



coles



final report

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Addressing supply of pasture fed beef within a premium Coles branded product

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Executive summary

When Coles introduced their 'Graze' branded Grass fed beef range across the eastern states in 2015 they were faced with a number of challenges. One of the major issues to be overcome was continuity of supply of a reliable compliant product every week of the year. Verification of product, consistency of product and sustainable profitable production systems all impact on the ongoing success of this premium branded beef. To ensure the integrity of the brand, Coles underpinned the Grass fed range with an on farm auditable program that ensures every animal has life time traceability and meets industry and Coles Grass fed standards.

A supplier engagement process was undertaken by Coles to provide the confidence and support suppliers would require to meet the Grass fed supply objectives. There was very little contemporary evidence of quality assured Grass fed beef schemes demonstrating their sustained productivity and profitability. To assist in overcoming the challenges of supply and ensuring producers were skilled in the requirements of the auditable system, Coles collaborated with Agriculture Victoria to provide supplier training, case studies and extension resources to improve capability and verification processes across their supplier network.

Five supplier training days were delivered across Victoria and NSW, focusing on specific standards within the Coles Grass fed program. The training focused on competent use of the National Livestock Identification System (NLIS) database for tracking life time traceability, as well as gaining an improved understanding of Meat Standards Australia (MSA) grading and the resultant impact on eating quality. Producers were trained in accessing the NLIS database, understanding the importance of maintaining and reconciling the animal movements on and off the database and being competent in retaining the integrity of the life time traceable status of each grass fed animal.

The MSA training focused on improving producers understanding of pre slaughter management of cattle and the influence this has on eating quality. Coles do not have MSA ungrades as a part of their grid structure/discounts, thus their supply base was lacking in understanding of MSA and how dark cutting in particular affects Coles ability to efficiently utilise those carcasses. Implementing procedures on farm to minimise the risk of ungrades provides improved outcomes for Coles as well as the suppliers, ensuring best practise management of cattle into the 'Graze' program. Forty nine suppliers attended the training days in total, which at that time represented about 20% of the 'Graze' supply base.

The evaluations and improvement in skills and knowledge from each of the training days showed suppliers valued the learning as well as the interaction with Coles Procurement and other representatives during the day. The training days highlighted the importance of Coles interacting with suppliers on a personal level and making a commitment to transparency and open communication.

Case studies were completed with Cole's suppliers demonstrating production systems that would allow finishing of cattle to meet market specifications out of season. Eligible supplements and forage crops were investigated and analysed for their ability to produce suitable cattle and maintain profitability with a higher cost of production. Key messages observed from the case studies include the importance of selecting the right type of cattle to finish into the 'Graze' program, particularly where cattle are bought in and are fed an eligible supplement. Knowing the cost to feed and produce cattle, along with an established margin when consigned, ensures a price incentive exists in the transaction. Close relationships formed between the end market and the supplier through a value chain approach allows for shared decision making, confidence building and sustainability of supply through all seasons.

The electronic National Vendor Declaration (eNVD) proof of concept trial provided Coles with the knowledge they required to confidently progress a permanent eNVD across their supplier network. The two week trial utilised a purpose built 'App' to demonstrate how an eNVD system could operate whilst processors upgraded their in house technology to receive eNVD's from suppliers. While there were issues for a small number of producers one week with connectivity, the general feedback was very positive and encouraging from all segments of the supply chain. Coles have since commenced scoping out a permanent solution to using eNVD's throughout their supply base, starting with feedlot suppliers.

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1 Background

Within the global market place for beef there has been a growing consumer trend towards pasture raised and finished beef that is verifiable, safe and originates from properties accredited under quality assurance programs. A number of supply chains both export and domestically within Australia have recently developed and implemented pasture fed assurance schemes to meet this consumer expectation. Embedded within these particular expectations there is a desire that beef presented for sale originates from cattle that have been raised in a natural state, have had their welfare requirements met and have not been subjected to health treatments that may have food safety or portray negative human health issues.

Coles as one of the major supermarket chains within Australia has over recent years initiated a value add component across their meat offering, incorporating animal welfare, hormone free and Australian grown as important elements within a particular branded offering. Following on from these initiatives Coles have launched a Grass fed beef range branded as 'Graze', offering a high quality, competitive product underpinned by a third party auditing program and extending to additional welfare standards and eating quality attributes.

To ensure supply chains are able to satisfy this market, quality assurance programs are being or have been developed around naturally grown and grass fed brands with a range of elements incorporated into the programs. Suppliers into these markets need to be able to verify the auditable components of the program and have a working understanding of how to achieve the requirements of the market scheme they supply to. This project provides the learning and documented evidence required to achieve the required assurances.

