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Jonathon Bainbridge
Simpsons Malt
Interview with the Production Manager



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LEADING PEST CONTROL SUPPORT

GRAIN STORE PEST PROTECTION

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Secure Your Store with our Experts



Hello everyone,

We all know how difficult the last twelve months of cancelled events have made it to keep up with the latest knowledge and best practice. We decided to host a webinar on Grain Store Pest Protection to advise the farming community on the most recent developments and to ensure that this year's harvest doesn't go to waste in store.



Thank you to everyone who attended the webinar, held in April. We had a fantastic turnout with 200 attendees from across the globe. I must also give thanks to our expert speakers, Ken Black from Bayer CropScience, Mark from Command Pest Control and Dan from Cotswolds Distillery. Farmer Tom joined us for our live Q & A session which had some great, debate provoking questions.

If you haven't watched the webinar yet or have just picked up a copy of this show guide in your local store, you can still claim the 2 free CPD points that BASIS allocated by scanning the QR code or by visiting the URL below. It's well worth a watch.

I hope that you keep this guide handy for harvest time later in the year.

For CPD points with this journal, please do visit www.lodi-uk.com/cpd or scan the QR code and we will forward them on to BASIS Professional Register.

Warm regards,

Roger



Grain Store Hygiene How important is it?



Views on grain store preparation are as varied as the farmers who hold them. While some people think it is a crucial step, others don't put much of an emphasis on it and some do not prepare their stores at all. Hopefully, this article will convince you to spend the time to get your grain store clean before inlet this year.

Where does grain storage preparation fit into the growing season jigsaw?

As a producer, you start your growing season with the seeds for your chosen crop. You might choose to attend manufacturers and agri-chemical demonstrations or events, like Cereals. After the seedbed has been prepared and the crop has become established, you might take on advice from agronomists to help nurture your crop with fertiliser through T1, T2 and T3. As you are confronted by crop disease, pests and weeds, you'll continue to input resources into the crop with sprays until it's time to get in the combine and harvest. It is easy to think that the growing season ends just after harvest. However, if the store isn't taken care of before the grain enters, a piece of the puzzle is missing. Securing the grain store against pests is never a popular job. It's a time-consuming task that occurs at a busy time so it can be hard to justify spending time on cleaning a dusty store.

Research from Colorado State University in 2010 showed that, "stored grain insects often cause as much loss after harvest as crop pests cause during the growing season." They also reasoned that "profits from growing and producing a crop should not be allowed to waste away in storage". All the hard work that has gone into producing your crop can come undone due to a lack of grain store preparation.



Missed the live webinar?
SCAN THE QR TO WATCH
THE FULL TRAINING GUIDE
ON GRAIN STORE PESTS

...continued **Grain Store Hygiene - How important is it?**

The financial impact of insect infestations can include:

- Physical loss of the grain by direct consumption by the pests (which can also include birds and rats)
- Contamination by their bodies
Just one insect body in a 1kg sample of grain can cause rejection. More and more end users are becoming more focused on insect contamination as some are allergenic.
- Encouragement of mould
A large concentration of insects in your store can lead to a higher risk of mould growth. This is due to the movement of the beetles creating heat which increases the interaction between the grains and the moisture in the store.
- Spoilage
- Loss of quality and associated premiums
- Rejection
- Increased costs due to reactive control

The pests that feed on grain in the store are totally different from the pests that affect it whilst it is growing in the field. Grain store insects are specially adapted to live in buildings. Grain can be preyed upon by primary, secondary and tertiary pests. Primary pests are called 'primary' because they cause the first damage to the grain. They bore into or eat the grain with their mouthparts, meaning that they are unsuitable for the end-user. An example of a primary pest is the Grain Weevil which bores into the kernel to lay its eggs inside, before sealing the hole back up and moving onto the next grain. The larvae eat the grain and emerge as adults, causing a snowball effect that damages more grains. Secondary pests, like the Red Rust Flour Beetle or the Saw Toothed Grain Beetle, then come along and feed on the grain which has been damaged by environmental factors like mould. They can also eat grains that been broken during harvest, e.g. if the combine harvester is on the wrong setting or if the conveyers are not full. Tertiary pests, like the Brown House Moth or the Indian Meal Moth, are linked to the presence of primary and secondary pests or moulds. They can further contaminate the grain.



All of these pests need a food source, a place to harbour and the correct temperature to live and reproduce. Reducing or eliminating these elements will reduce the risk of infestation.

Just because your grain store has been empty for a long time doesn't mean that they will have died off. At the LAMMA event in 2020, there was a sample of grain with grain weevils in a petri dish which I took home and placed in a dark, cabinet at a constant, low temperature.

After 15 months, the petri dish was placed on a windowsill to increase the temperature and there were 4 beetles still alive! This shows that the beetles that are dormant over long winters or through cold weather can re-emerge as the conditions improve.

Early Grain Store Preparation is Key



Ideally, you should clean 6 to 8 weeks before harvest. To do a thorough cleaning is to remove all the dust & debris from inside the shed. Pay attention to ledges, steelwork, the perlings and any cupboards e.g electrical cupboards. You cannot be too thorough when you are cleaning. Although a dustpan and brush can get rid of visible dust, using an airline will get into the cracks, crevices & hard to reach areas and blow the insects and dirt out. Dispose of the dust and debris as quickly as possible. Leaving the vacuum in the store can lead to processions of insects walking back out the hose! Clean all of the equipment, including the combine harvester, the drier and handling equipment – anything that might have the ability to harbour insects. Where possible, ensure there are no leaks in the roof and repair any cracks or crevices that might be in the roof. This might be more difficult in older stores, but the more you can do, the better.

