



"OSH+ for the European Agriculture sector - Stimulating growth in rural areas through capacity building for providers (and beneficiaries) of occupational medicine and OSH services"



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OSH Prevention and Protection activities for the Agricultural sector



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Contents Overview

- Introduction
- Accident statistics
- Risk & Hazards within Agriculture
- Control methods
- Case study working examples
- Recommendations & Conclusions



Aim of Module

- General understanding of sector diversity : employment & type of work.
- An appreciation of the major risks faced across the sector.
- Understanding of appropriate strategy, tools & techniques to be implemented to control/reduce risks.



Learning Outcomes

- Improved understanding of agricultural sector
- Practical case studies used to select appropriate control measures

Sector Diversity



Family run, manual harvesting

Conglomerate automated



Sector Diversity



Technologically advanced: Radar, Icing facility

Local knowledge, small capacity



Sector Diversity



Solo mechanical felling & collection

Solo manual tree felling & collection



Sector Diversity



Family run small holding

Intense animal husbandry



Risks & Hazards

Manual Handling – lifting weights, repetitive movements



Vehicle movement



Use of machinery

Un-Guarded equipment



Climatic Conditions





Risks & Hazards

Fall from heights

Confined spaces



Working with animals



Chemical & Bio-Hazards



Awareness & Education



Risks & Hazards

Drowning



Lone working



Crushing/collapse



Contact with machinery





European Statistics

There has been a decline in agriculture across Europe, however with recent new members, it is expected that numbers and growth within the sector is likely. [5]

The sector has a wide spread of employees, from family members, transitory workforce and above average older employees.

Combined with a large workforce, increased risk exposure leaves the sector with a high accident rate.

Country	Agriculture Workers
United Kingdom	485,000
Romania	966,000
Bulgaria	142,000
Germany	719,000
Greece	667,000
France	630,000
Eire	158,000
Spain	1,08,000
European Average	410,000



- Recognised that there are 13 deaths per 100,000 – which is comparable to road deaths which is the largest public health issue for fatalities [5] within the EEC.
- Over 500 fatal deaths and 150,000 non fatal accidents annually. [7]
 - Transportation
 - Fall from heights
 - Struck by falling or moving object or machine
 - Drowning
 - Handling animals
 - Contact with machinery
 - Entrapment
 - electricity

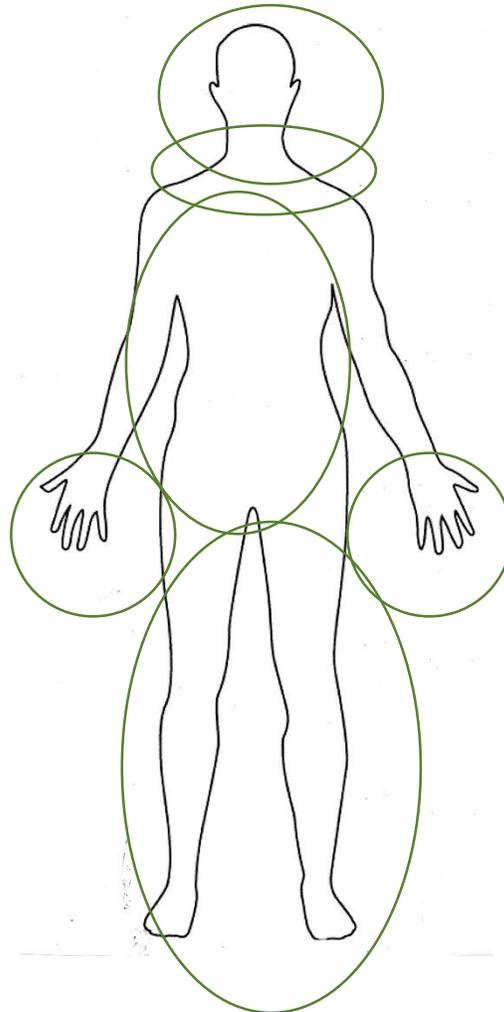
Accidents [7]