The quality assured pasture fed beef schemes have very little contemporary supportive evidence of their sustained productivity and profitability. Coles have initiated demonstrations of systems that will provide the supplier and them with information on production costs and suitable production systems that will guide pricing signals back to the supplier. The completion of supplier case studies has provided examples of changes, innovations and systems on farm that suppliers have implemented or adjusted as a way to improve continuity of supply and consistency of product. Completed case studies will be utilised by Coles as evidence of suppliers situated across different climatic zones incorporating different production systems that produce cattle meeting their requirements in a profitable way.

MLA have recently launched electronic National Vendor Declarations (eNVD's) to industry with the aim of reducing the paperwork involved in completing a number of declarations at once. The new eNVD system is free to use and incorporates the Livestock Production Assurance (LPA) NVD, Meat Standards Australia (MSA) declaration, animal health declarations and National Feedlot Assurance Scheme (NFAS) declarations. Problems exist through many supply chains however in the form of a lack of technology readiness at processors to accept the eNVD's and practical use issues where poor internet connectivity exists, or where transporters require waybills for movement. Coles see the use of an eNVD as a means to further validate producers on farm production, deliver an easier option for suppliers when completing declarations and provide Coles with access to additional consignment data. Coles are investigating options for providing a purpose built 'App' for their suppliers to utilise that will provide an interim solution until industry is set up to receive and easily utilise the data.

2 Project objectives

- Through (4) case studies demonstrate the profitability of pasture based feeding programs for supply into 'Graze' and demonstrate pasture fed production systems that meet Coles company and MSA carcass specifications
- Demonstrate the eating quality and retail readiness of cattle finished on pasture and eligible supplements
- Provision of a resource document for producers wanting to produce cattle for pasture fed supply chains
- Provision of skills and knowledge in the National Livestock Identification System (NLIS) database and MSA to assist producers in making verifiable declarations
- Determine the feasibility of introducing an eNVD into the Coles 'Graze' supply chain

3 Methodology

3.1 Case studies

Case studies are developed with key suppliers to Coles across south eastern Australia. Coles will identify suppliers who will implement strategies focusing on addressing sustained productivity and profitability on farm, working towards addressing increased supply and compliance to specifications of grass fed beef throughout the year.

3.2 Supplier Training days

One day workshops for suppliers accepted into the Coles Grass Fed program were delivered focusing on specific standards within the Coles program that will allow for verification of claims upon completing the Coles Grass fed self-assessment. The workshops covered the NLIS database and traceability and MSA.

3.3 eNVD Proof of concept

To determine the feasibility of implementing a permanent eNVD system across the Coles beef supplier network a proof of concept eNVD program was implemented. The following steps were undertaken.

1. Sapien Technology were engaged to deliver a test Coles eNVD App for use over two weeks.
2. The eNVD incorporates the LPA NVD, 'Graze' declaration and MSA declaration
3. Training was completed with Coles Livestock team to assist in use of the eNVD with their suppliers
4. Written instructions provided for use when downloading the App and for completion
5. Over two weeks all Graze suppliers utilise the eNVD for each consignment sent to Coles at either one of two processing plants in Victoria and NSW.
6. Complete evaluation and assess results for determination of progressing to delivery of a permanent eNVD across Coles livestock suppliers

4 Results

4.1 MSA and NLIS Supplier training days

Five one day workshops for producers supplying into the Coles grass fed beef program were delivered across Victoria (Ellinbank, Benalla and Rutherglen) and Southern New South Wales (Yass and Orange).

Utilising MSA & NLIS on your farm
Coles Graze program

coles
A little better every day

You are invited to a Coles Graze supplier's information day

The day will provide a great opportunity to:

- Understand MSA, how to apply it to your property and the Coles Graze program
- Explore and use the NLIS database providing you with the knowledge required to maintain traceability on your property and be fully prepared for an audit

The day will also provide an opportunity to network with other producers in the program, to get an update on the Graze program from the Coles team and enjoy some quality grass-fed beef from the BBQ.

Date: Thursday 16th April
Location: DEDJTR (formerly DEPI), 1301 Hazeldean Rd, ELLINBANK
Time: 09.20am for 10:00am start until 3pm (Morning Tea will be provided)

BBQ lunch provided

Confirmation of attendance is essential to help with catering
RSVP: by Monday 30th March to livestock@coles.com.au
or call Stephen Rennie (National Livestock Buyer, Beef) on **0418 266 691**

GRAZE
GRASS-FED BEEF

Fig 1. Invitation to the first Coles Training day held at Ellinbank, Gippsland

The purpose of these training days was to deliver focused training to suppliers on specific standards within the Coles 'Graze' program. The training allowed suppliers to verify their claims when completing the annual Grass'fed beef self-assessment. The two focus areas included in the training were utilising the NLIS database and MSA. Both industry schemes are utilised by the Coles 'Graze' program to underpin a number of elements within their standards.

