



Priorities for health and safety in the compound animal feed industry

Food Sheet No 12

Introduction

This sheet has important information for employers and employees in the compound animal feed industry. Your attention will be drawn to the aspects of the working environment which deserve special attention. The information in this sheet is based on an analysis of the accidents reported to HSE and local authorities by employers. The information is also based on HSE investigations. You should assess all the aspects discussed in this sheet carefully to make sure that adequate precautions are in place, and that they are in place permanently. Usually, once a risk is identified, it will be clear what the appropriate precaution is. If you need further guidance on a particular topic, please refer to the Useful information section.

The priorities

Table 1 lists the most common situations which cause accidents, in order of priority. The table shows, as does other reported experience, that it is important to focus on the following, as they cause about 75% of all injuries:

- (a) avoiding entry into silos;
- (b) safe systems for tipping trailers (to avoid being hit by a tailgate swinging free);
- (c) slips and trips;
- (d) handling - especially bags and heavy plant;
- (e) falls - especially safe sheeting of grain vehicles, safe access, ladder safety;
- (f) machinery - conveyors, mixers, mills, rotary valves, pelletisers and packing machines;
- (g) fire and explosion risks.

Occupational ill health

Because accident reports do not include occupational ill health, the tables cover only safety. But experience of the industry suggests the occupational health priorities are likely to be:

- (a) chronic ill health from manual handling, eg of bags and plant;
- (b) occupational lung disease from exposure to grain dust - careful assessment and control of

micro-ingredient mixing and addition is needed;

- (c) noise-induced hearing loss from noisy areas in a mill.

The risks compared with other industries

In 1991-92 the overall incidence rates, that is the number of injuries per 100 000 employees, were 137 for major injuries and 873 for injuries causing over a three day absence (O3D), totalling 1010 overall.

The industry has remained at the better end of the food industry as a whole, for major and O3D injury rates, and is even slightly better now than the O3D average rate for the manufacturing industry generally, which has an incidence rate of 1269. However, the industry had the worst incidence rate for fatal injuries, at seven times the average, reporting five fatalities in 1989-90. This has now improved, with none reported since then. But clearly the potential for fatalities still exists unless particular care continues to be taken with the avoidance of silo entry, and trailer discharge.

Scope of this guidance

This guidance uses reports from employers whose main activity is coded to Standard Industrial Classification (1980) 4221.

This classification covers the preparation of compound animal food, for example in provender feed mills, and includes the preparation of protein concentrates and other mixtures which are added to cereal bases.

The figures used are from 1991-92, the last year for which employment tables are available. But the figures are still typical of recent years, and the analysis of the cause of accidents covered a three year period.

The analysis covers only injuries reported to employees. On and off site visitors, contractors and the self-employed were excluded, but it is likely that these injuries number only a few.

Safety checklist

This checklist includes the most common situations which cause accidents, as well as a list of preventative measures.

Table 1

<i>Cause</i>	<i>Relative importance</i>	<i>Significant factors</i>
Slips and trips	25% of all reported injuries, 20% of them being major injuries. Slips/trips caused 30% of all such majors, compared to 16% of total injuries.	56% were from slippery conditions, 25% from obstructions and 18% from uneven surfaces.
Handling	19% of all injuries.	58% from heavy loads (eg bags and plant), 24% from sharp loads and 17% from awkward ones.
Falls	17% of all injuries. 34% of falls resulted in a major injury and falls caused 33% of all majors - twice that of industry generally.	29% were from ladders, 23% from vehicles and 19% from sheeting (probably mainly on vehicles), 6% from stairs. Other causes included access around plant, bins and stacks.
Struck by falling and moving articles (including use of hand tools)	11% of all injuries.	70% were from falling/moving articles suggesting stacking and storing, and 20% from hand tools.
Striking against objects when moving	11% of all injuries.	66% involved striking against fixed objects.
Machinery	9% of all injuries. 37% of such injuries being major representing 18% of all majors.	Of those specified, 35% were conveyors (eg auger and screw). Other priority plant appears to be hoists, rotary valves, mills, pelleting presses and packaging machinery.
Exposure	2%	50% each from splashes and release of substances from plant.
Transport	2%	66% involving lift trucks.
Electrical	2%	
Fire and explosion	1%	Especially involved: driers, mills and hot work on plant.

