Sugarcane green grassy shoot disease in Vietnam

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Sugarcane diseases caused by phytoplasmas

- **Three in SE Asia**
  - Green grassy shoot disease (GSSD)
  - Grassy shoot disease (GSD)
  - White leaf disease (WLD)
- **GGSD:**
  - In epidemic proportions in Nghe An Province, Vietnam

GGSD vs GSD vs WLD

Symptoms: differences between diseases

- **GGSD**
  - No chlorosis on leaves / grassy tillers
- **GSD**
  - Some chlorosis of leaves / grassy tillers
- **WLD**
  - Variable chlorosis (mottling etc)
  - No grassy tillers

Green grassy shoot disease (GGSD)

- **First recognised in Thailand in the early 1990s**
- **Symptoms**
  - Profuse tillering
  - Narrow and green leaves (no chlorosis).
  - Poor yields
  - Poor ratoons: stool death common
- **Earliest symptoms: small tillers at the base of the mature stool**




Green grassy shoot





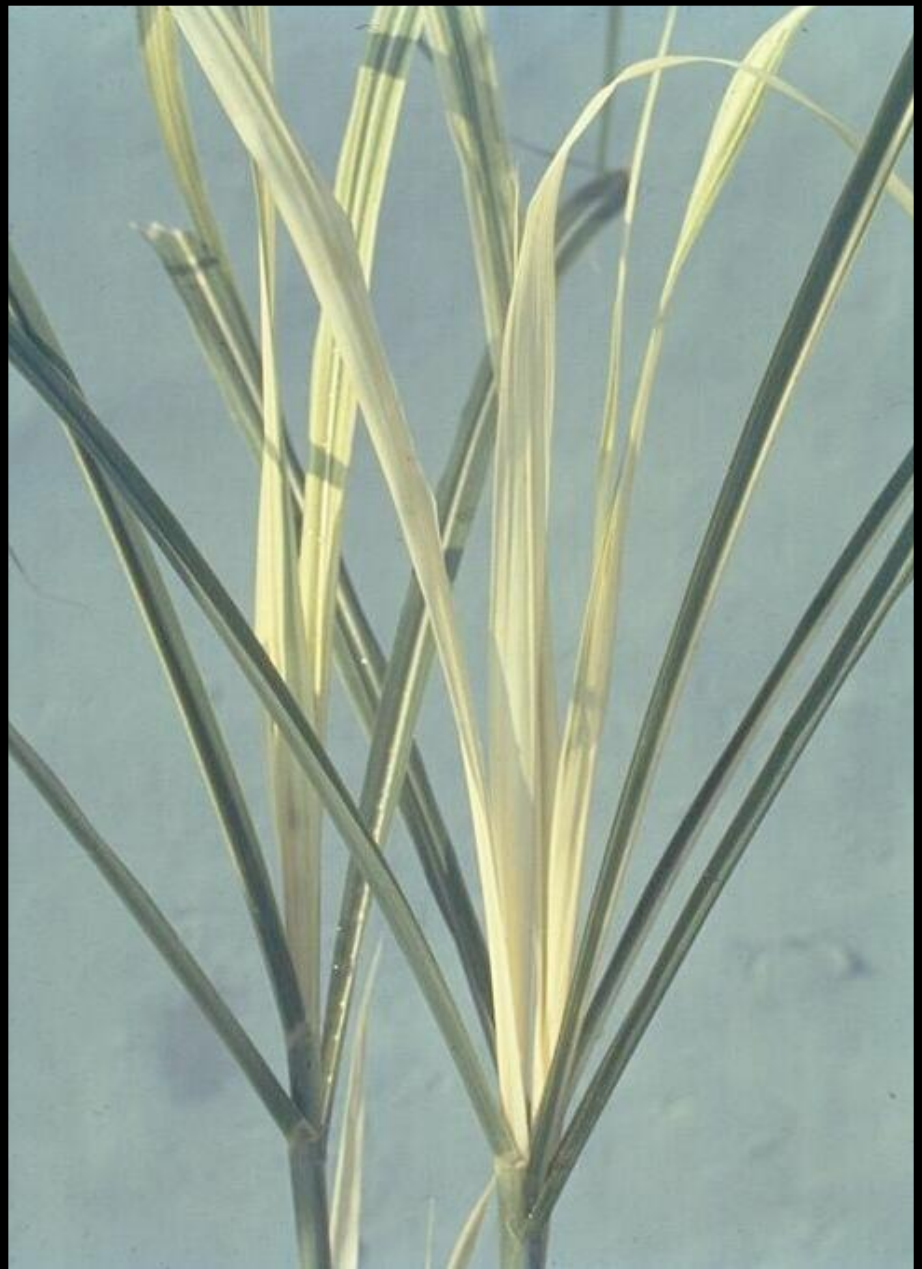
White leaves

More than 1 phytoplamsa?





Many small tillers (some white)





Obvious white leaves in young ratoons

Green grassy shoot disease

Current epidemic

- 6,000 ha badly affected
- Less severe disease scattered in other areas of the sugar factory area

Crop yields

- 80 tonnes cane /ha plant crop
- 15 t/ha first ratoon
- no yield second ratoon

Management: focussing on

- Termination of badly diseased crops
- Replanting with disease-free planting material

Green grassy shoot

- **Distribution**
  - Thailand, Vietnam
  - Epidemic developing in Nghe An Province: serious disease

- **Transmission**
  - diseased planting material
  - insect vector?!

