



منظمة الأغذية
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Organización
de las
Naciones
Unidas
para la
Agricultura
y la
Alimentación

ROAD MAP

FOR THE NEW WORLD SCREWWORM (NWS) *Cochliomyia hominivorax* SUPPRESSION AND PROGRESSIVE ERADICATION IN THE WESTERN HEMISPHERIC ENDEMIC ZONES

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Acronyms

ARS	Agriculture Research Services - USDA
BID	Inter American Development Bank
CAN	Community Andean Nations
CARICOM	Caribbean Community and Common Market
CAS	South Council for Agriculture and Livestock
COMEXA	Mexican American Commission for Screwworms Eradication
COPEG	Panama and United States Commission for Screwworms Eradication
CVP	Veterinary Permanent Committee
EMBRAPA	Brazilian Agriculture Research Corporation
FAO	Food and Agriculture Organization of the United Nations
NWS	New World Screwworm
GF - TADs	General Framework for the Progressive Control of the Transboundary Animal Diseases
IAEA	International Atomic Energy Agency
IFAD	International Fond for Agriculture Development
IICA	International Institute for Cooperation in Agriculture
INTA	National Institute for Technology in Agriculture of Argentina
MERCOSUR	Southern Common Market
NAAHC	North American Animal Health Committee
NAFTA	North American Free Trade Agreement
OAS	Organization of American States
OIE	World Organization for Animal Heath
OIRSA	International Regional Organization for Agriculture and Animal Health
WHO	World Health Organization
OPS	Pan American Health Organization
RD- CAFTA	Dominican Republic, Central America and United States Free Trade Agreement
SIT	Sterile Insect Technique
UE	European Union
USAID	United States Agency for International Development
USDA	United States Agriculture Department
WB	World Bank

Introduction

The present Road Map arises from the proposal that the Food and Agriculture Organization of the United Nations (FAO) and international organizations involved in the Global Framework for the Progressive Control of Transboundary Animal Diseases (GF-TADs) and others should establish co-operative mechanisms for suppressing and eradicating the NWS in a consistent manner in the endemic zones on the American Continent. It is also understood that the capacity to control and potentially eliminate the disease rests with the national authorities of the affected countries and in the international community by way of assistance provided by international organizations, such as the Food and Agriculture Organization (FAO), the Mexican American Commission for Screwworms Eradication (COMEXA), the Panama and United States Commission for Screwworms Eradication (COPEG), the World Organization for Animal Health (OIE), the World Health Organization (WHO), and others.

Vision:

A continent on which livestock production contributes to the improvement of food security, the battle against poverty, to health, and to social-economic development free of the burden of new world screwworm.

Mission

To establish a procedural guide for the progressive control of NWS with the establishment of sustainable regional associations based on public and private sectors and institutions in the regions where NWS is endemic, as well as in those free of NWS, with a view to promoting co-operative strategies for the successful control and eventual eradication of NWS on the American Continent.

Logistics

Countries with endemic populations of NWS should follow the example of campaigns carried out by governments and livestock producers in the countries of North America, Central America, and the Caribbean, where the eradication of NWS has been successfully achieved. These campaigns involve the implementation of sanitary prevention and suppression programs focused on the reduction of the wild population of NWS in any given area, region or country, by a minimum of 60%, to be achieved by using the Sterile Insect Technique (SIT), and to be continued until the elimination of the parasite. This strategy relies on the simultaneous operation of the two production plants for sterile NWS flies that presently exist: one located in the region of the city of Tuxtla Gutiérrez, Chiapas, México (with a maximum production of 500 million flies per week); and the other located in Pacora, Panamá (with a maximum production of 100 million flies per week).

Future NWS eradication programs could be implemented to continue the North-South sweep progressively covering the endemic countries of the Caribbean, so that, as an initial achievement, the NWS is confined to the region of South America.

