

# Phytosanitary Alert System (SAF) for Economically Significant Pests in Corn, Bean, Wheat, and Rice Production

- National Service for Agri-Food Health, Safety and Quality (SENASICA)
- National Institute for Forestry, Agricultural and Livestock Research (INIFAP). Bajío Experimental Field.

The Phytosanitary Alert System (SAF) is a collaborative effort between SENASICA and INIFAP that integrates climate, pest, and crop information to generate

alerts regarding potential pest and disease threats to strategic crops under the *Producción para el Bienestar* program, such as corn, beans, wheat, and rice.

The SAF operates nationwide with weekly state-level reports. It monitors eight primary pests:

## Corn

Fall armyworm  
(*Spodoptera frugiperda*)



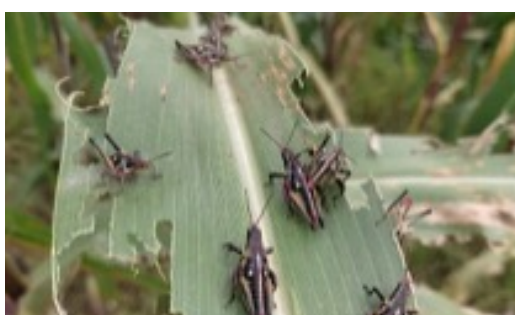
corn earworm (*Helicoverpa zea*)



white grub (*Phyllophaga* sp. y *Cyclocephala* sp.)



grasshopper (*Melanoplus* spp., *Sphenarium* spp., *Brachystola* sp. y *Taeniopoda* sp.).



## Beans

Mexican bean beetle  
(*Epilachna varivestis*)



bean rust (*Uromyces phaseoli*)



whitefly (*Bemisia tabaci*)



## Wheat

Wheat leaf rust  
(*Puccinia triticina*)



Through dynamic modeling tools, data analysis, and Geographic Information Systems (GIS), the system processes strategic elements at regional and national levels to estimate pest population dynamics, anticipating conditions that favor infestations and crop damage:

- Host phenology
- Pest presence reference
- Monitoring and sampling results
- Behavior of average temperature and precipitation
- Comparison of analogous years
- Seven-day forecast of favorable agroclimatic conditions

Comprehensive contribution:

- Probabilistic scenarios of the behavior of pest organisms.
- Prevention according to the susceptible phenology of the crop and its association with the pest.
- Estimates of the population fluctuation of the pest.
- Determination of areas with possible risk for the development of pests and diseases.
- Anticipated, locality-directed actionability.

This data integration contributes to preventive risk management and the reduction of negative impacts on production, avoiding economic losses to the sector while ensuring the well-being and food security of the population.

Access link to the Interactive Dashboard  
<https://dj.senasica.gob.mx/SAS/Home/SAF>