- Element 2. Animal traceability and movements
- Element 1. Farm Management
- Element 4. Animal Health and Welfare

Another important part of the training days was to encourage and build the relationship between 'Graze' suppliers and the Coles Procurement, Marketing and Responsible Sourcing teams. Presentations and updates from each of those teams were included in the day ensuring suppliers understood the context of the training in relation to Coles and their customer needs. Through shared learning and improved understanding of each segment of the value chain, along with an opportunity for transparent communication, suppliers and Coles were able to achieve a greater understanding of the shared challenges. The evaluations and feedback from each of the training days have confirmed this as a valuable outcome. Refer to appendix 1.1 for evaluation summary.

Location	No. of businesses attending
Ellinbank	16
Benalla	12
Rutherglen	7
Yass	6
Orange	8
Total No	49

Table 1. Cole’s supplier training days and number of businesses attending

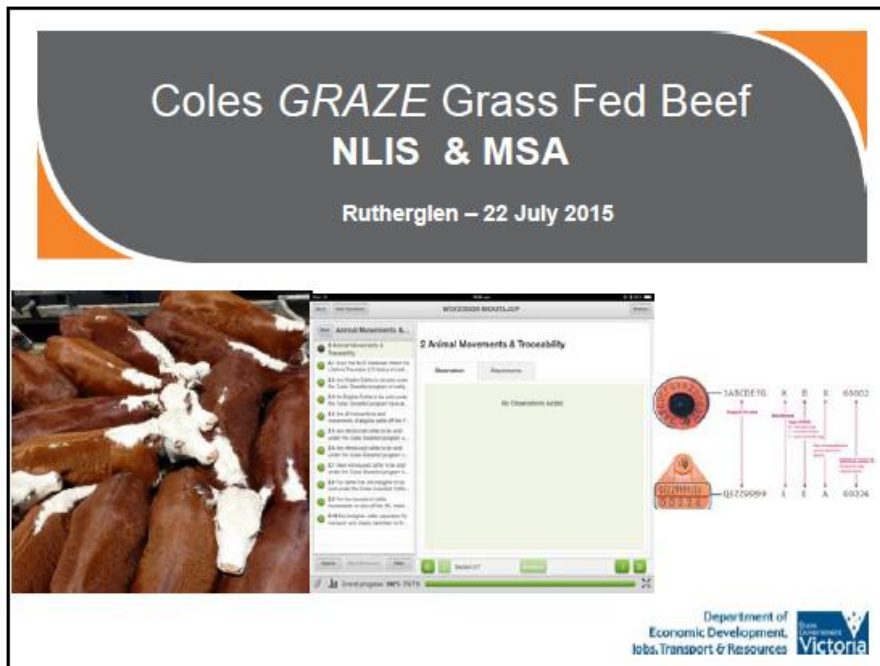


Fig 2. Pre and Post training session skills and knowledge assessments head slide

Pre and post skills and learning assessment of workshop participants was included as an activity at the commencement and conclusion to the training days. The assessment was made via keypad presentations with users indicating anonymously their answers to eight set questions relevant to the training on the day. This technique has been used successfully in indicating to the suppliers, presenters and Coles that an improvement in knowledge and skills pertinent to the Grass fed beef program has been acquired. The results are used by the trainers to improve delivery and content, as well as providing Coles with additional verification for their audit process, in that their suppliers are able to confidently answer their self-assessment questions and provide evidence of knowledge and application.

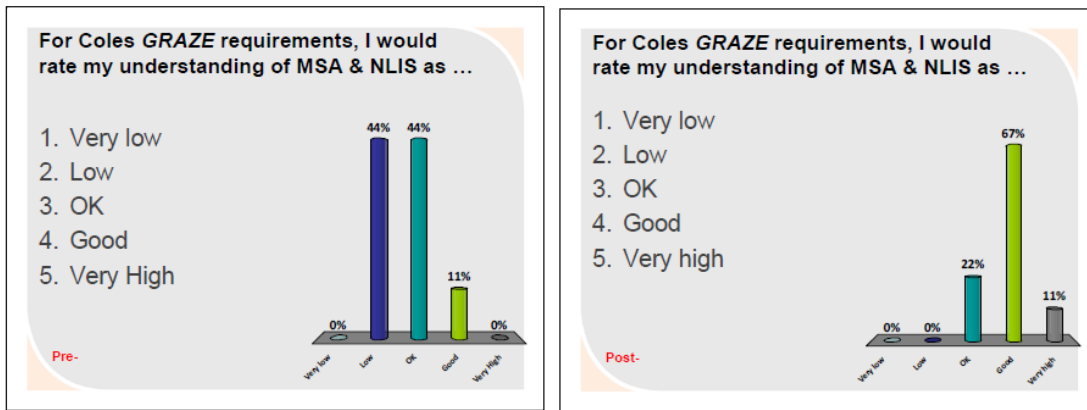


Fig 3. Example of Pre and Post knowledge audits of MSA training content – Orange results