In the Caribbean, the priority will be to find viable alternatives to complete eradication in Jamaica, without it limiting the parallel activities of neighboring countries currently endemic with NWS (Cuba, Haiti, Dominican Republic, and Trinidad and Tobago). The programs could be implemented individually or by groups of countries, depending on the epidemiological situation, the available financial resources, and the political will of the island states. Due to the country's proximity to the South American Continent, and the risk posed by possible migrations of fertile NWS flies, it is suggested that the country in which eradication operations for the Caribbean are concluded should be Trinidad and Tobago.

In South America, all countries are endemic to NWS, with the exception of continental Chile. Preparations for the implementation of control and eradication programs in South America should be initiated when less than two years remain towards the estimated date of achieving eradication in the Caribbean, although this should not prevent countries or sub-regions from initiating early suppression and eradication activities, depending on their priorities, and epidemiological and socio-economic position.

Beforehand, however, given the scarcity of available information on the geographical distribution of NWS, its behavior in the wild, and its seasonal extent in South American countries, it is important to use the period running up to the initiation and design of control and eradication programs for carrying out indispensable studies on the geographical distribution of the disease, on the dynamics and genetics of populations, as well as on the sexual compatibility between populations; also on the impact of NWS on the health, society and economy of this sub-region.

Given this present lack of information, it is difficult to envision a precise strategy that should be used in this region to implement the eradication programs for this disease. However, the following strategic alternatives can be given general consideration:

Strategies

- 1) The North to South sweep of eradication of NWS in Central America and the Caribbean could be given continuity by extending operations beyond the sterile insects established barrier in the Darien Gap region of Panama, to include the Andean countries (Colombia, Venezuela, Ecuador, Peru and Bolivia), with a view to moving on into the Amazonian sub-region (Guyana, Surinam, French Guyana, and northern Brazil). Lastly, the program could continue to southern Brazil, Paraguay, Uruguay and Argentina.

- 2) Along the south-east to north line, having the biological barrier in Panama, operations could be initiated in Uruguay leading north and west. Beginning at the latitude of the city of Buenos Aires in Argentina (the climactic and ecological conditions south of Buenos Aires do not favor the presence of the parasite), one would continue with Paraguay, the southern region of Brazil, the Andean countries, and end in the Amazonian sub-region.
- 3) Having the biological barrier in Panama, one could continue via the long coastal region of Colombia, Ecuador, Peru and Bolivia, taking the zone between the Pacific Coast and the Andean Mountains and treating the Cordillera as a natural barrier, before reaching Chile, which is currently free of SWF. Afterwards, suppression and eradication work could be initiated at the level of Buenos Aires, in an east-west direction towards the Andean Mountains, by this means including Uruguay, Paraguay, southern Brazil, the Amazonian regions still endemic in Bolivia, Peru, Ecuador and Colombia, and continuing with Venezuela and the remaining Amazonian sub-region.
- 4) With the barrier of sterile flies in place in Panama, endemic countries in South America could identify which of their areas are naturally free of NWS, as well as their potential natural barriers that could provide the basis for the development of national strategic programs of control and the possible eradication of worm infection. They could also serve the objective of expanding those parasite-free areas sub-regionally, by means of establishing preventative measures and suppression of the disease.
- 5) The final option could be a combination of 1, 2, 3 and 4, but that strategy is only viable if the populations of NWS identified really are isolated, and their natural barriers genuinely free of infestation and covering a large area, and with quarantine procedures in place for free maintain. Furthermore, this strategy is dependent on the assistance and good will of governments and cattle producers who, in the final analysis, will determine the best or most immediate strategy to be utilized.

Strategic Goals

To have found an option for the eradication of SWF in Jamaica by 2012.

To carry out a diagnostic analysis of the epidemiological situation of the endemic countries in the Caribbean between 2012 and 2014, and establishing investment programs that will ensure the elimination of NWS in the region.

To design and implement eradication programs for NWS in Caribbean countries affected by NWS, for the period between 2015 and 2023.