FATAL

NON FATAL

Wounds 32%

- 7% Head
- 2% Neck
- 11% Back
- 4% torso
- 74% other



- 10% Head
- 2% Neck
- 8% Back
- 6% torso
- 76% other



Dislocations & sprains 29%



Bone fractures 11%



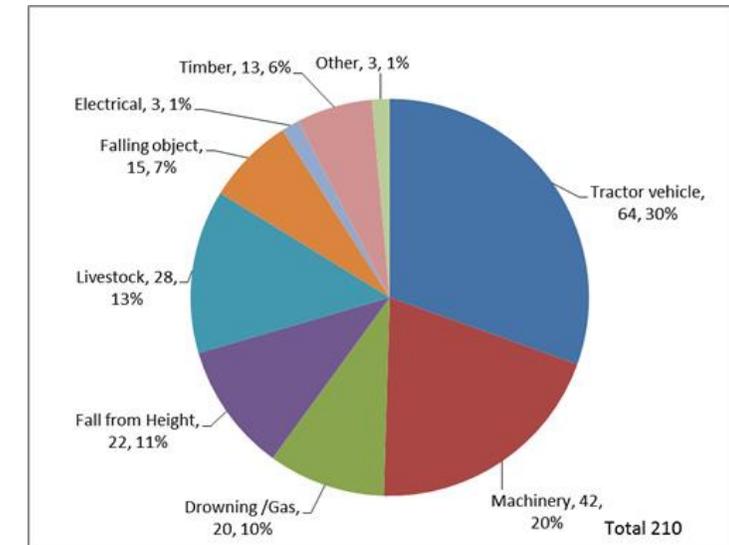
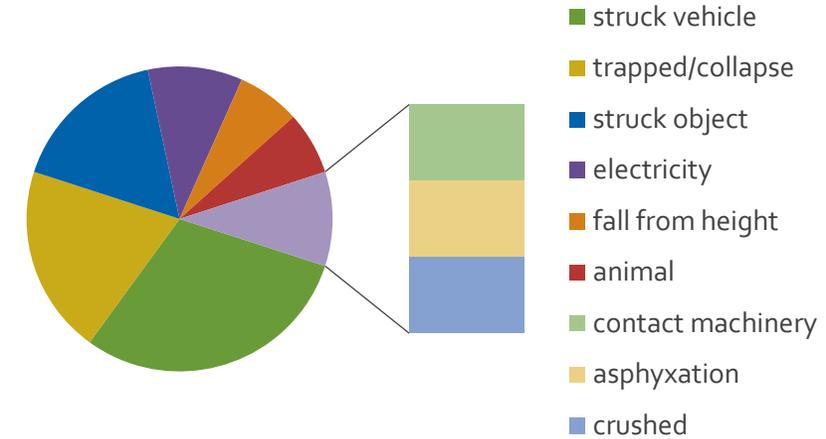
Other 27%



Statistical Information UK [2]

- In the UK, the HSE reported 30 fatal accidents during 2016-2017 period [1].
- moving vehicles accrued most fatalities.
- Industry has 18 times the number of fatalities to other industry sectors.
- 13,000 non fatal injuries, but unreported put at a further 10,000 injuries [4].
- This picture is also reflected within Eire where 210 fatal accidents across a 10year period [16]

fatalities





Longer term view of UK [3]

- The recorded fatality rate continues to decrease over 35 year period.
- Top 5 categories over 5 years are
 1. Struck by vehicle
 2. Injured by animal
 3. Fall from height
 4. Struck by object
 5. Contact with machinery

Prevention

- First step is to carry out a comprehensive risk assessment of operations [9,10,12].
 - Establish actual hazards
 - Established employee risks and training
 - Help prioritise corrective actions
- Establish common tasks and corrective actions to be taken.
 - High risk activities [silo/slurry work]
 - Lone working situations



Prevention

- Clearly establish relevant risk factors special to agriculture.
 - Age of employee's [family environment]
 - Emergency & recovery equipment and ways of working
 - Equipment, chemical exposure
- Establish methods to ensure effective training.
 - Equipment manufacturer material provided
 - New technology [on line] guidance
 - Consideration of employee backgrounds



Prevention

- Correct level of supervision, especially with high risk group with machinery which tends to have a high risk factor.
- Improved protective devices and treatments available, modern materials [sun cream, disinfectants, PPE].
- Use of modern equipment with improved safety systems; tractors with roll bars or good seat belts [survival increases to 38% when fitted [6].