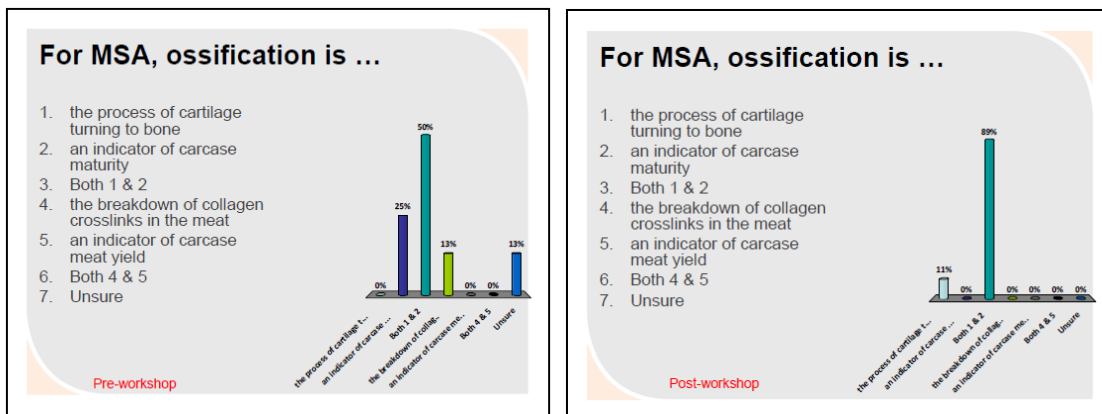


Fig 4. Example of Pre and Post knowledge audits of MSA training content – Rutherglen results

The results from each of the training days demonstrated a positive change in knowledge gained by the suppliers attending, as shown in the examples above (Fig 3 and Fig 4). Fig 3. shows an improved understanding of MSA and NLIS. Pre workshop results indicated 88% of the suppliers attending either rated their understanding as Low or Ok (44% each respectively) while 11% selected good as their answer. Post workshop when asked the same question, showed 67% answered Good, whilst 11% stated a very high understanding and 22% as ok.

When asked about knowledge and understanding of MSA and its relationship with meeting Coles Graze on farm requirements, scores moved from a low understanding to high. Fig 4 shows the difference from pre workshop where a variety of answers were used to describe Ossification to post workshop where 89% of the participants chose the correct answer. These results were reflected across each of the training days for each set of questions. For all Individual training day results refer to appendix 1.2

4.1.1 Report on improved registration and utilisation of NLIS and MSA websites for Coles Grass fed program verification

Since the introduction of the 'Graze' program and the associated Grass fed beef standard on farm, all suppliers have been subjected to annual self-assessment audits. When the program commenced 20% of all 'Graze' suppliers were third party audited annually, this included the time when the project training days were run. Thirty one audits were completed. More recently as a result of very limited numbers of non-conformance, only 10% of the registered 'Graze' suppliers have been audited, while all suppliers must still complete and submit an annual assessment. Livestock procurement staff maintains an oversight of all producers supplying into the program.

Feedback from AusMeat who conduct the third party audits commented that “Since the inception of Coles ‘Graze’ property audits being conducted there have been very limited non-conformances raised and none of these were in relation to MSA understanding and/or the ability to maintain the NLIS database”.

As a requirement of the Grass fed program suppliers must meet ‘Animal Movement and Traceability’ criteria. Specifically;

- Do all cattle consigned for slaughter for Coles meet the MSA on-farm requirements?
- Are all transactions and movements of eligible cattle off the PIC accompanied by appropriate vendor declarations and movement documents?
- Are introduced (purchased) cattle to be sold under the Coles Grass Fed program checked upon arrival to ensure an approved NLIS device is fitted?
- Have introduced cattle to be sold under the Coles Grass fed program been on the PIC for a minimum of 60 days prior to being sold under the Coles program?
- Do you maintain the records of cattle movements on and off the PIC?

In order to comply with these requirements, suppliers must be registered and actively manage their NLIS database. The training days held and involvement of procurement staff has assisted in ensuring the high audit compliance rates in relation to MSA and NLIS.