Green grassy shoot disease

Control

- Disease-free planting material
- Hot water treatment: 50^0C, 2 hr
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- Resistant varieties
  - few are resistant
- Cool humid months - incidence is higher


ATSE CRAWFORD FUND WORKSHOP
GARCANE DISEASES
2009


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NGHỆ AN TATE & LYLE





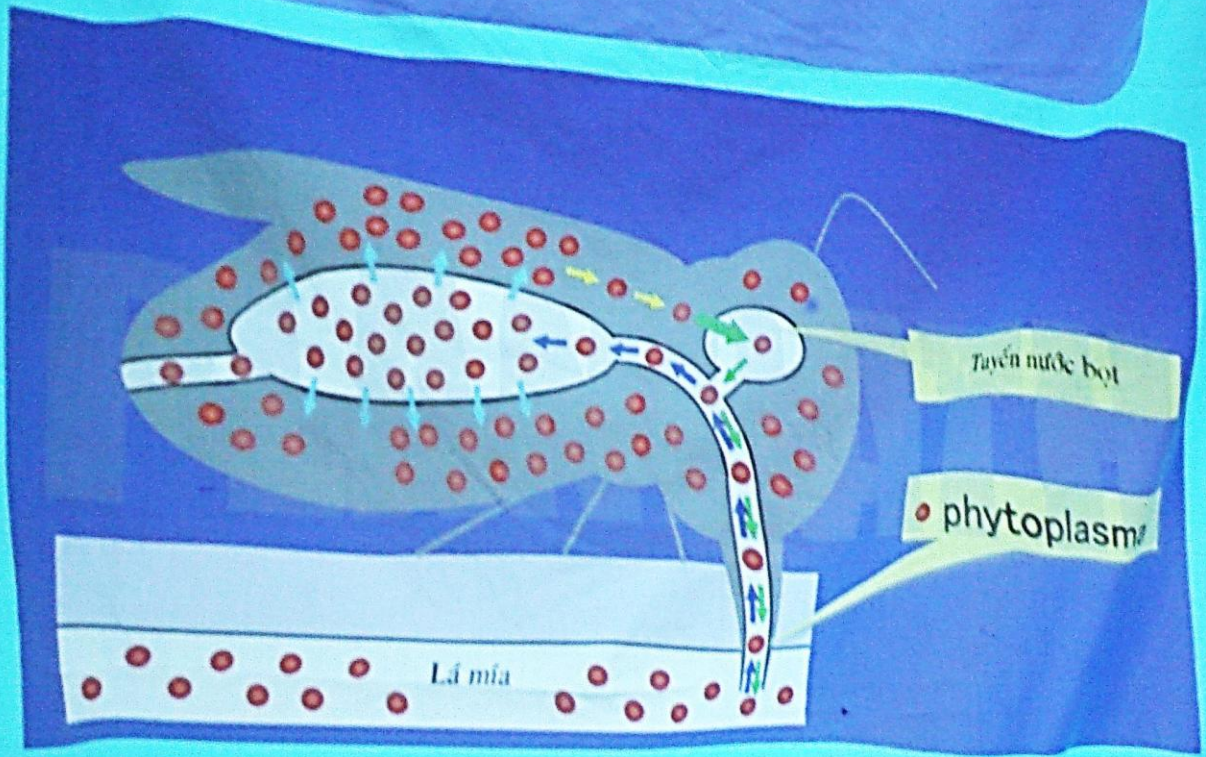

ĐẢNG CỘNG SẢN VIỆT NAM QUANG VINH MUÔN NĂM


GIẤY KHEN
GIẤY KHEN
BẰNG CÔNG NHẬN
ĐƠN VỊ VĂN HÓA
BAN TỔ CHỨC
CẤP ỦY - BAN CÁN SỰ XÓM TÂC
QUY CHẾ THỰC HIỆN DÂN CHỦ Ở XÃ
Thư Viện Của Bé


C
A
ĐỘI
ROC 10


Bé Khéo Tay

Rầy – Môi giới truyền bệnh




Liksh® Paints
37-X6
1997
HONDA

Green grassy shoot disease

Research needed

- **Vectors**

  Need to find out what vectors (planthoppers) transmit the disease

- **Resistant varieties**

  - **Important sugarcane disease control strategy**
  - **Need better resistance in commercial varieties**

Green grassy shoot disease

Research

- **Definitive assays**
  - To separate GGSD from GSD and WLD

- **Surveys**
  - To elucidate the occurrence and distribution of GGSD, GSD and WLD in Vietnam and surrounding countries

What happens from here?

Funding for

- **Disease control in Vietnam**
  - **Elimination of heavily diseased crops**
  - **Provision of disease-free plant sources**
- **Research**
  - **Elucidate the occurrence and distribution of GGSD, GSD and WLD in Vietnam and surrounding countries**
  - **Vector research**
  - **Resistant variety development**