

INNOVATION and SUSTAINABILITY in TOBACCO SANITATION and PEST CONTROL

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pest control - fumigation services

DO WE NEED **SUSTAINABILITY** ?

- ✓ **COMPETITIVE ADVANTAGE**

healthy and quality of tobacco

- ✓ **COMPANY IMAGE ADVANTAGE**

less environmental impact

- brand equity risks

- + company credibility



OUR VISION OF **SUSTAIN**ABILITY

✓ **ENVIRONMENTAL** SUSTAINABILITY:
reduce **massive use** of pyrethroids & gasses

✓ **ECONOMIC** SUSTAINABILITY :
reduce **expenditure** & pest treatment
downtime

✓ **TOBACCO LEAF** SUSTAINABILITY :
preserve **tobacco quality & quantity**



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INNOVATION TO SUSTAINABILITY

SUSTAINABILITY a **NEED**, IN THREE STEPS

1. LOW TOXITICY PRODUCTS
2. SPECIFIC TREATMENTS, NOT MASSIVE
3. INTEGRATED PEST MANAGEMENT APPROACH

PRE.MO.S.T PEST MANAGEMENT

PREVENTION + **MO**NITORING + **S**YNERGETIC **T**TREATMENTS

INNOVATIVE:

- ✓ Sustainability-minded
- ✓ accordance with international guidelines
- ✓ accounting of pests' biology and country's seasons
- ✓ shaped on company's features
- ✓ only-focused actions

Small, cute and noxious: tobacco storage **pests**



Ephestia elutella : Tobacco Moth

- **Clever**: **diapauses** behaviour!
- **Slow infestation**
- **flue-cured and oriental** tobacco
- Damages **quantity** and **quality**:
making tobacco strongly bitter



Lasioderma serricorne : Cigarette Beetle

- **major pest** of cured tobacco,
- **Opportunistic**: **fast infestation**
- **high sugar/ low nicotine** tobacco
- Damage in **loss in weight** and
contamination of tobacco



POST-HARVEST TOBACCO PEST **PREVENTION**

CLEANING and **STORAGE** = key elements

Most **cost-effective** and **sustainable actions**:

- Incoming tobacco stored separately
- **eliminate tobacco debris and dust** = best pest habitats
- Use of heavy-duty **vacuum cleaning**, not blowing
- Waste frequently disposed of

→ should be **scheduled** and **methodical**



POST-HARVEST TOBACCO PEST **MONITORING**

Core element: *warning alarm, data collection and evaluation*

Trap monitoring rules



1. Processing area:
Black stripe trap



2. Warehouse:
monitoring station

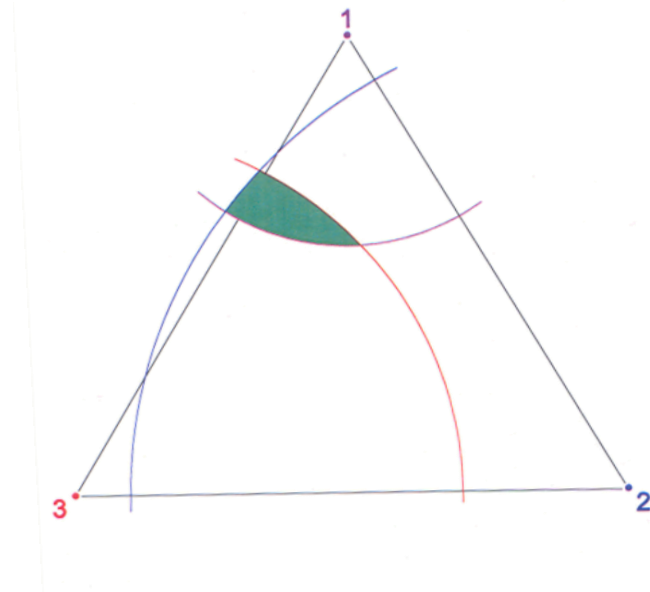
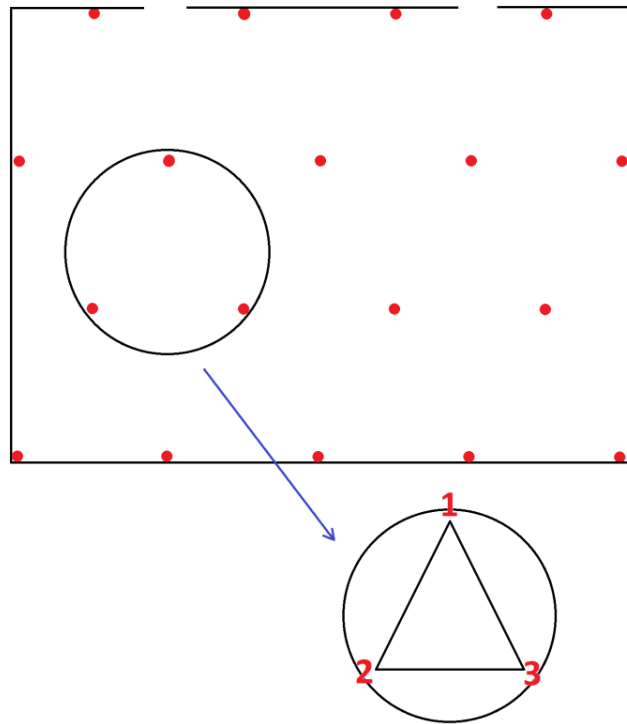
1. max 10 meters apart
2. **Pheromone lure monthly**
and after fogging
3. **Weekly visual inspection**
4. Historical monitoring report
5. **Single capture**



POST-HARVEST TOBACCO PEST **MONITORING**

Triangles monitoring up to - **50%** treatment reduction

↳ a method for identification of **INFESTATION SOURCES**



POST-HARVEST TOBACCO PEST **SYNERGETIC TREATMENT**

TOBACCO INFESTATION IN **PROCESSING AREA**:

- Inspection of the site
- **CLEANING** tobacco dust and residues
- Covering machinery parts in contact with tobacco
- First **FOGGING** treatment (using **low toxicity pyrethroids**)
- Second **FOGGING** treatment after 7 / 10 day form first one

POST-HARVEST TOBACCO PEST **TREATMENT**

IN WAREHOUSES:

SYNERGETIC FOGGING + FUMIGATION

1. Tobacco stocked fumigated
2. First fogging
3. Cleaning
4. Second fogging



FOGGING alone not eradicate infestations:

- **LOW TOXICITY PYRETHROIDS**
- **No effect on eggs** → does not prevent latent infestation
- Risk of resistant pest
- **Massive use** = contamination



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FUMIGATION TREATMENT WITH **PHOSPHINE**

Fumigation with **phosphine** is **sustainable** and widely used to eradicate 100% of infestation

- ✓ **Short down time**
- ✓ No specific sites
- ✓ No effect on quality
- ✓ **No impact** on tobacco leaf
proper seasoning
- ✓ **Most cost-efficient** treatment



CONTROLLED ATMOSPHERE PEST TREATMENT

Anoxic gases, Carbon dioxide [E290] or Nitrogen [E941]

- reduction of oxygen
- **specific vacuum chambers**
- Expensive and long down-time treatment
- Low environmental impact but **low cost-efficiency**



→ Good for **organic product** treatments

INNOVATION to SOUSTANAIBILITY

reach **SOUSTAINABILITY** ADVANTAGES

with **PRE.MO.S.T** PEST MANAGEMENT

1. **PRE**vention reducing infestation risks
2. **MO**nitoring to act in time
3. **Synergetic T**reatment to act in sustainable way

THANK YOU FOR YOUR ATTENTION

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