The earlier you can clean your store, the earlier you can monitor for insect activity. There are sticky pads on the market which have pheromones that can attract the insects to them. If you have had historical infestations, you might decide to use sprays, such as K-Obiol, and smokes, to treat the store pre-emptively. If you have not seen any insect activity, you might not need to use an insecticide treatment.

It is prudent to proof against larger pests, like rodents and birds. Birds and rodents can carry insects between stores. Other insects are capable of walking quite large distances between sheds on the farm. Transport, especially grain lorries with roll-over tops, are huge sources of infestations. If you don't have the time to clean the store yourself, you might want to consider involving a professional pest control company. Even the most thorough cleaning may not remove 100% of the pests present, particularly if there has been a heavy infestation.

The drying and cooling of the grain as it comes into the store is crucial. Most insects breed between the 25°C and 32°C, but they can't breed at temperatures below 15°C (grain weevils can breed down to 12°C). Between 5 and 15°C, the insects will enter a dormant state. Below 5°C, the insects won't feed and will die. You should aim for less than 15% moisture and a temperature of less than 15°C. Closely monitor the temperatures throughout storage. If there is insect activity, you will see hotspots. The more activity there is, the hotter it will become. Ongoing monitoring is essential.

Treat Your Empty Grain Store Phobi Smoke Pro 90C+



Lodi's new product to ensure complete control of grain store pests

Farmers invest large amounts of capital, time, and effort into producing and harvesting their crop. The storage of the grain post-harvest is part of that dedicated process. The ability to secure grain stores and prevent loss of yield is a key part of crop management, as it enables farmers to retain stock and watch global fluctuations of grain prices in order to ultimately sell when prices are high. Typically, selling feed wheat in November will attract a £4/tonne premium over the harvest price and selling in May will give a further £7/tonne. Some farmers may choose to store their grain for up to 12 months. Between 2019 and 2020, the UK's wheat yield fell by 37.5%. But as prices keep rising, with a sharp rise in grain price at the start of the month, it is more important than ever to protect your crops in store. Worldwide, up to 60% of grain can be lost during storage but this can be as low as 1% with the right store and a good pre- and post-harvest routine. Grain store pests can be a source of grain loss in storage. Insect damage to stored crops is a curse that many arable farmers know all too well.



When treating a grain store, it's important to use different methods of disinfection to ensure that the maximum level of control has been achieved. Sweeping and

gathering the dust from the grain store is only the first step. Consider a sprayable insecticide and a smoke. These two combined form parts of a successful treatment plan, for full and targeted control of all grain store pests.

Spray the fabric of the building with K-Obiol EC or another grain protectant which will help to control any grain store pests that may be present. K-Obiol EC is an emulsifiable concentrate based on the Pyrethroid and Deltamethrin. It can help to control all stored product insects known to infest grains and pulses for up to 2 months.

Once the inside of the building is covered, we recommend using a smoke disinfectant, such as Lodi's Phobi Smoke Pro 90C+. Smoke insecticides help to target the nooks, crannies and hard to reach areas of the grain store where the spray can't reach, including machinery and equipment. Phobi Smoke Pro 90C+ is simple to use and 100% effective against a wide range of pests, including Grain Weevils & Saw-Toothed Grain Beetles. Simply light the wick and leave the smoke to work its way through the entire building. Each tin contains enough product to cover 600 cubic metres. If the grain store is over 600m³, use more smoke generators until you have the correct coverage. This can be done any time in between cleaning and the inlet.



It's so important to get the disinfection right to ensure that your store is ready for your grain. Here are our tips for the best practise for using smoke insecticides:

- Before you start to fumigate, make sure you have shut and sealed any doors and drawn any shutters apart from the exit.
- Shake all the generators to loosen the powder inside.
- Place the generators on a fully heatproof surface.
- If you are using multiple smoke generators, make sure you light the generator furthest away from the exit first and work towards the exit. You also need to make sure that all of your tins of Phobi Smoke Pro 90C+ are prepped and ready before you light the first one.
- Leave the store sealed overnight for the best result and then open the doors to air it for a few hours.



*Farmer Tom Tests Out
Phobi Smoke Pro 90C+*
**Scan the QR to watch &
find out how it works!**



Managing Grain Store Pests



Mark Ward
Command Pest Control



Controlling rodents and insects in your grain store

Key Pests to Control In and Around Grain Stores

- Rats and Mice
- Birds, like feral pigeons, wood pigeons and collared doves. These days we are also seeing a lot of racing pigeons as well.
- Stored product insects
- Grain Mites

Buildings & Maintenance to Proof Against Pests

Building proofing is essential to keep rodents and birds out as they can exploit holes in the fabric of the building. In past years, it was possible to control these intruders just with toxic substances, but now that is no longer possible, it is crucial to proof your stores. Use wire mesh and fill any holes on the ground, protect cabling with an anti-rodent spray or expanding foam and physical barriers such as metal baffles and casings, and put rat blockers in drainage pipes. Attaching brush strips to the bottom of doors can help to keep rodents from coming under the doors and into the building. Outside the store, cut back any trees or brambles that are too close to the store and trim any undergrowth to stop them from being able to hide there. If you have overfilled your store and there is some spillage out of the back, make sure to clean that up quickly. Some people dig a barrier around the store and put a plastic membrane in it. This is very unattractive for rodents to start digging through.

Cleaning and Hygiene in the Store

It's a good idea to get a plan together. There is only a short window of opportunity to reflect on any issues you had last year and rectify them. Time moves quickly and before you know it, you'll be filling the store again and will miss the chance to get things right! Cleaning is critical. Many people prefer to carry out their own cleaning rather than getting a professional company in. Cleaning really does mean 'top to bottom'. The roof, steelwork, perlings, electrical cupboards, inside the ducting, the wind tunnel all need to be made spotless. Brushing alone will not remove all of the dust and potential insects that are sitting inside any cracks and crevices. You need an airline and a compressor. Our operatives would blow the grain store down from the apex of the roof to the eaves, the grain wall and any cavities. Don't forget behind the grain walls. Once you've vacuumed out the dust, you must take the sweepings and put them well away from the store. If you don't, you'll soon have the insects walking straight back in.