4.2 Case studies

4.2.1 Supplementary feeding in a grass fed system

Supplementary feeding in a grass fed system case study is attached as Appendix 2.1

This case study investigated the feasibility of using an eligible loose mixed meal for finishing heifers to meet the Coles Graze specifications. This demonstration also compared the profitability of such a system with a cereal grain finishing program, using heifers from the same cohort. The case study demonstrated it is achievable and profitable to feed an eligible supplement for out of season supply. Importantly this was able to be achieved whilst the cattle had continual access to pasture and were free to roam, as required by the Coles Grass fed beef standards. To ensure pasture remains a component of the diet however, restricted intake of the supplement will need to occur. Other key points determined through the completion of the case study include the importance of animal selection (breed, maturity type and sex) for the target market, especially when using an eligible supplement to finish. Grass fed eligible supplements are more expensive generally than cereal grain based feeds and will require the completion of a feeding budget to determine the profitability of such a system whenever cattle are supplemented this way.

4.2.2 Forage crops as part of a grazing strategy to fill grass-fed supply gaps

Forage crops as part of a grazing strategy to fill grass-fed supply gaps case study is attached as Appendix 2.2

This case study compared an irrigated sorghum and an irrigated rape/millet mix for utilising within a grass fed system to extend the supply of compliant stock into the Coles ‘Graze’ program. The outcomes demonstrated some key issues that need to be considered when deciding to invest in forage crops to extend supply into winter. For traders, selection of the most appropriate cattle to meet end market specifications is critical, along with buy in price and a known carcass price for the finished animal. Management of the sorghum to avoid over growth and timely grazing is important

as nutritive value declines as the sorghum grows and matures. The rape/millet mix required less labour to manage and was easier to graze, whilst also costing less than the sorghum.

There was no significant difference in eating quality, measured on MSA index, from either forage system. Non-compliance rates to the Coles company specifications were higher in the sorghum group (n=7) compared to the rape/millet group (n=1), most likely attributable to grazing management and resultant weight gain.

4.2.3 Coles Feed test analysis and animal performance case studies

The Feed test analysis case studies are included as Appendix 2.3

The feed test analysis case studies examined the linkages between feed quality and animal performance to meet Coles Graze specifications over autumn. Four suppliers' pasture based systems were measured for quantity and feed tested to determine the ability of the cattle to be consigned to meet target requirements from summer until the autumn break and some weeks beyond. All supplements being fed were also analysed to determine the amount of energy and protein in the whole diet.

This work contributed to the development of a tool to enable producers to determine the impact the combination of energy, protein and fibre will have on the growth rates of their cattle in the lead up to slaughter. The excel based tool is included in appendix 4.

4.3 eNVD Proof of concept

4.3.1 Completing and submitting eNVD's

All of the suppliers (or representing agents) to the Coles 'Graze' program over two weeks were able to successfully download the eNVD App onto a mobile device, as well as access NLIS database account log in details. A training day was delivered to all the Coles beef procurement team and livestock administration in how to use the App and assist their suppliers with downloading and usability.

An eNVD proof of concept report was provided to Coles and MLA after the completion of the trial, refer to appendix 3.3 for the full report.

Trial Results	Number
Number of suppliers	19
Number of consignments	25
Number of eNVDs submitted successfully	26
Number of eNVDs unsuccessfully submitted	1
Number of Transporters involved	19
Number of suppliers successfully sending eNVDs	18
Number of suppliers consigning more than once	6
Number of processors receiving eNVD's	2
Number of eNVD's sent to Scone	9
Number of eNVD's sent to Brooklyn	16
Number of processing days	6
Number of eNVD's completed by Agents	9
Total number of cattle consigned with eNVD	1739

Table 2. Trial summary data

Of the 26 eNVD's received by the NLIS database, Coles and the processor, eight of them were completed incorrectly. Table 3. below describes the errors in submitting the eNVD's

eNVD completion errors	Number of occasions
eNVD's incorrectly completed	7/26
2 eNVD's sent for one consignment	1/26
Reason for incorrectly completed eNVD	
Coles Graze declaration:	
Time trucked prior to date or time yarded recorded on declarations	4
MSA declaration:	
MSA date of dispatch different to NVD	4

Table 3. eNVD errors with completion or submission

The majority of causes for the incorrectly completed eNVD's resulted from recording inaccurate or conflicting dates and times within the eNVD App. Dependent upon the declaration there are date and timing questions required to verify the particular information. When the App is completed correctly the date and times will all be consistent and logical, providing a timeline of events in relation to each consignment. When completing the MSA declaration, on four occasions the date of dispatch varied from the date of movement commencing in Part B of the LPA NVD. When completing the information for the Coles Graze supplier declaration on two occasions the time the cattle were yarded was after the cattle had been trucked on the same day, whilst two other times the date the cattle were yarded was the day after the cattle were trucked.