During this time, between 2012 and 2021, to carry out the gathering of all information required in South America, regarding the incidence of populations of NWS and the disease; characterizing the life cycles for NWS in the distinct ecosystems of the region; the impact of NWS on the region's public health; and training veterinary physicians and entomologists based in the countries of this sub-region. Also, given the enormous extent of NWS in South America, a detailed analysis of the requirement for sterile insects is needed, alongside a study into the need to establish mobile or permanent production plants for sterile NWS flies in the more remote regions.

Beginning in 2021, everything related to the establishment of prevention and suppression procedures in the distinct countries of the sub-region where activities are to commence should be in place. The time it will take to eliminate the disease in this sub-region will depend on which of the strategies described above is adopted, the quality of groundwork for the physical infrastructure, the human and organizational resources (including the availability of sterile flies), the level of suppression of free populations of NWS prior to the application of the SIT, the availability of economic resources, the political will of governments and of private sectors in the countries involved, and on the advances achieved by implementation.

Implementation

The implementation of the Road Map will need to be characterized by the enthusiasm that has distinguished the planning and execution of the successful eradication programs for NWS carried out on the American Continent and in North Africa, and by the vision, creativity and dedication of new participants, which is essential in facing the challenge presented by the elimination of NWS infestation on the American Continent. In this context, the principle activities that need to be carried out are:

- Gather comments on the proposal for the Road Map and support for its execution from the heads of the veterinary services of the countries on the American Continent.
- Clearly establish that within the national context, the veterinary services of individual countries shall be responsible for implementation.
- On an international level, the FAO and the OIE should be assigned as coordinators of the follow-up work for the implementation of the Road Map, in conjunction with international organizations, such as COMEXA, COPEG, the Pan American Health Organization (PAHO)/WHO, the International regional Organization for Agriculture and Animal Health (OIRSA), the Inter-American Institute for Cooperation on Agriculture (IICA), the Caribbean Community and Common Market (CARICOM), the Permanent Veterinary Committee of the Southern Cone (CVP) of the Southern Agricultural Council for Agriculture and Livestock (Consejo Agropecuario del Sur - CAS), the Community Andean

Nations (CAN), and the North American Animal Health Committee (NAAHC) belonging to the GF-TADs.

- Technical operational assistance and training should be given by: the Mexican American Commission for Screwworms Eradication and the Panama-United States Commission for Screwworms Eradication, as well as by the FAO, and by the joint program of the FAO and the International Atomic Energy Agency (IAEA) for the application of nuclear techniques to food and agriculture (which has its seat at the IAEA in Vienna, Austria).
- The details of basic and applied investigation in the various fields of the veterinary sciences and of entomology should be provided by the institutions and organizations specialized in the region, such as the United States Department of Agriculture (USDA), the Agricultural Research Service (ARS) of the USDA, the Brazilian Agricultural Research Corporation (EMBRAPA), National Institute for Technology in Agriculture of Argentina (INTA), etc., FAO/IAEA and those of other regions that are interested in assisting with the implementation of the Road Map.
- Regarding international political aid and negotiations for the establishment of modalities for international cooperation, those involved shall include, among others, the North American Free Trade Agreement (NAFTA), the Dominican Republic – Central America Free Trade Agreement (DR-CAFTA), the Caribbean Community and Common Market (CARICOM), the Community Andean Nations (CAN), and the Southern Common Market (MERCOSUR).
- Responsibility for related financing topics shall be shared, among others, between the World Bank (WB), the Inter-American Development Bank (IDB), the International Fund for Agricultural Development (IFAD), the European Union (EU), the United States Agency for International Development (USAID), and the Organization of American States (OAS).
- For the purpose of providing follow-up on progress made in the implementation of the present Road Map, bi-annual progress reports shall be written, whose preparation shall be the responsibility of the FAO and the OIE, and which shall be added to the regional page of the GF-TADs at <http://www.rlc.fao.org/es/prioridades/transfron/gftads/default.htm>

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(Original version in Spanish)