Empty Grain Store Treatments with Insecticides

Once the grain store has been fully and thoroughly cleaned, you need to take every opportunity to stop insects breeding in the store. Grain store pests can live a very long time without food. When you clear the store out, they will climb up into the roof space and wait for next harvest to come around. Insecticidal treatments give good protection and should be carried out a few weeks before the grain comes into store. Using an insecticidal spray, like K-Obiol, with a long residual will give you maximum protection as it lengths the time that the insects have to come into contact with the active ingredient. Professional spraying equipment can shoot a jet of insecticide a few

metres vertically so it gets into the roof spaces effectively. Product can also be fogged or misted. It is now possible to use organic certified insecticides. Due to the growing number of organic stores, we have introduced this service and even keep the equipment separate to avoid cross contamination. After the treatment is completed, a professional pest control company will give you a certificate which can be put in your records for any assessments e.g. Red Tractor.



How to Monitor your Grain Store and Maintain a Pest-free

Environment for Long-Term Storage Monitoring should start as soon as the grain comes into store. Personally, I think sieving is one of the best ways of looking at insects in grain. Grain is often pushed up into high piles and insects will try to reach the highest point. With a sieve in hand, you should walk over the top of the grain and take large samples. This will quickly tell you if you have any insects present. It's important that you warm insects that you catch in cold weather so that you can bring them out of their dormant state and check that they are alive. As you walk over the grain, if you pass any areas that are firm underfoot, you should take a special interest in these as this is where the insects are most likely to be. With a good set of sieves, you will know if there are insects in the grain – before you send it off! This will reduce the cost involved with rejection and will lower your expectations. I find that pitfall traps are a great piece of kit. The best way to use them is to put them just under the surface of the grain. If the lip is above the surface of the grain, the insects have a difficult job to get up and over – and into the trap! Be careful to place a good marker over the top of them so that they aren't scooped up in a load. It is recommended that you use 1 pitfall trap per 100 tonnes of grain in the store. Do make sure that they are well spaced throughout the store. If you do have a history of infestations, I would recommend using probe traps as well. You can push probe traps into the grain further (around 2 feet) which means that you aren't reliant on the surface movement of insects for your data. This will give you a truer picture of your insect problem.

Grain Store Cooling is One Way of Avoiding Infestations

Weekly monitoring of the temperate should have alerted you if the temperature in the shed has become higher than normal. If the temperature of the whole store has increased, efforts should be made the cool it down with fans. However, as Ken mentioned, if there is concentrated insect activity within the store, you will see hotspots. You will be able to feel the heat against your boots. You might also see

green growth at the surface, which you must remove before cooling. Grain should be stored below 10°C but it can heat very quickly, taking the moisture levels up with it! While managing the temperature of the grain is important to manage the insect levels, it is also crucial for the end product. Once the temperature is over 45°C, the quality will deteriorate rapidly and will start to decompose. If there is any decomposition, it may get rejected even from an animal feed mill. If you do find a hotspot, I would suggest using screw-in spears. One tip to help the spears cool the grain more effectively is to take some plastic sheeting and Sellotape it around the base of the spear and spread it over the heap. This will draw in warm air from a much larger area. If you are lucky enough to have a Sinar GrainSpear, it's important to do the moisture sample first as it has an instant result and then move onto the temperature which takes longer. Although you can get a rapid temperate, it is more important to be accurate than fast.

Professional Fumigation is the Last Resort

All of these steps should dramatically reduce the chances of your grain getting an infestation of grain store pests, but it's not always 100%. If your grain does still become infected, you can fumigate it to eradicate all the insects that are inside it. It's a very professional service, and all of the staff who carry out fumigation have to carry out additional training as it's a dangerous process. When they arrive on your farm, the fumigator will assess your store and carry out a risk assessment. We would use aluminium phosphide which will kill all kinds of insect life in the store. We can do this either as a blanket, a belt or a plate in commodities. We then insulate the grain with a plastic sheet to keep the gas inside for a period of 14 days. We set up a 5 metre exclusion zone outside of the grain which we lock and take the keys too – to prevent any 'quick trips' into the store! After 14 days, the grain is inspected and any gas residues are removed. Once we've sieved the grain and made sure there are no living insects in there, we will provide a Post Fumigation Gas Clearance Certificate. You should photocopy this and fasten a copy to every grain passport for each grain lorry that leaves the farm. This will reduce the likelihood of the grain being rejected if insects are spotted as it will be clear that they have been killed by fumigation, rather than contaminating the rest of their grain.

Controlling Rats in your Grain Store

Times have certainly changed since I started Command 35 years ago. One of my first customers asked me how many rat droppings it is acceptable to have in a tonne of grain! Of course, nowadays, we know that no pests are acceptable in a food commodity and rejections can be made. The number one pest that attacks grain are rodents – namely rats and mice. As well as grain rejection, the rodents may cause you to fail audits. They can cause damage to buildings which might require costly rebuilds. They are also known to chew through wires and cause fires. Their chewing and burrowing behaviours can damage to any stock or equipment inside the store, like combine harvesters. Disease can be passed to humans and other domesticated animals, such as cats and dogs. They can pose a health risk to livestock, especially when rat urine enters

the watercourse. This can affect the animals' fertility. Rats move seasonally. Around the 3rd week in September, when the weather starts to turn colder, the nights draw in and the grain is in store, we see a mass migration of rats and mice onto farms. Nowadays, after harvest, the stubble is quickly turned for early drilling so the rodent's food source in the field diminishes quickly and they look towards buildings. This is when you will begin to see them around your farm. The tell-tale signs of rodents include rat runs and chew marks. The rodents' incisor teeth continually grow so they gnaw on objects like pipes, wood and wiring cables to wear them down. It's important to monitor the grain to monitor for the presence of rats and mice. Signs of rodents in the grain store include footprints in the grain.