From the 26 eNVD's completed, on 24 occasions the LPA NVD movement commencement date was accurately completed, whilst on the two remaining occasions the movement commenced date in Part B was two days prior to receivals or processing date.

4.3.2 Phone service/Internet connectivity

In the first week all suppliers or representing agents were able to successfully use the App with adequate phone/device service coverage, allowing the eNVD's to be submitted in a timely manner and before the consignments arrived at the plant for receivals.

In the second week issues occurred on two days when attempting to upload the eNVD file to the NLIS database. For at least five suppliers, submitting the eNVD required multiple attempts. One consignment arrived at the Brooklyn plant prior to the successful submission of the eNVD and resulting email to livestock receivals. Poor phone service was considered to be the cause of the delay in submitting the eNVD's after ruling out other IT issues with the eNVD App provider.

4.3.3 Transporters and Waybill

While Part B of the LPA NVD is optional for completion in Victoria and South Australia, in the other states this section is required under state legislation requiring the transporter to carry with the consignment a copy of the LPA NVD. The version of the App used in this proof of concept trial did not allow for signing by the driver within Part B and while the purpose of the eNVD was to be completely electronic, a way to provide the driver with a copy of the eNVD needed to be available for NSW origin consignments.

The options available for providing transporters with a copy of the eNVD were via text, email or photo, sent from the supplier when the eNVD had been submitted to the NLIS database and returned for emailing to Coles and the processor.

5 Discussion

Outcomes from this project have assisted Coles in addressing issues relevant to the supply of pasture fed beef for their 'Graze' program, while providing skills and knowledge to producers with the desire to produce cattle for this market. The project was able to facilitate relationship building through the Coles supply chain and provide suppliers with evidence for verification purposes of their ability to meet third party auditable demands, as required by the Grass fed program.

The training days held covering the NLIS database and MSA demonstrated the gap in knowledge across industry in these areas. The producers attending these training days were selected by Coles and would be considered leading suppliers, however until the incentive was provided to them in the form of the Coles 'Graze' on farm program, the uptake or registration of these industry based programs was much less than anticipated.

The case studied completed focused on supply of eligible compliant cattle into the 'Graze' program, with a particular focus on late autumn/winter supply. Over the course of this project a number of stock feed manufacturers have recognised the grass fed market as an opportunity and have started manufacturing an eligible supplement. The supplement utilised in the project case study met the needs of the demonstration, however alternative eligible supplements have more recently become available that are more consistent in type and provide a more reliable outcome. A pelletised eligible supplement has proven easier to handle and cheaper to feed. The results of the eligible supplement case study did provide anecdotal evidence that meat eating quality wasn't affected by utilisation of a

novel eligible supplement, as well as useful information regards selection of cattle type, including sex and start weight for finishing on a supplement.

The feed testing case studies conducted over the summer/autumn season of 2017 allowed suppliers to improve their skills in collection of feed samples and reading Feedtest® results whilst more closely monitoring their pastures and cattle performance to finish cattle to Coles 'Graze' specifications out of season. None of the suppliers involved had routinely tested their pastures for nutritive values over the finishing period to ensure their cattle were meeting target growth targets in relation to feed energy, protein and fibre values.

The final case study comparing the irrigated forages demonstrated the importance of using forage crops in a strategic manner, if utilised as a summer/autumn feed source they must be well costed out and placed strategically into the whole farm system to ensure profitability is maximised. Both the sorghum and rape/millet mix provided an adequate source of feed; however the sorghum was more difficult to manage in regards to growth and maximising stocking rate, while the rape/millet mix cost less to set up and fitted into the whole system more easily. In the year following, the case study business sowed a mixed rape/millet/sorghum crop; anecdotally this was looking like a profitable alternative.

The eNVD proof of concept was completed as a replacement for one of the six training days and the targeted Livestock Data Link package for Coles. Numerous benefits from implementing an eNVD system within the Coles 'Graze' supply chain have been recognised and/or validated through this proof of concept trial.

A significant result for Coles utilising this system is the immediacy of access to daily consignment information through receipt of the three declarations, before or on the day of processing. With improved access Coles are able to maintain a more efficient supplier information database, interrogate data more readily and ensure accuracy of NVD and 'Graze' program information is improved and is routinely checked.

Direct access to eNVD's and subsequent interaction with suppliers has the capacity to strengthen supply chain relationships, reducing opportunities for misinformation and timely correction of issues as they occur.

