

Bird management in grain storage facilities

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Abstract. Throughout history, grain storers have struggled with the impact of unwanted organisms on grain, storage facilities and finished food products. Bird pests — native and exotic — are one such group of organisms. Pest birds can affect grain and food and grain facilities and processing in several ways. These include physical damage, grain contamination, occupational health and safety risks such as spread of disease, respiratory problems and other illnesses, and finally damage to buildings, machinery and vehicles.

There are a number of simple concepts that must be recognised in order to manage bird populations. These relate to the behavioural characteristics of individual and flocking pest birds. ‘Bird pressure’ is a methodology by which the behaviour and commitment of birds to a site can be understood. The level of pressure on a site is classified and appropriate mitigation techniques are applied. Techniques that can be used to manage populations include physical exclusion devices and deterrents to minimise or eliminate bird–grain interaction.

Introduction

Increasingly, exotic and native pest birds are inflicting high levels of pressure on the supply chain of the grain industry. The increasing demands for, and implementation of, food safety requirements under the guidelines of hazard analysis and critical control points (HACCP) and other auditing programs will see the need for increased awareness and management programs to control pest bird populations throughout Australia. Pest bird species also have a significant impact on the occupational health and safety (OH&S) of staff and visitors at sites where they are present. Instances where disease and illnesses have been transmitted directly or indirectly to humans are well documented.

Bird species that affect grain-storage facilities are predominately the same pest species that have been found to cause problems in domestic and commercial structures in urban areas. The dominant bird pest species include pigeons, starlings, mynahs and sparrows. There are, however, significant differences between rural and urban situations. One major variation is the nature of the physical structures involved, and it is these that determine the most appropriate mitigation methods. In the urban setting, bird control is focused around domestic homes, retail centres, major buildings, factories and food processing and manufacturing facilities. In the grain storage area, structures requiring attention include manufacturing facilities, silos, trucks, machinery and open fields. An additional problem with grain facilities is the huge quantity of produce in a single location and the great variety of food stored there. In consequence, both a range

of species and large pest bird populations are likely to be attracted to a site, resulting in huge problems.

As well as pigeons, starlings, mynahs and sparrows, native cockatoo species present one of the greatest challenges to stored grain protection. In the natural environment, cockatoos spend much of their time foraging. In grain areas, however, cockatoos are able to consume their daily requirement of food very quickly. Consequently, not only do they eat and spoil the grain, but also they have free time during which to inflict physical damage to structures with their strong hooked beak and generally engage in nuisance behaviour.

The differences in structures, species and problems that are encountered between and within rural and urban areas mean that there is a great need for a structured methodology to deal with the problem of pest bird control. Without such a methodology, there is a risk that mistakes and flawed approaches will be repeated, that valuable commodities will be lost, and that adequate control of potential disease will not occur.

Bird pressure methodology

‘Bird pressure’ is an extensively applied and proven methodology for controlling pest birds in an urban setting. In most cases, the approach has been successful in both problem identification and the presentation of mitigation options. The basis of bird pressure relies firstly on the observation of bird behaviour. The best approach to mitigating pest bird problems that is then determined is based heavily upon the level of commitment that the individual, small group or flock has to the site. The level of commit-

ment to a site is very important, because it is largely this factor that will determine the birds' ability and desire to reclaim their former territory once a management system has been put in place. Bird pressure is a classification of the site and, in most cases, a grain storage facility offers extreme bird pressure. Classic situations of extreme bird pressure in grain-storage facilities include:

- buildings that offer overnight shelter
- buildings that offer relatively easy access to birds during some or all of the day and night
- beam type structures with platforms, struts and channels on which birds can nest and roost
- abundant food and water sources that are difficult to eliminate, clean or control
- machinery and other structures that offer warmth during cold evenings
- building roof tops and silos where birds can congregate to gain warmth from the sun in early morning and late afternoon, when emerging or heading to roosting sites, respectively
- elevated and protected areas to congregate waiting for food opportunities to occur.

When a facility offers a population of birds all the basic needs required, such as food, water and shelter, the flock size can grow rapidly. If left unchecked in a suitable climate, a pair of birds of a highly fecund species such as sparrows can give rise to a population of 2000 within 12–18 months.

Once the bird pressure has been determined, there is a host of control methods that can be applied. These include one or other, or combinations of, exclusion, physical deterrents, and acoustic, ultrasonic and scare devices. Other approaches include population reduction methods such as trapping, shooting, poisoning (avicides), irritants and taste deterrents. No single method is able to offer a suitable result. When used in combination, however, a series of methods may form a highly successful management program. Such a program is likely to incorporate requirements for facility operators to increase housekeeping regimes, make alterations so that there is reduced bird access to food, make regular observation of bird population size and behaviour, and remain constantly vigilant.

Additional information on pest bird mitigation devices can be found at <www.globeaustralia.com.au>.