Using Rodenticides Effectively

Once activity is noted, toxic bait should be used, but when control is achieved, go back to monitoring. Although rodents tend to be a seasonal problem, monitoring should be done all year round. Traps can also be used, however live traps should be checked daily and records need to be kept. Toxic bait can be inside the grain store, provided that it is a non-spill bait and is not near to stored grain.

How to Report to Comply with Assurance Schemes

Records your preventative measures, the pests that you have seen and what measures you are taking to control them, including the chemicals. If you use baiting around the site, it's important to have a baiting plan so that every bait box and trap is recorded. Every time that you do a 'routine' treatment (e.g. putting bait down) it's important to fill a report out with the date, who did it, the bait that was used and the ingredients. You should have MSDS (safety data) sheets within the folder so that everyone knows exactly which chemicals are being used. Competence must be shown – a certificate of confidence or qualifications – to prove that the people carrying out the treatment have sufficient training to use the products safely and effectively.

Farm Assurance Standards to Comply With

You may be a member of TASCC (Trade Assurance Scheme for Combinable Crops), Red Tractor Combinable Crops Scheme or FEMAS (Feed Materials Assurance Scheme). Virtually every bit of stored grain is assessed to some kind of assurance standard.

For more than 35 years Command Pest Control Ltd has been providing agricultural pest control services, specialising in Rodent Control, Grain Care and Fumigation services, across the UK.



The Grain Pests Expert Q&A



With real questions put to the webinar attendees:

Roger (Lodi UK), Mark (Command), Ken (Bayer), Farmer Tom (Farmer Time)

During our webinar, our attendees were encouraged to send in their questions for our experts. We had so many questions and such insightful answers that the Lodi team has had to cut them down in order to fit them into one page! If you do want to watch the whole Q&A session, go to the inside cover and scan the QR code to go to the video.

How important is it to clean down roof spaces, joists etc?

Mark: Well, I would say it is critical. Once you start using an airline in the grain store and you see what comes down off the roof, then you realise how important it is! You might look from the ground and think that it looks clean but once you start blowing, you'll realise that it's critical.

Ken: Just to add to that, it can be the case that the walls, floor and ledges are clean, but the roof spaces, trusses and rafters are left. Heat rises as we know, and insects will harbour in the roof as it is warmer.

If I apply K-Obiol or another grain protectant, how long do I have to wait before I put grain in store?

Ken: I'm assuming that this question is about spraying the fabric of the building. You could put it in as soon as it's dry, but you are defeating the object of doing the cleaning and the treatment. K-Obiol has a residual of 2 months on the structure of buildings. The earlier you can get it onto buildings, the more chance you have of catching the insects as it goes through their life cycle. Mark mentioned that grain weevils live in grain. They spend around 70% of their life cycle in the grain and only emerge as adults. It's only when they emerge that they come into contact with insecticides.

Can I use an insecticide on the building and also on the stored grain?

Ken: Yes is the answer. Products like K-Obiol can be used on the fabric of the building and for longer term protection can be applied to the grain as it enters the store in a ULV format, and it can provide protection for up to 12 months.

Tom, where do you get your advice from where it comes to grain store protection?

Tom: That's a great question. As with a lot of things on farm, you're trying to be an expert on everything and that's never going to work. At best we can consult the experts and make decisions as best as possible. We have a local pest control officer who has been really helpful, and I think having conversations with him has been really important. I think that often it can be easy for the agronomist or pest



controller to just go home and send you an email but just having a conversation with them is so so important.

With global warming changing the atmosphere, is it likely to have an impact on pest populations or a shift in pest varieties that prefer warmer weather?



Mark: Absolutely right! Bearing in mind that I've been doing this job for over 35 years, you could almost wake up and know what season you were in because it would be cold, warm or moderate. But the problem is now that we're not getting the frosts in the wintertime to knock out the pests and we're getting insect pests that used to be knocked out in the wintertime that are becoming prolific.

Ken: I would agree. The most obvious one in the news is the arrival of the Asian hornet or the marmorated stink bug which are both invasive species. The warmer weather is altering the ebbs and flows of insect life cycles and making the seasons less distinct.

Tom: There's a fair number of farmers who are changing their systems and moving towards reducing tillage. I know you said that rats come onto the farms as there is no food left for them in the field, do you think that with a no-till or min-till system that the migration of the rodents will change?

Mark: I don't think it makes any difference to the rats in the field as once the wheat and barley have been cut, they will move to root crops and will then move into buildings. It will make a huge difference to the mouse population. Uncultivated stubble can become completely infested with mice. We have got barn owls now in almost every farm and I think that this is a consequence of more food being out in the field but perhaps not as good for your grain store.

Farmer Tom FarmerTime.org



Farmer Tom
FarmerTime.org

How he's come to be teaching 21,000+ schoolchildren farming!

Tom is an arable and sheep farmer who farms with an emphasis on sustainability and stewardship. He was one of the stars of the TV show "Born Mucky", which aired last year on Quest, alongside Ally Hunter Blair and Ian Steele. In 2016, he set up the organisation FarmerTime which connects farmers and classrooms so the pupils can learn more about farming, the countryside and where their food comes from.

