with the Grain Legume and Annual Oil Crops Program, is assigned to the project by ICA and will serve as a research biologist.

Recruiting for a second Colombian to be assigned as a research biologist is presently underway; it is anticipated that the position will be filled in 1971. Upon completion of the new laboratory and office facilities, additional personnel will include a bilingual secretary and field and laboratory technicians.

FACILITIES

The project is temporarily located in the office of the National Director of Grain Legume and Annual Oil Crops in the Central Office Building of the ICA Experiment Station at Palmira. No laboratory facilities are presently available. Project personnel are attempting to arrange for a temporary laboratory and animal quarters in an existing building on the experiment station grounds. Discussions were held with Dr. Guillermo Rojas Monge, the architect from ICA headquarters in Bogota, who is preparing the plans for the permanent laboratory and office facilities. Work is scheduled to begin in late January with completion set for June 1971.

EQUIPMENT

Prior to the transfer of U.S. personnel to Colombia, equipment needs for offices, laboratory, animal quarters, and field work were determined. A portion of this equipment, ordered under FY-1970 funds, has arrived in Colombia. With the exception of items such as desks and chairs, the majority of this equipment has been stored until facilities are available. Two vehicles were ordered; delivery is expected in 1971. Items ordered under FY-1971 funds have not been received.

THE PROBLEM

Birds and mammals have been reported to damage a variety of crops in Colombia. These reports are summarized in Tables 1, 2, 3, and 4. A serious problem, which will receive initial research, is that of damage to emergent soybeans by doves in the Cauca Valley. Biologists from the Center will continue to survey other pest problems and their economic importance to determine where further work is needed. Based on previous surveys, agricultural bird problems are the most numerous and serious; these will probably receive the greatest emphasis in the early work of the Center. Information on the basic biology and ecology of Colombian animal pests will be collected as time permits. A list of proposed study plans for the initial work is included in the appendix.

TABLE 1. Location of reported bird damage to sorghum in Colombia

Location	Department (State)	Common name of bird		Scientific name	Crop stage	Time
		English	Spanish			
Valle del Sinú	Córdoba	Ruddy ground dove	Abuelita	<u>Collumbigallina</u> <u>talpacoti</u>	Emerging	May, September
		Common ground dove	Torcazas, Palomas	<u>C. passerina</u>	Mature	August, December
		Plain-breasted ground dove	Torcazas, Palomas	<u>C. minuta</u>	Mature	January
		Parakeets	Periquitos	Family: Psittacidae	Mature	January
		Brown-throated parakeet	Cara sucia	<u>Aratinga</u> <u>pertinax</u>	Mature	January
Espinal	Tolima	Dickcissel Doves	Sabanero Palomas	<u>Spiza americana</u> Family: Columbidae	Mature Mature	November, March July-August
		Shiny cowbird	Jolofo, Tordo azul, Pájaro vaquero, Chamón	<u>Molothrus</u> <u>bonariensis</u>		December-January
Ibagué	Tolima	Parakeets	Periquitos	Family: Psittacidae	Mature	January
		Green-rumped parakeet		<u>Forpus</u> <u>passerinus</u>	Mature	January
ICA Experiment Stations	Various regions	Seed eaters:				
		Blue-black grassquit	Chisqua	<u>Volatinia</u> <u>jacarina</u>	Mature	Various
		Ruddy-breasted seedeater	Chisqua	<u>Sporophila</u> <u>minuta</u>	Mature	
		Wedge-tailed grassfinch	Chisqua	<u>Emberizoides</u> <u>herbicola</u>	Mature	
		Yellow grassfinch	Chisqua	<u>Sicalis luteola</u>	Mature	
Shiny cowbird	Jolofo, Tordo azul, Pájaro vaquero, Chamón	<u>Molothrus</u> <u>bonariensis</u>	Mature			

TABLE 2. Location of reported bird damage to rice in Colombia

Location	Department (State)	Common name of bird		Scientific name	Crop stage	Time
		English	Spanish			
Villavicencio and San Martín	Meta	Dickcissel	Sabanero	<u>Spiza americana</u>	Mature	December-January
Valle del Sinú	Córdoba	Shiny cowbird	Jolofo, Tordo azúl, Pájaro vaquero, Chamón	<u>Molothrus</u> <u>bonariensis</u>	Mature	September
		Yellow-headed blackbird	Gorrita	<u>Agelaius</u> <u>icterocephalus</u>	Milk and mature	August
		Purple gallinule	Tuntuna	<u>Porphyrula</u> <u>martinica</u>	Nests in irrigated rice fields	May-September
Ibagué	Tolima	Parakeets	Periquitos	Family: Psittacidae		January
		Seedeaters	Chisquas	<u>Sporophila minuta</u> , <u>Volatina jacarina</u> , and others		January
Espinal	Tolima	Doves	Torquazas, Palomas	Family: Columbidae	Mature	July-August
		Shiny cowbird	Jolofo, Tordo azúl, Pájaro vaquero, Chamón	<u>Molothrus</u> <u>bonariensis</u>	Mature	July-August
Ginebra	Valle del Cauca	Ruddy-breasted seedeater	Chisqua	<u>Sporophila</u> <u>minuta</u>		
		Red-breasted blackbird	Sargento	<u>Leistes militaris</u>	Before maturity	February