Regulatory Considerations

- Continue to implement Improved regulatory frameworks. Develop improved education & training materials for the sector.[11]
- Continue to exploit new forms of communication channels [digital, social media] to reach rural populations. Target high risk groups with appropriate material.
- Improved education of workforce on availability and benefit of medical consultation to improve quality of life and extend career.
- Encourage manufacturers enforced compliance and mandatory training key element with new equipment.



Practical Examples

- Attached to the module are 3 case studies of accidents that have occurred across the agricultural industry within Europe.
- Consider the details listed in each example, using course information & personal insight. Propose appropriate control measure/tools to prevent adverse event recurring.
- The presentation highlights a number of these work examples.



Tree Felling

Activity Tasks

7m tall lime tree located within the sidewalk of public highway to be removed.
Contracting company employed, trained arborist employed.
Control measures put in place included traffic cones, and signage to keep work area clear.

Discussion regarding activity

Member of public injured whilst walking along sidewalk by falling tree Contractor prosecuted with financial fines totalling £6,200.

Source <http://www.hse.gov.uk/agriculture/experience/felling-trees.htm>



Fall from Leaking Roof

Activity Tasks

Leaking roof of cow shed

Farmer and 2 workers to complete task

Access to roof gained through ladders. Instructed by the farmer to walk along the roof sheet edges, where the trusses of the building were located.

Discussion regarding activity

Farmer and 1 employee fell through the roof. One of the timber purlin had decayed as a result of the leaking roof, causing the collapse of the roof.

Source <http://www.hse.gov.uk/agriculture/experience/falls-fragile.htm>



Use of Pesticides

Activity Tasks

150 farming households, with the used of herbicides [48%], fungicides [28%], and insecticides [24%] to help agricultural yields.

Only 27% of survey sample reported reduced level of pests within crops

Discussion regarding activity

Direct field observation, and answers to survey questionnaires of farms in Ekiti state in Nigeria

87% of chemicals used are classified as highly hazardous by WHO, and are either banned or restricted within developed farming countries.

95% of farmers received no formal training in the safe use and hazards of these chemicals use.

Eye irritation 91%, skin irritation 87%, nausea 86%, headache 83% and vomiting 58%

Source https://www.researchgate.net/publication/233676594_Health_and_environmental_impacts_of_pesticide_use_practices_A_case_study_of_farmers_in_Ekiti_State_Nigeria



Answers

- No site specific risk assessment carried out by contractor.
 - Inadequate physical protection put in place with no additional supervision.
 - Incorrect safe working practice adopted, tree should have been sectionally removed
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- Inadequate protective equipment available – no hand rails, crawl boards, ladder not tied to building. Use of fall netting and fall arrest equipment
 - No visual inspection of building and subsequent assessment of risk – potential for use of modern technology today with digital photography/remote control drone
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- Stricter enforcement of existing chemicals required
 - Formal training on the correct use and application of chemicals
 - Formal training on control/handling methods



Case Studies : Possibilities

- Automated warehousing system with robotic pallet location & selection.

<https://www.youtube.com/watch?v=6f1ub43B6bc>

- Organisational restrictions with pedestrian traffic no authorised access to warehouse locations.
- Controlled access material transfer points between FLT and pedestrian material movement



Case Studies : Possibilities

- Movement detection sensors fitted to FLT. Audio and visual alarm/signals fitted to FLT
- Driver selection criteria [driving license, mature outlook, sobriety, good sensory perception, adherence to procedures]



Summary & Conclusions

- Health and safety challenges within the agricultural industry are many.
- High risk activities, with vulnerable employee groups, and 24hour work environments present unique risks.
- Need to look towards central governments to continue to develop legislative framework improvements to drive interested parties to make improvements.



Summary & Conclusions

- The industry needs to keep a focus on public safety aspects of their operations, whilst making improvements to safety performance.
- Introduction of new technology and improved awareness are key to improved safety across European farming.
- Training programs best delivered in simple formats easy to understand [K.I.S.S].



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