

## SANITATION STANDARDS

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A set of preventive actions the purpose of which is to prevent pests from penetrating and developing inside food company premises.

### SANITATION STANDARDS

Permanent and reliable pest control inside food warehouses and factories depends inevitably on a combination of curative and preventive measures.

The Sanitation Standards form a coherent system grouping together all the regulations governing preventive, i.e. prophylactic, actions. They form part of the G.M.P. (Good Manufacturing Practices). The purpose of these rules is, on the one hand, to prevent pests from entering and spreading inside premises and, on the other, to limit the potential ways which enable them to develop and proliferate.

## I. PREVENTING PENETRATION AND PROPAGATION INSIDE PREMISES

Pests get inside buildings via various goods that are brought in and through unprotected openings that lead onto the outside. Once they are inside they spread from one part of the premises to another through slits, cracks, holes and ducts.

The following procedures should be implemented :

### A Detection prior to entering the following products into premises :

- raw foodstuffs with special screening for those said to be of "high risk" such as all kinds of flour, dried fruit, dried vegetables ...
- wrapping and packaging materials, especially pallets
- means of transportation such as containers, trucks, rail wagons.

Detection can take several forms - visual checks, chemical analyses, physical controls.

### B Detection inside premises especially those parts hidden from production channels - vents, framing, hollow supports, underside of ovens ...

### C Pest-proofing of buildings

To obtain proper pest-proofing it must be noted that :

- an adult rat like the Norway rat can get through a 12 mm space e.g. between a door and the floor.
- an adult mouse like the domestic mouse can pass through chinks as little as 6 mm.
- a small gnat can get through a mosquito net mesh of anything over 1 mm. diameter.

Appropriate means must therefore be used to protect any opening leading onto the outside such as :

- liquid waste manholes
- basement air-vents and underfloor space
- surrounding walls at the point where they join up with ground and around pipeworks passing through them
- all entrance doors to buildings especially those used for loading and unloading goods
- windows

The list of examples given above is not exhaustive.

## D Partitioning by sector of activity

A pest that has managed to enter premises must be impeded from spreading from one sector to another. To do this, it is necessary to create zones with physical proofed partitioning for each activity by separating :

- storage in three distinct parts :
  - a) raw foodstuffs
  - b) non-food raw materials
  - c) finished products
- production and packaging
- social premises and technical workshops

## II DEVELOPMENT AND PROLIFERATION

Any pest that has succeeded in entering a building has two main concerns viz. finding available food and harbourage.

### FOOD

Refuse and dust form the main, most readily available source of food for pests most of which require very little daily intake like mice which consume 3 gr. per day and most adult insects which can survive a long time on a few organic scraps.

Cleaning operations and storage organisation need therefore to be codified on the following bases :

#### A Cleaning

Cleaning operations must be carried out subject to a written Code of Procedures divided into three parts :

- work stations
- machinery and production equipment (switch-off necessary for cleaning)
- building substructures (floors - walls - framework)

The criteria for analysis are the following :

- cataloguing of parts to be cleaned
- methods used (products and equipment)
- frequency of service
- staff carrying out the work
- follow up of operations

#### B Storage organisation

The type of organisation set out below enables a significant reduction in pollution risks from pests. As a result, treatment costs and losses in raw materials or finished goods will be cut significantly.

General rules to be applied :

- ensuring 40 to 50 cm. neutralized passageways along walls to allow detection, cleaning and treatment
- ensuring a 20 cm. space between the ground and the bottom of storage fittings such as shelves and racks, for the same reasons as above
- ensuring, in the case of prolonged storage, a turnover of products on pallets which provide a risk of contamination every month whenever the temperature rises above 20°C. with a sanitary inspection at each changeover
- providing hatches on the top part of silos and cells for the same reasons as in the first paragraph.

Special rules for particular foodstuffs :

#### Raw materials

- pulverulents (flour, semolina, milk powder) to be stored in silos with smooth inside walls and pneumatic conveyance systems
- air-conditioning ( $10^{\circ} \pm 2^{\circ}$ ) for the storage of products in danger of high risk pollution from pests such as dried fruit so as to halt or slow down their development process.

#### Finished products

- airtight premises assigned exclusively to storing these products
- ensuring there are no products returned by consignees on the same premises

#### HARBOURAGE

All pests need harbourage zones where they can hide during the day when the premises are being used. So what constitutes harbourage?

For a rodent it may be a disused duct, badly cased glass wool, an expansion joint with polystyrene or a pile of thrown out materials. For an insect - a crevice, a crack, the cavities of an insufficiently plastered parpen. The following measures must therefore be implemented :

#### A House-keeping

The rubbish and miscellaneous materials that accumulate along both the outside and the inside of walls must be removed quickly as they provide harbourage for pests. Furthermore, inspection and treatment of these areas are often difficult if not impossible for want of access.

## B Maintenance

Any industrial premises which are not well upkept quickly deteriorate, thus providing a vast increase in the number of possible harbourages for pests . They are in the form of :

- badly cased glass wool lagging
- cracks and crevices
- damaged wall coverings such as plaster, paint, tiling ...

Repairs must therefore be carried out at the first signs of deterioration and a permanent supervision of premises and fittings ensured.

To conclude, it is to be reminded that the purpose of the implementation of the Sanitation Standards is to restrict the penetration and development of pests by means of preventive actions but that these must be combined with curative measures to ensure their destruction in the event of accidental penetration. So the various aspects of the fight against pests need to be integrated into a foodstuff quality preservation plan which should be scheduled for instance over one year and periodically adapted according to how the situation evolves inside the premises and their environment, e.g. temperature, humidity, changes in manufacturing processes.

## LES STANDARDS DE SANITATION

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### Résumé

Dans les industries agro-alimentaires, le contrôle des nuisibles repose principalement sur la prophylaxie, c'est-à-dire des actions à caractère principalement préventif. Les actions curatives, telles que les traitements chimiques ou physiques, ne représentent pas plus de 10 à 20 % du total des moyens mis en oeuvre en pratique.

Ces mesures préventives, regroupées dans le cadre des Standards de Sanitation, ont pour objectif une limitation des possibilités de pénétration et de développement des nuisibles à l'intérieur des locaux et elles concernent les domaines suivants :

- Contrôle avant pénétration des marchandises : par examens visuels, échantillonnages et analyses physico-chimiques.

- Organisation du stockage : avec des séparations physiques pour les différentes matières premières et produits finis et une disposition rationnelle des produits stockés dans les locaux.

- Etanchéité : face à l'environnement extérieur et entre les différents secteurs d'activités à l'intérieur des locaux.

- Nettoyage et rangement : avec un Code écrit des procédures suivant trois axes: POSTE DE TRAVAIL, EQUIPEMENT DE PRODUCTION, INFRASTRUCTURES et quatre critères OU? QUI ? QUAND ? COMMENT ?

- Maintenance (entretien) avec un Code des Usages pour la tenue vestimentaire, la propreté corporelle et la circulation à l'intérieur des locaux.

L'application de ces STANDARDS DE SANITATION permet de maintenir en permanence le niveau des populations de nuisibles en dessous du seuil de risque d'altération de la QUALITE des DENREES dans les locaux de production et de stockage agro-alimentaire.