The direct link removes livestock agents as the conduit for information feedback reducing the chance for misrepresentation and ensuring transparency between the supplier and Coles.

An integrated eNVD system allows Coles to easily retrieve transportation and curfew information for each consignment, important where issues surrounding MSA and 'Graze' eligibility, animal welfare or carcass grading is concerned.

An eNVD system will allow Coles to update their 'Graze' program declarations more easily as changes are required. With an improved direct link into their supply base it would ensure suppliers are notified in a timely way and can take appropriate action.

As increasing amounts of vendor information is required for Graze verification and eligibility an eNVD system that could compile a compliant NLIS pre kill summary would also have the ability to

protect and retain commercial supplier information within the Coles supply chain where service kill contracts with processors are in place.

An eNVD system would also build on the current requirements for each supplier to complete annual self-assessment audits using iPad devices. The adoption of an eNVD process would complement the technology already in use, or in some instances require suppliers to become more proficient in the use of mobile devices, ultimately having a beneficial impact on the amount and integrity of captured data.

Scaling the eNVD system up to include the entire Coles beef supply chain, across all categories, i.e. feedlot and butcher cattle would also be possible and achieve the same advantages across the supply base as with the 'Graze' suppliers. There would also be an opportunity to include eNVD's within the Coles lamb supply chain, using the same methodology.

Utilising Sapien Technology and their eNVD software into the future will provide an interim solution for Coles, whereby a system could be put in place without processors having an IT program ready to accept eNVD's, that is fully electronic. Developing an improved eNVD App that complies with the Integrity Systems Company eNVD platform requirements, whilst still using email as the delivery method to suppliers, processors and Coles would achieve the results Coles need. This could occur without having to wait for industry to be in a position to accept eNVDs. Other options may also be available and would require scoping prior to development of a subsequent and permanent App.

5.1 Meeting project objectives

5.1.1 Through case studies demonstrate the profitability of pasture based feeding programs for supply into 'Graze' and demonstrate pasture fed production systems that meet Coles company and MSA carcass specifications

Case studies were designed and delivered through the course of the project with 'Graze' producers interested in growing their supply numbers into the Coles grass fed program and extending their turn off time into late autumn/winter.

The first case study completed examined the eating quality outcomes and profitability of using a grass fed eligible supplement to finish heifers on, while compared to a cereal grain supplement on the same cohort of heifers. The results demonstrated that feeding an eligible supplement could be profitable and have no negative impacts on eating quality. The case study did highlight the importance of feeding the right cattle type an eligible supplement, understanding the nutritional values of the supplement and the importance of monitoring weight gain and turn off times.

The second case study worked with four different Coles' 'Graze' suppliers to gain a better understanding of the relationship between feed quality, time of year and animal performance pre turn off to meet Coles specifications. During late summer until one month post the autumn break, feed tests were completed on pastures and supplements (Hay, silage, pellets) being utilised before cattle were turned off for slaughter. The participating producers were trained in collection of pasture/supplements for feed testing as well as provided advice on the nutritional value of feeds in relation to energy, protein and fibre along with their associated interactions and impact on management pre slaughter, dark cutting or eating quality attributes. Results from the feed testing case studies were presented back to the suppliers via a webinar and individual written analyses.

The final case study examined two different irrigated forage systems for finishing cattle on to extend the time of turn off as well as incorporate a system that optimised production across the whole enterprise. Forage sorghum and a rape/millet mix were compared for profitability and cattle finishing. A number of consignments were turned off both systems from February until June. The results indicated both forages provided the opportunity to lengthen finishing times, although the sorghum was most costly to produce and was more difficult to manage. Overall the rape/millet mix provided the better outcomes, although both worked into a whole of system approach would make a feasible option for supplying into the ‘Graze’ program.

5.1.2 Demonstrate the eating quality and retail readiness of cattle finished on pasture and eligible supplements

A component of the case study assessing eligible supplements for the Coles Grass fed program also examined the carcass and meat eating quality (MSA) results. Figures 6 to 7 show a supplementary fed carcass and striploin at boning. After 7 days ageing the strip loin was cooked and eating quality assessed by Cole’s staff. Overall the assessment by Coles determined the eating quality of the animals was equal to or greater than any traditional grain finished cattle. The retail yield was affected due to excess external fat levels that had to be trimmed to the 6 mm retail specification, Fig 8 and 9.



