

# WEST AFRICA REGIONAL PROGRAM

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# Survey of Storage Facilities & Ways to Reduce Insects

## 320 Farmers in 2 Regions of Niger



Grain in barrels, burlap or plastic bags, & storage houses

Storage facilities used by farmers:

1. Cylindrical granary with *Andropogon gayanus* &/or stalks & covered with grass - Maradi
2. Conical granary with bricks, covered with grass - Tahoua

Insects of sorghum & millet: *Ephestia kuehniella*  
*Tribolium castaneum*, *T. confusum*,  
*Trogoderma granarium*,  
*Rhyzopertha dominica*, &  
*Sitotroga cereallella*

13 botanicals for control

Sand, ash, salt, mixture of  
salt & ash reduce damage





# LES INSECTES NUISIBLES DU STOCK

Niamoye Yaro (IER) et Bonnie Pendleton (West Texas A&M University)

Les insectes peuvent occasionner 35-100 % de dégâts aux grains stockés.

Ces dégâts sont dûs soit aux attaques directes ou aux excréments et débris d'insectes, à l'odeur, les fils de tissage, la chaleur, ou la moisissure.

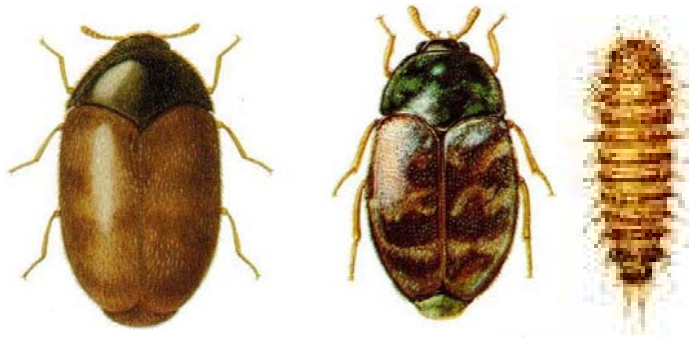


## Les Insectes Nuisibles Primaires qui S'attaquent aux Grains Entiers de Sorgho Stock

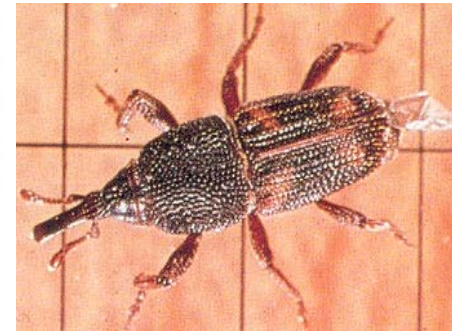
Le capucin des grains – *Rhyzopertha dominica*



Dermeste des grains – *Trogoderma granarium*



Les charançons du riz et du maïs – *Sitophilus granarius* et *Sitophilus zeamais*



Alucite des céréales – *Sitotroga cerealella*



## Les Arthropodes Nuisibles Secondaires qui Attaquent les Grains Perforés ou la Farine du Sorgho Stock

Ver de la farine – *Tribolium* spp.



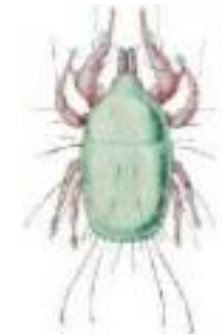
Pyrale de la farine – *Corcyra cephalonica*



La teigne du blé – *Plodia interpunctella*



L'acarien de la farine – *Acarus siro*



# Fungi from Stored Sorghum Grain in Mali

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*Aspergillus* sp.

*Colletotrichum* sp.

*Curvularia* sp.

*Fusarium* sp.

All species of fungi isolated from Grinkan sorghum

Only *Colletotrichum* & *Aspergillus* isolated from  
Niatchichama

Badly stored grain subject to contamination by  
fungi leading to poor grain germination

# W. AFRICA TECHNOLOGY TRANSFER PROJECTS

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## Identified technologies to transfer with impact

### 1. Dynamic farmers to grow improved varieties & sell to local & regional food & feed processors

Farmer entrepreneurs trained for seed & grain production & linked to end-users (farmers & markets). Storage buildings by farmers & project. Farmers identify & manage storage pests.

Mali, Niger, Nigeria, Burkina Faso

### 2. New processing technologies that include pre-gelatinized, instant flours, composite flour breads, & couscous from grits

Train and incubate entrepreneurs.

Senegal, Niger (Mali from Mali/USAID)

### 3. Farm adoption of *Striga*-resistant varieties for dolo

Burkina Faso, E. Mali