Lodi's Tony and Sam went to visit Farmer Tom on his farm near Cambridge. After a quick dip in the River Nene, Tony & Tom sat down for a pint.

Tony: So I'm intrigued. You were born on a farm. Were you always a farmer?

Tom: Well, farming is my fourth industry I've worked in. My family are all farmers - on both sides actually. Farming is a bit like being a sports coach or a priest or something. You don't just do it because you get rich and famous. You've got to love it. So, I worked in news and magazines, business consultancy and film sales. The tipping point was in my early 30s and I just kind of thought, 'I'm not learning anything anymore'. I love being outside but, it was a great step and I do love it.

Tony: So you grew up on a farm but then chose to go elsewhere?

Tom: Yeah, I was away for 14 or 15 years after university before I came back aged 35. It's a bit cliché but every day is different. You're riding on your own decisions for better or worse. You're stewarding the environment which is a real great responsibility. There's a real kind of slow thrill. Not like jumping out of a plane but there's a real enjoyment of planting things and making them grow.

Tony: 100%. And the last year for you has felt different but not maybe as different as it has for me, for example.

Tom: I feel a little bit facetious when I say that the three biggest impacts in the last year have been the weather, the world markets and Covid in that order. Because the weather has made a massive difference. There are big changes that we made on the farm due to

Covid. We're very careful in terms of distancing and that kind of thing. But that is small fry compared to the devastation of two wet winters or a wet harvest like last year.

Tony: I've got no idea about social media. What started you off doing it? Was it your time at Universal or was it your partner?

Tom: No no! I've got Facebook, Twitter, Instagram and YouTube a little bit. I think people really want to know farmers and I think farmers really don't realise that. We've been doing FarmerTime for 4 or 5 years now and we've got 700 farmers signed up. That's 21,000 British schoolchildren who do a video call once a fortnight to their farmer. It's the same farmer every two weeks so they get to know them and trust them.

Tony: You're more used to being on camera than I am. Did that come from what you did pre-farming?

Tom: Well, I mean a little bit. I worked in sales and I sat in a lot of marketing meetings. In farming, we don't sell ourselves as well as we could do. We've got the most amazing canvas that people want to see and people want to take it in. I think it's all our responsibility as farmers to show people what happens on the other side of the farm gate. To give people a reason to buy British produce, rather than anything else.

We're at a time in British history where never have we been more divorced from the land. Most people don't have a living relative in farming. So we as a population don't have a clue where our food comes from and yet we've never been more interested. Turn the TV on and it's farms, food, gardening, all that kind of stuff. We think people are bored by us but they're fascinated.







While Tom introduces Tony to one of his favourite pastimes...

#FarmerTom #FarmerTime.org #PhobiSmokes #WildSwim




Episode 2 of Lodi's Agri Podcast is online now!

Watch the whole interview (and Tony's cannonball into the River Nene) by scanning the QR code, or visit our Media Centre online at www.lodi-uk.com



Andrew Ward Forage Aid



Andrew Ward
Forage Aid

How they are supporting farmers & what you can do to help

If you're in farming and especially arable farming, you're bound to have heard of Andrew Ward. You might have seen him in your favourite farming magazine, or on the radio or television. He can also be found on Twitter as the famous @wheat_daddy. He's vocal about protecting the future of the countryside and educating the public about the realities of farming. Andrew is the director of Roy Ward Farm and farms 1,800 acres in north Lincolnshire. Andrew was the Farmers Weekly Arable Farmer of the Year in 2008 and NFU's Farming Champion 2013. In 2014, he was awarded an MBE for his services to agriculture after founding Forage Aid, in response to the devastation of the widespread, heavy snowfall in March 2013.



Kate: Have you always farmed?

Andrew: Yes, my father farmed and his father too. My grandfather farmed in another area of Lincolnshire, but my father moved to this farm which we've farmed ever since.

Kate: The other day, I saw a video on your Twitter account about that you've stopped growing oilseed rape on your farm. What do you currently have in your rotation?

Andrew: We're having a holiday from oilseed rape, I suppose you could say, because of flea beetle and other issues growing it. We will get back to it but perhaps in a few years time when the rotation is stretched out. We grow winter wheat, spring wheat, spring malting barley, spring oats, spring beans and sugar beet. We're also involved in countryside stewardship. I'm a great believer in providing habitat for wildlife and helping the environment so we do a lot for wildlife. We have 8m wildflower margins around each field.

We had a meeting with the head of British Sugar because the prices are so poor. Last year's harvest was a disaster due to insect attack and beet yellows virus. In my own crop, we lost £46,000 on it. There are many people going out of it, but we signed a contract last summer and we have to honour it. There is talk of importing sugar cane from abroad. Sugar cane is generally grown with 23 plant protection products that we are banned from using in the UK.

Kate: It just shows the importance of backing British farmers and buying British sugar. What do you think are the biggest threats to farming and rural life?

Andrew: I think the biggest threat is policy changes towards the direction of UK agriculture and food production. The next thing is the changing weather. As much as floods and snow cause issues, the dry weather can also cause catastrophes as there will not be enough crop for livestock. Last year, the winter wheat could not be drilled promptly due to the wet autumn and the continuing rain pushed back the sowing of spring crops. Due to this, straw supplies have been tight with sky-high prices.

Kate: I suppose we all have to pull together, which is why you set up Forage Aid. How many farmers have you helped since its beginning 8 years ago?

Andrew: In total, we have given aid to 137 farms across England and Wales. We have moved 423 lorry loads with a mixture of silage, straw, hay and haylage with a total estimated value of £820,000. 99% of which has been donated by the farming community.

Kate: What is one of your most recent success stories?

