9 April 2018

Mr Pat O'Shannassy
Grain Trade Australia
PO Box R1829
Royal Exchange, Sydney NSW 1225
Via email: pat.oshannassy@graintrade.org.au

cc: submissions@graintrade.org.au

Dear Pat,

RE: GTA Technical Guidelines Document (TGD) on Sampling - Issues with Vacuum Sampling Probes in Grains, Oilseeds and Pulses

GrainGrowers welcomes the opportunity to provide feedback regarding the GTA Technical Guidelines Document (TGD) on Sampling.

GrainGrowers is a grain farmer representative organisation with more than 17,000 members across Australia. GrainGrowers' goal is a more efficient, sustainable and profitable grain production sector that benefits all Australia grain farmers and the wider grains industry.

Australian grain farmers invest critical time and money in producing their annual grain crops. ABARES data shows that in 2016/17 the average Australian gain farmer invested $870,700 in operating costs. Planting decisions for winter crops are typically made from March to May with crops harvested from October to December. The final per unit return for the grower is determined by the grade/quality of grain at harvest, as determined by sampling of grain at the Receival Agent upon delivery.

Given the significant variation in prices of different grades of grain, incorrect sampling has the potential to significantly impact the return of individual farmers. For example, on the 15th March there was a $54/T (-20%) spread between the GNC contract price for H1 and SFW wheat delivered Yarrawonga. If, due to incorrect sampling, a farmer's 42T load of wheat was 'downgraded' to SFW1 rather than H1 the farmer would lose $2,268. Over a 5,000T production program, the lost revenue to the farmer would be $270,000.

The GTA TGD No.5 Static Grain Sampling – Road Truck (hereafter referred to as GTA TGD on Sampling) notes that "*sampling may be defined as obtaining a sample of grain representing the parcel of grain held in the truckload of grain tendered for delivery*".

GrainGrowers members have reported a significant variation in grain sample discrepancies across many receival sites in the 2016/17 and 2017/18 seasons. In particular, there is reported to be significant discrepancy in samples collected by (primarily manual) vacuum sampling probes. The discrepancies in samples produced by manual vacuum sampling probes are suspected to arise from:

- Inconsistent design of different sampling probes (design error)
- Inconsistent use of sampling probes by different operators (human error)

The following letter was provided to GrainGrowers by a large grower in NW NSW.

Box 1: Response large grower with certified on farm sampling equipment, NW NSW

We have had many issues with vacuum spears with the inconsistent results with them. We have a fully certified sample stand with all equipment being certified for trade use. I have five certified samplers on farm.

[On] numerous occasions we have had inconsistencies with what we sample [on-farm when truck leaves] with to the results produced at the receival site. When [the receival site] is within 200km of home, I head in and spend the time to go through the issues [with the site manager] and 90% of the time it is the spear giving inconsistent results through poor technique and the variance with the vacuum spear.

The latest [vacuum] spear that has no hole in the top to let the air in after the spear has sampled to the bottom of the load is even worse.

In pulses being a bigger grain size, it is therefore harder to suck up and harder to push the spear into. We get huge variances in results [with pulses]. [For the same load] we have had Foreign Matter go from 2% [on-farm] to 8-10% at local receival sites and up to 18% at port receival sites.

I have personally done numerous tests here on farm after loading a truck and then followed it to the local site and had huge variance. I have even got managers and samplers from the receival site to come out on farm and test using my equipment on farm then go back 80km to their site and re-test and have different results. Usually by diplomatic processes we come to some sort of compromise and I get my product through. The other 10 million tons from other farmers doesn't.

In one case that I have some concrete evidence I was delivering chickpeas to port[1], sending six to eight B-Double trucks a day.

All was fine as we test each load before it leaves the farm. After 800-1000 tonnes of perfect deliveries, I got a call one morning that at 10pm the night before, 3 loads had been rejected for high Foreign Matter (FM). They asked to be re -speared with the same result, so they headed back to [another site] to be graded without calling me. That one night cost me roughly $18,000-20,000. The next truck to unload up at port I had personally sampled. I spoke to the driver and said to call me with results. The first test was 18% FM. At about 11am. As is time slotted he had to wait till 3:30pm to get a re-spear. I rang everyone I could to explain the issue. I couldn't get any help. The re-spear tested 17% FM. They told me to go away. I asked the driver to stay at site until I could find someone higher up to talk to.

I eventually [spoke to the] head of quality control. She said she would personally be in the stand for my next load. I negotiated for the same truck (same load) to stay go in again the next day. The overnight wait cost another $1000. I get the call the next morning yes this one is fine under 3% FM. I then told her it was the same load that was rejected the day before. She said no it must have been graded or a different one. The truck in question has Satellite tracking in it and I have the data. She then said well it's through now what are you worried about! I sent an invoice [to the receiver] for grading and extra freight etc. However we received the corporate response, "go away we are accredited…"

The spear has to be banned!

Further examples of concerns raised by other growers relating to vacuum sampling probes include:

[1] Details removed due to confidentiality.