(continued)

TABLE 2. (Continued)

ICA Experiment Stations	Various regions	Doves	Torquazas, Palomas	Family:	Mature	Various
		Ruddy ground dove	Abuelita	Columbidae <u>Collumbigallina</u>	Mature	
		Eared dove	Naguiblanca	<u>talpicoti</u>		
		Seedeaters:		<u>Zenaida</u>	Mature	
		Ruddy-breasted seed eater	Chisqua	<u>auriculata</u>		
		Blue-black grassquit	Chisqua	<u>Sporophila</u>	Mature	
		Yellow grassfinch	Chisqua	<u>minuta</u>		
		Shiny cowbird	Jolofo, Tordo azúl, Pájaro vaquero, Chamón	<u>Volatina</u>	Mature	
				<u>jacarina</u>	Mature	
				<u>Sicalis luteola</u>	Mature	
				<u>Molothrus</u>	Mature	
				<u>bonariensis</u>		

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TABLE 3. Reported bird damage to crops other than rice and sorghum

Crop	Stage	Location	Department (State)	Common name of bird		Scientific name	Time
				English	Spanish		
Soybean	Emerging	Various	Valle del Cauca	Doves	Torquazas, Palomas	Family: Columbidae	March-April, September-October
	Emerging	Various	Valle del Cauca	Eared dove	Naguiblanca	<u>Zenaida</u> <u>auriculata</u>	March-April, September-October
Corn	Emerging	Medellin	Antioquia	Doves	Torquazas, Palomas	Family: Columbidae	March-April, September-October
	Mature	Valle del Sinú	Córdoba	Parrots	Loros	Family: Psittacidae	August, January
	Mature	Valle del Sinú	Córdoba	Parakeets	Periquitos	Family: Psittacidae	August, January
Sesame	Fruiting	Various	Tolima	Parakeets	Periquitos	Family: Psittacidae	November-December, June-July
	Fruiting	Valle del Sinú	Córdoba	Parakeets	Periquitos	Family: Psittacidae	December
Grape	Mature	Santa Elena	Valle del Cauca	Blue-gray tanager	Azulejo pitojúe	<u>Thraupis virens</u>	February
	Mature	Santa Elena	Valle del Cauca	Kiskadee	Cristo fué	<u>Pitangus</u> sp.	February

TABLE 4. Reported mammal damage to agricultural crops in Colombia

Crop	Stage	Location	Department (State)	Common name of mammal		Family name
				English	Spanish	
Corn	Mature	Various	Tolima	Rats	Ratas	Cricetidae
	Mature	Various	Tolima	Squirrels	Ardillas	Sciuridae
	Mature	Various	Tolima	Monkeys	Micos	Cebidae
Rice	40-80 days after planting	Ibague	Tolima	Cotton rats	Ratas	Cricetidae
Soybean		Monteria	Cordoba	Rabbits	Conejos	Leporidae
Sugarcane		Pereira	Risaralda	Rats	Ratas	Muridae
Cacao		Various regions		Rats	Ratas	Muridae
		Various regions		Squirrels	Ardillas	Sciuridae
Cassava		Various regions		Agouti	Guagua	Dasyproctidae
Apple		Various regions		Fruit bats	Murcielagos	Phyllostomatidae
Pineapple	Mature	Pereira	Risaralda	Rats	Ratas	Muridae
Grape	Mature	Ginebra	Valle del Cauca	Opposum	Chucha	Didelphidae
Oil palm		Northern areas	Antioquia	Rats	Ratas	Muridae

APPENDIX

PROPOSED STUDY PLANS

1. The extent and economic importance of vertebrate damage to agricultural crops in Colombia.
2. Ecology and economic importance of the doves of the Cauca Valley, as related to agricultural damage problems.
3. Techniques for reducing damage to emergent soybeans by doves in the Cauca Valley.
4. Techniques for reducing dove damage to maturing sorghum in the Cauca Valley.
5. Ecology and economic importance of parakeets and parrots in Colombia as related to agricultural damage problems.
6. Techniques for reducing damage to corn and sorghum by parrots and parakeets in Colombia.