Andrew: In July 2019, the countryside around the village of Reeth in the Yorkshire Dales flooded and farmers found their yards & fields under water. The water that came onto their farms was contaminated by lead and zinc which seeped into the bales kept on the yard and made them unusable. In addition to providing replacement straw and silage as needed, we were able to source additional grazing well away from the floods.

Kate: What can farmers do to support Forage Aid?

Andrew: They can set up an account on our website even if it's just to express an interest to donate forage or straw in the future. If the time comes and they don't have enough to spare, they don't have to put their own livestock at risk. We know that the feed situation is tight and it will be tight again. We also have financial support from the public and from other organisations. We are always looking for hauliers to help and support. They can express an interest via our website or email us directly.



Go directly to the Forage Aid website www.forageaid.org.uk to express your interest or to donate.

STOP THE SUMMER BUZZING ON-FARM



DAVE REECE On-Farm Pest Control Specialist & Technical Advisor at Lodi UK gives his write up on the key products to control flies

There are 7,000 species of flies in the UK, but only 20 cause issues for livestock. Flies are the most common ectoparasite for most farmers.

Did you know that the lifecycle of flies is dependant on temperature? Flies can reproduce year round in warm conditions, but their life cycle becomes shorter as the temperature increases. The life cycle takes 50 days from egg laying to adult at 16°C. This decreases to 16 days at 25°C and 7 days at 35°C. As the temperature of pig and poultry units are heated all-year round (between 16°C and 36°C), they are the perfect location for flies to



sheep in a flock to be affected with flystrike, which is a devastating and sometimes fatal condition caused by maggots. Only 15% of the total fly population is made up of adult flies at any one time, it is essential that an integrated fly control system is used. If an adulticide is used solely, the eggs, maggots and pupae will reinfest your buildings quickly. Lodi UK are on hand with a range of products to attack flies at every stage of their life cycle.

Maggots Granular Larvicide contains a highly effective and specific growth regulator called Cyromazine. It is easy to use and is a water-soluble granular larvicide that can be directly sprinkled on slurry or best sprayed after dilution in water. This treatment stops larvae from developing which ultimately breaks the fly cycle so flies will be eliminated. The Maggots larvicide offers a long residual effect and is safe to use around livestock.

Digrain Perbio Choc RTU is the strongest oil-based ready-to-use insecticide available to the UK farmer. It is effective against most flying or crawling insects, from flies and wasps to red mite and stored grain pests. It can be fogged or sprayed for ultimate ease. With its' 3 month residual and fast knockdown, it should be an essential item in every farmer's store!

Twenty One WP Fly Concentrate is a uniquely formulated wettable powder for the control of both biting and non-biting flies in poultry, pig and livestock housing. It contains 10% Azamethiphos which is the key active in Twenty-One and has fast become the leading brand and the farmer's choice of control for nuisance flies. Thanks to its quick, effective and long-lasting capability of up to 12 weeks, Twenty One is the only product that kills by both contact and ingestion. It is key to identify what type of fly you are trying to control in order to choose the correct application method and to get the best results out of the product.

Sheila RTU Granular Fly Bait is a ready-to-use insecticide which is designed for use where flies congregate, such as in animal pens. It contains unique sex pheromones and attractants that lure flies to the granules. The bright yellow granules contain Azamethiphos which is the fastest chemical on the market and are the only bait that kills by contact and ingestion.

Digrain C40 WP has a wide range of applications on farm and has a proven 100% mortality against insects, such as flies, litter beetle and other insects. C40 WP has a fast knockdown and is long-lasting.

Lodi's Dairy Fly Spray Concentrate is specially designed for use in dairies and milking parlours. It's highly concentrated pyrethrum formulation that will target and control insects fast. Pyrethrum is unique in that after it has controlled the infestation it will disappear, making it ideal for the parlour.

Larvenol Larvicide RTU is a brand new insect growth regulator which can be used in pig, poultry and other livestock systems. S-Methoprene inhibits maggots and larvae from becoming adult flies with a low application rate (30g/m²) and long 8 week action.



flourish! When the flies hatch, breeding is their first priority – more so than eating! Within 48 hours of hatching, they can begin egg laying. They lay 100-150 eggs at a time and they can lay 4 or 5 times during their short lifespan. You can see how infestations explode so rapidly! When Dr Kai Sievert spoke at the 2015 PestEx event, he reported on a research study that compared the growth rate of pigs in housing with an untreated, moderate fly infestation (6-21 flies trapped on glue traps per day) and in housing where the flies were controlled. The pigs were finished in 109 days in the systems where the flies were controlled, compared to 121 days in the housing where they aren't – an increase of 11%! Dr Sievert estimated that the feed cost savings were €15,000 per pig in treated housing with a capacity for 1500.

Flies aren't only an issue for pig producers. For poultry farmers, house flies (*Musca domestica*) bring the threat of cecidiasis which can reduce egg production by 10%. Flies can spread the bacteria which causes Summer Mastitis, which can cost up to £300 per case to treat. In calf-rearing systems, infestations of biting flies (*Stomoxys calcitrans*) were over 100 flies per calf, weight gain can be reduced by 20% in beef units. It is common for between 1 and 3% of

Controlling Red Mites & Insects In Poultry Housing



What are they and how do you get rid of them?

What are red mites?

Red mites are one of the worst pests that you can get as a poultry farmer. They are a parasite that live in poultry sheds and feed on hens' blood while they sleep at night. Red mites can be difficult to spot as they are tiny - between half a millimetre and a millimetre long. They are grey, apart from when they have just fed and then they are bright red. Red mites cause weakness, restlessness, increased feather pecking, anaemia and, in severe cases, death. Red mites can lead to reduced weight gain in broiler chickens and reduced egg quality in laying hens. They might also cause the transmission of diseases such as Salmonella, mycoplasma, coccidiosis, e. coli and Newcastle virus.