Slips

- (a) take measures to avoid spillage and leakages to floor;
- (b) take measures to contain unavoidable spillages, so they do not contaminate the floor;
- (c) take measures to clear up spillages and dry the floor immediately;
- (d) clean effectively, preferably out of hours;
- (e) dry wet floors after cleaning.

Trips

- (a) avoid obstructions in walkways and at workstations;
- (b) avoid uneven floors.

Handling

- (a) avoid heavy, sharp or awkward lifting and pulling movements;
- (b) eliminate or reduce manual bag handling and handling of heavy plant during maintenance;
- (c) where it is not reasonably practicable to mechanise handling, assess the factors leading to a risk and take the appropriate precaution, especially making sure that staff follow safe lifting techniques.

Struck by falling and moving objects

- (a) use secure, accessible storage for materials and products;
- (b) use appropriate methods of handling goods;
- (c) use appropriate selection and training in the use and maintenance of hand tools.

Falls

- (a) identify where access will be needed and arrange permanent, safe access;
- (b) check condition and use of ladders;
- (c) maintain stairs;
- (d) avoid the need for access onto the top of bulk vehicles (use a ground based sheeting system).

Striking against objects

- (a) avoid crowded conditions.

Machinery

- (a) check hazards and guarding, especially at conveyors, mills, mixers, rotary valves, pelleting presses and packaging machinery.

Exposure to harmful substances

- (a) assess how substances can be used safely;
- (b) use lids on containers;
- (c) maintain plant to avoid leakages.

Useful information

1 *Essentials of health and safety at work* 1994 HSE Books ISBN 0 7176 0716 X

2 *A recipe for safety: Health and safety in the food industry* TOP 05 1994 HSE Book ISBN 0 7176 0911 1 (available in priced packs of five)

3 *Health and safety in retail and wholesale warehouses* HS(G)76 1992 HSE Books ISBN 0 11 885445 3

4 *An index to health and safety guidance in the food industry* FIS7 1996 HSE Books

5 *Responsible distribution* UKASTA (covers most risks)

6 *Slips and trips on the level: guidance for the food processing industry* HS(G)156 1996 HSE Books ISBN 0 7176 0832 8

7 *Manual handling: Solutions you can handle* HS(G)115 1994 HSE Books ISBN 0 7176 0693 7

8 *Fitment of mechanised sheeting systems to delivery vehicles* Members Circular 1588 UKASTA

9 *Code of Practice: Safe Tipping of Grain Trailers* UKASTA

10 *Sheeting and Unsheeting of tipper lorries* HS(G)148 1996 ISBN 0 7176 0888 3

11 *Safe use of ladders, step ladders and trestles* GS 31 1984 HSE Books ISBN 0 7176 1023 3

12 *Work on flat roofs: protection against falls* Construction Information Sheet No 21 1992 HSE Books

13 *Work on fragile roofs: protection against falls* Construction Information Sheet No 22 1992 HSE Books

14 *Short duration work on pitched roofs: protection against falls* Construction Information Sheet No 20 1992 HSE Books

15 *Guidelines for complying with COSHH in the animal feed industry* (including supplement on grain MEL) 1990 UKASTA

16 *Safety in working with lift trucks* HS(G)6 1992 HSE Books ISBN 0 11 886395 9

17 *Workplace transport safety* HS(G)136 1995 HSE Books ISBN 0 7176 0935 9

18 *Safe handling of combustible dusts* HS(G)103 1994 HSE Books ISBN 0 7176 0725 9

19 *Dust explosions in the food industry* FIS2 1992 HSE Books

20 *Health and safety in flour mills* (information on machinery) NABIM Tel: 0171 493 2521

21 *Noise at work* Noise Guide No 1 *Legal duties of employers to prevent damage to hearing* Noise Guide No 2 *Legal duties of designers, manufacturers, importers and suppliers to prevent damage to hearing. The Noise at Work Regulations 1989* L3 1996 HSE Books ISBN 0 7176 0454 3

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HSE priced publications are also available from good booksellers.

For other enquiries ring HSE's InfoLine Tel: 0541 545500, or write to HSE's Information Centre, Broad Lane, Sheffield S3 7HQ.

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