- *I have had countless issues with Vacuum Spears over the last 10years … It is impossible to take a consistent sample with these machines.*

- *I don't deliver to any receival sites outside a 200 km radius & try to stay off unsealed roads. Reason being the further & rougher the trip, the [more compaction and] more fines fall to the bottom of my tippers. This means that the vacuum system used will suck more trash when pushed through to the floor of the truck.*

- *Samples change between samplers. Different height and strength characteristics of operators often have different sampling methods (i.e. vertical vs. angle spear, inconsistent movement, not reach bottom of truck etc) which impacts the sample.*

- *The spearing of a truck with these machines is supposed to be one continuous push in & with no pause at the bottom & the same continuous movement on the way out. Not all sampling operators appear to have the strength to perform this motion. Most times they will pause at the bottom of the push in, which gives the vacuum more time to suck off the floor before they start to pull the spear out because of the effort it actually took to get it in there.*

- *In one instance I requested a manual spear be used for a re-spear of a truck at a packing site, I was granted this request & the sample was completely different in my favour. When the next time I was rejected at the same site and I again asked for the manual spear, I was told no this time by the site manager, he said and I quote "Vacuum spearing is industry standard and if we manually spear you and the sample is fine, where we on sell this grain to will vacuum spear it and it will fail so I don't want to be struck with it". Needless to say, I don't deliver to that site anymore.*

- *I think it is fair to say there will always be some level of discrepancy between testers but there has been some wild variances in fabas and completely different analysis on chick peas last year and on fabas the year before that. It becomes common knowledge among growers that there are delivery points for grain where the sampling stand is perceived as tough and others which test very different.*

- *For the 16/17 season testing of fabas and the variability among sites was a shocker. Loads that were rejected at (Site A) and (Site B) in NW NSW as not even making No.3's were accepted at (Site C) as No.1*[2]*. Now I am not saying who is right or wrong here, just merely stating what occurred. Nevertheless, the confusion in the grower's mind was completely justified. Last year on chick peas it was just as silly. At one location chickpea were being downgraded due to mould at a cost of $95/tonne but being accepted elsewhere as No.1. The sampling stands had different interpretations as to what was mould. This really does the famers head in!!!*

- *There is little doubt in my mind that mechanical testing or non-human evaluation of samples is a must. The cotton industry moved from visual to HVI and it has been a good thing.*

[2] Names and location of sites removed for confidentiality purposes.

GrainGrowers is aware that concerns regarding vacuum sampling not producing a representative sample have been raised to the Grain Trade Australia Standards Committee in the past.

We also note that vacuum sampling probes are prohibited for use in the United States. In particular, the United States Department of Agriculture states in-load suction probes are not approved as "*they draw air through the load of grain and vacuum excessive amounts of fine foreign material into the sample*". Given suction probes are not permitted in the United States, we query why they are permitted for use in Australia.

Furthermore, GrainGrowers notes that the National Measurement Institute (NMI) currently has no regulatory control over grain sampling. Nevertheless, the GTA Technical Guideline on Sampling notes that because sampling has an impact on other aspects of grain quality assessment that falls within NMI regulations, the NMI will continue to keep a watching brief on sampling protocols implemented by industry and may provide input.

In discussion with bulk handlers and operators of other grain receival site, GrainGrowers has an appreciation of some of the practical difficulties encountered when collecting grain samples from truck. These include:

- Access to entire load when trucks are presented on one side of a sample stand.
- Depth of trailer, reach of person and length of probe.
- On farm blending having an effect on the homogeneous nature of the load and therefore repeatability.
- Different vacuums and systems on offer from suppliers and variation throughout the industry
- Variance between manual, vacuum and mechanical probes.
- Technology advances and cost to upgrade working equipment.
- Compaction of some commodities and ability to insert probe (e.g. pulses).

One operator of a grain receival site noted that *"variation among bulk handlers, private storages and end users can be due to the variation to different sampling systems."* GrainGrowers members believe that must be consistency in sampling outcomes, and that the sample must be representative of the load, irrespective of the sampling system used. . Furthermore, GrainGrowers agrees with the operator who noted *"it is in everyone's best interest to have systems in place to produce accurate and repeatable results".*

Recommendations:

Due to the widely reported issues with manual Vacuum Sampling Probes, and the aforementioned negative consequences that incorrect sampling causes, GrainGrowers recommends the following actions be taken by Grain Trade Australia Standards Committee:

1. GTA provide a thorough quantitative review of various grain sampling methodologies (including equipment and technique) to ensure the sample produced is representative of the truckload. [3]

[3] A quantitative review, via trials, would seek to determine the differences between the various sampling methods. With this data industry can then determine an accepted sampling method that minimises both equipment and operator variation.

2. GTA and Industry recommend that the National Measurement Institute extends regulatory oversight to the area of grain sampling (including method and equipment).
3. GTA consider that industry, if using vacuum sampling probes, use only mechanical (not manual) probes.
4. GTA consider mandatory reporting (and subsequent investigation into the cause) of instances whereby significant sampling errors have occurred.
5. GTA and Industry consider banning the use vacuum sampling probes at grower receival sites. Only once clear evidence exists to support the re-introduction of manual vacuum sampling probes, taking into account both design and operator concerns, manual vacuum sampling probes be considered for re-introduction.

A strength of the Australian grain, oilseed and pulse industry is the robustness of the classification, segregation and trading standards. Classification, segregation and trading standards not only ensure that Australia's grain customers are delivered the product they require, but it also ensures efficiency of supply chains (transfer of value) and determines the final per unit return for the grower.

Segregation of Australian grains, oilseeds and pulses into various grades is only possible if the physical characteristics of the product are measured and known. To test that grain, it first must be representatively sampled by the Receival Agent upon delivery. If that sampling process does not produce a representative sample, the grain, oilseed or pulse may be assigned an incorrect grade, which in turn leads to inefficiency of supply chains, threatened market access and incorrect payments to growers.

It is in the interests of the entire Australian grain supply chain to ensure that the initial sampling of grain at grower receival site produces a sample that is representative of the truckload.

Yours sincerely,

Luke Mathews

GrainGrowers Trade and Economics Manager