How can you identify red mites?

Red mite infestations can take hold very quickly and can be extremely hard to control. It is difficult to completely eliminate red mites as it only takes a few mites to escape, and they will reproduce quickly. They can survive without feeding for several months. Their life cycle only takes a week with females being able to lay up to 40 eggs in their lifetime.



Farmers often face difficulty in monitoring the level of red mites in their sheds as red mites are nocturnal. They hide away in cracks and crevices during the day and then crawl out to feast on the chickens' blood at night.

One of the easiest ways to check if your poultry sheds have red mites is to take a piece of white paper or a white tissue and rub it on the underside of hens' perches or in the corners of their nest boxes. Red mites will cause smears of blood to appear. Another way is to check around the chicken's vents for scabs or signs of irritation.

How can you combat red mites?

Red mites can survive for months without feeding so getting rid of red mites is more complicated than simply living a longer gap in between batches of hens. The most important step is to replace any wood inside the shed with plastic or metal. Plastic and metal is less likely to contain cracks than wood, where red mites can live. It's also important

to keep on top of the maintenance inside the sheds as any broken or cracked equipment is liable to become a hiding place for red mites. Steam cleaning in between poultry lays can eradicate most of the mites and their eggs as they cannot withstand temperatures above 45°C. Another method is to heat the whole poultry shed to 60°C for two hours. There are many insecticides on the market which are effective against red mites, but it is important to use one which has a residual effect for a better long term effect.

Which products can you use to target red mites & insects?

Digrain Perbio Choc is the strongest of its kind in the UK. It's quick knockdown and long residual of up to 3 months means that treated areas are pest-free for a while! As well as being effective against red mites, Perbio Choc is effective against most other flying and crawling insects, such as litter beetles, ants and flies. It can be sprayed or fogged for maximum flexibility.

Organ-X Desi-DUST is the perfect organic product for use where insects may rest as part of the red mite management plan in conventional poultry farms. The naturally-mined mineral is safe around all animals but looks like broken glass under a microscope. When the mites crawl over the dust, it pierces waxy outer coating from the insect's exoskeleton, so they die of dehydration.

Digrain C40 WP is a highly effective wettable powder with long-lasting residual. With Ficam W's withdrawal in 2020 it has become a key alternative insecticide in controlling flying and crawling insects.

Top **3** insecticides for red mite & insects around poultry



How to Control Litter Beetles

Litter beetles (*Alphitobius diaperinus*), also known as lesser mealworms, are some of the worst pests that you get as a poultry farmer. They reproduce quickly, carry diseases, damage buildings and are a nightmare to control! In recent years, there has been a population explosion of litter beetles inside poultry housing. The beetles are thought to have originated from sub-Saharan Africa so prefer warmer climates. As global temperatures continue to rise, they are likely to become even more of a nuisance.



Litter beetles are oval-shaped and approximately 5.5-6.8mm long with two antennae. They tend to be black or brownish-black, although the exact colour depends on the age and 'strain' of the beetle. They are shiny and their hard shells are lightly striped with impressions.

Average female litter beetles lay 400 eggs in their year-long life, but they could potentially lay as many as 2000. As the eggs are so small and sticky, they can easily become covered in dust and become impossible to see. Within a week, they hatch into larvae. The larvae are very active and can move to avoid light and to feed - they can even crawl onto and feed on weak birds! After a month, they fully grown and ready to emerge. Under the ideal conditions - 30-33°C & 90% humidity - the lifecycle can take as little as 5 weeks.

Litter beetles are not considered a grain store pest as they are mostly found in poultry housing. However, they can be classed as secondary grain pests as they feed on grains that have already been damaged. Grain spoilt by moulds is particularly susceptible. They chew on the litter of poultry units, causing it to turn into powder. This can cause respiratory distress and means the litter needs to be replaced more

often. When the litter beetle larvae are ready to pupate, they will burrow into floors and walls. Once they have become adults, they emerge and further damage the walls.

This damage can cause significant damage and lead to increased heating costs. In one study, it was found that heating costs were 67% higher in houses with beetle damage.

Lesser mealworms are known carriers of over 60 poultry diseases. These include avian influenza, Newcastle disease, Aspergillus, and parasites like coccidiosis and roundworm. Litter beetles are also intermediate hosts for poultry tapeworms and cecal worms. They can carry 26 pathogenic types of E. coli for 12 days and Salmonella spp. for 28 days. This can infect the next flock.

As insects are a natural food source for chickens, they are irresistible. Eating just one larva or adult infected with salmonella can pass the disease along to a day-old chick. In heavy infestations and hot weather, the beetles are unable to find enough moisture in the litter and will bite birds around their feathers and vents.

As well as reducing performance through disease, litter beetles can also decrease growth rates and egg production by becoming the primary food source. Litter beetles can eat significant amounts of feed. Due to this, they are attracted to poultry feed lines and pans and often congregate. Birds may choose to feed on the birds rather than their rations, which fills their digestive system with the hard, indigestible shells of the insects.

Like most poultry pests, they cannot be controlled through cleaning alone. Due to their burrowing action, they can hide in walls during pressure washing or steam cleaning. Their tough exoskeleton means that pressure washing simply washes them off the wall and that they just walk back to the walls.

They are also hard to kill with sprayed insecticides. Not only do they remain inside the walls, but they can also bury themselves into the muck and litter, which makes direct contact extremely difficult. Litter beetles also move in large numbers which makes it even more difficult to make sure each beetle receives a lethal dose of the active ingredient.

Lodi's technical expert, Dave Reece says that the best method of control is using Alphi WP Concentrate and painting it in a 15cm band around the base of the building. Painting concentrates the active so they will receive a higher dose as they walk across the band to get from the litter back into the walls.



Dave Reece explains how to use Alphi against litter beetles in poultry housing. Scan the QR to watch!



A Day in the Life of a Maltster



Jonathan Bainbridge
Simpsons Malt

Hi Jonathon. Could you tell us a bit about your job role at Simpsons Malt?

I'm the Production Manager for our barley intake, our Fersfield grain store – which is about ten miles from the maltings



– and malt outloading at our Tivetshall St Margaret Maltings in Norfolk. So, this incorporates a chunk at the start and a chunk at the end of the process.

What does a standard day in your role look like?

The day will start with a morning meeting with my team to discuss the movement plan for the next 24 hours, followed by a production meeting with management to discuss wider site priorities and planning. Then I would be looking at what barley requirements we have and work with our planning and transport teams to allocate haulage and storage for barley coming into tip and also to transfer into production or long-term storage. Then, I work alongside my team to make sure we are on plan for supplying malt to our bagging hall and supplying raw material to our internal customers, the roast house and GKV's. I will also spend time with our supervisor at Fersfield and work on a plan of allocating storage for barley pre-harvest and also for the annual event itself. No two days are ever the same!

What are the challenges you face in your job?

Well, there are several challenges, mostly the weather. When working with barley, you never stop thinking about the weather and what the year ahead will be like. As maltsters, we have to adjust and adapt to the barley that's available and make sure we are in a position to intake and nurture our stock for production and being in a position to produce quality malt year-on-year. Also, keeping the flow of production going is always a good challenge, from intake through to out loading.

What makes a good harvest for you?

A good harvest is having all the barley come in and tip and we have zero rejections and zero issues on drying and screening. But again, we are in the hands of nature. If farmers have a dry planting season – November time for winter barley and March time for spring barley – and then we have a nice drop of rain soon after until the seed has germinated and grown and then get a bit of sun on it, then we know it's going to be good.



How do you ensure barley is kept to the highest standard in stores?

After barley intake – where the grains are analysed extensively in our laboratory to ensure their suitability for malting – the barley is then dried, screened and then sprayed with K-Obiol pesticide before entering long-term storage. As you can imagine, we don't want any weevil, dust mites or any variety of bug getting into our barley and eating away at it, so we take precautionary measures by applying a dosage of grain pesticide. Barley is very much a living product even after it has been cut from the field, so we must treat it with respect, protect it and nurture it.

What is the most rewarding thing about your job?

It's true to say that watching every load of malt go out the door to customers all over the world gives me a lot of satisfaction and the buzz from that is still there. However, I would say that the most rewarding thing about my job is having a team who are very passionate and knowledgeable and contribute in different ways to the continual improvement of the site. You can't make good malt out of poor barley and helping improve the team and work to build a strong base and platform for the rest of the production process to work from, that's the most rewarding part.

From Harvest to Whiskey

How farmer's grain is made into Single Malt - Cotswolds Distillery

Making whiskey starts even before the barley is grown. The land, water, variety and farming practices hugely impact the flavour of whiskey.

Once grain is harvested, maltsters steep the barley in water over 3 days to raise its moisture content so it will begin to germinate. Transferred to the floors of large barns, it is spread evenly and turned to ventilate and cool them. Germinating the grains as slowly as possible allows all of the starch to be converted into sugar before any shoots emerge. The grains are then added to a kiln and roasted.

The malt is ground to release the sugar, is extracted into sugar. The ground barley (grist) is heated with hot water to release the sugar (worts). Then two strains of dried yeast are added which have been chosen for their consistency and the flavour they give to the whiskey.



Distillation can then begin in a wash still (large pot). Boiling for several hours collect the alcohol and flavours which is then separated out by distilling again. The first liquid from this second distillation is called the 'foreshots' and is too harsh. The 'heart' of the run comes next which is perfect for whiskey making. A few hours after this comes the 'feints' which is too oily and heavy are also discarded.

Now with the 'heart cut' which is a clear and fruity spirit – that packs a boozy punch at 75%. Demineralised water is used to reduce the ABV to 63.5% and then it's poured into an oak cask and stored for a minimum of three years and a day.

During this maturation, the flavour and colour come from the wood into the spirit which mellows the whiskey. Once it has matured, it is blended, reduced to 46% and bottled.

Leading Pest Control Products Meet the Team at Lodi UK!

Learn a little more about the Lodi Team and how we lead the pest control industry!

Ross

Recently celebrated 10 years at Lodi UK as a UK Key Account & Business Development Manager and featured in the first Episode of The Agri Podcast enjoying a round of golf while chatting with ex-dairy farmer, ex-jockey, and Agri Store owner Peter Lewis.

Kate

8 months into the role of Agricultural Communications Assistant and the Editor of Pest Protection Magazine, social media channels and email newsletters. Following a passion for interviewing and sharing insights into British Farming while looking after her horse Chino, a Warmblood x Appaloosa.

Stacey

Delivering up to date knowledge to Agri Stores with an engaging monthly newsletter update detailing recent adventures and trained knowledge of professional pest control.

Sam

Marketing Manager excited to be discovering new ways to communicate Lodi UK's leading pest control range alongside a passion for open-water swimming – even though living in the land-locked West Midlands!

Tony

Working with the agriculture industry to deliver leading pest control products for the past 11 years while taking pride in adding a personified definition to the word "jolly". With a recent appearance in Episode 2 of The Agri Podcast interviewing Farmer Tom, FarmerTime.org, on the state of British Farming and its public perception after a challenging wild swim up the River Nene.

Gill

Leading Administration at the Lodi HQ and ensuring Lodi UK products arrive at location swiftly and with excellent customer service.

Roger

Host of the recent, widely viewed Grain Store Pest Protection webinar, fishing enthusiast, & Director at Lodi UK.



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