Fig 6. Supplementary fed heifer in the chiller



Fig 7. Striploin boned from supplemented carcass



Fig 8. Striploin cut showing external fat cover



Fig 9. Striploins trimmed to Cole’s retail specification

Test Group	HSCW (kg)	Oss	AusMarb	MSA Marb	Meat Colour	Fat Colour	pH	MSA Index
Body No 67	223	170	3	510	2	1	5.42	61.93
Test grp Avg	231	135	0.6	260	2.5	1	5.51	60.4

Table 4. MSA grading results for body number 67 and average for the consignment

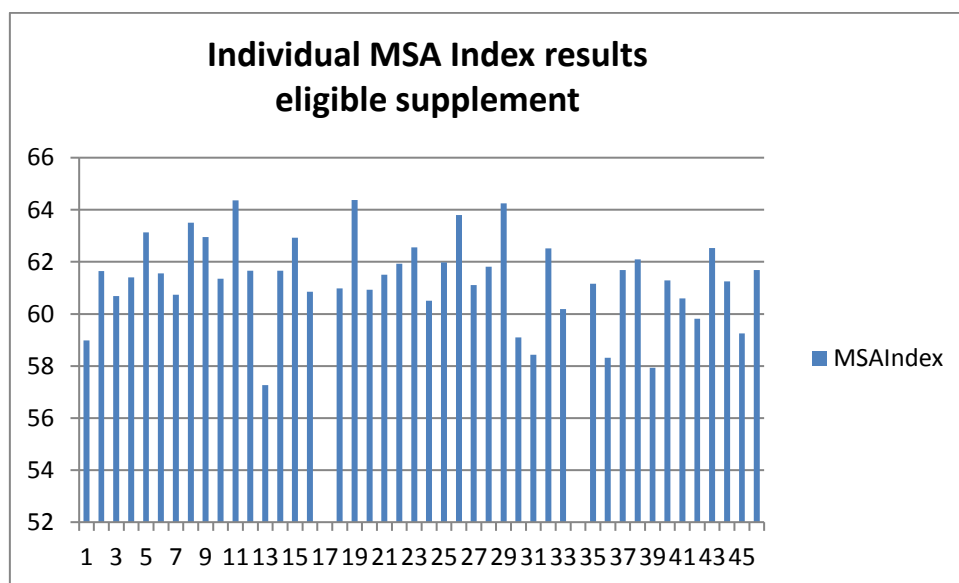


Fig 10. MSA Index results for heifers supplemented whilst grazing over autumn

The MSA index results (as a measure of eating quality) for the heifers fed on the eligible meal supplement averaged 60.4, the average Victorian MSA index for cattle in 2015 was 59.61. Two supplemented carcasses did not meet MSA grading requirements, both carcasses were downgraded for high pH/dark cutting.

Overall the case study demonstrated using that particular legume based eligible supplement did not have any negative effects on the eating quality or retail readiness/appeal. There were no noticeable differences between the end results of the cattle fed on the cereal supplement or the grass fed eligible supplement. When this particular case study was completed the Coles grass fed program along with other industry grass fed programs were new and eligible supplements relatively untested. Since then a number of eligible supplements have become available and are being widely used in the pasture fed market with no known adverse effects on eating quality. The most important aspects of utilising these eligible supplements are the profitability, rate of weight gain and ensuring the cattle always have access to pasture within their feeding environment. The inclusion of the eligible supplements ensures the cattle are on a rising plane of nutrition pre slaughter which in turn assists with MSA grading, earlier turn off and improved eating quality for the consumer.

5.1.3 Provision of a resource document for producers wanting to produce cattle for pasture fed supply chains

A resource manual for beef producers has been developed as part of another project funded through a Donor Company project with Meat and Livestock Australia (MLA) and McDonalds. The manual titled 'Pasture fed beef, A Resource for beef suppliers' when published on the MLA website will be available to all suppliers involved in producing cattle to meet pasture fed accredited markets. A section within the document refers specifically to the Coles 'Graze' Pasture fed program.

5.1.4 Provision of skills and knowledge in NLIS and MSA to assist producers in making verifiable declarations

Formal evaluation and feedback from Cole's suppliers and procurement staff attending the training days was very positive and demonstrated an improvement in skills, knowledge and understanding of MSA and using the NLIS database. The majority of suppliers attending the training days had previously not accessed the MyMSA web page or logged into their NLIS account. By the end of the session all the suppliers had a basic MSA understanding and could understand their feedback reports on MyMSA. As Coles do not discount on MSA ungrades, exposure to MSA as a feedback system was not relevant to Graze suppliers in a non-compliance sense. The incentive to better understand MSA has been delivered through the 'Graze' program and the underpinning accreditation requiring producers to meet standards that they are audited against by a third party. The auditors also recommended training in MSA as a means to ensure cattle health and welfare is maintained, as poor outcomes in those areas would be reflected in MSA grading results.

The Coles Grass fed beef standards also require all cattle within the program to be life time traceable. In order to ensure that, suppliers would need to be able to access, monitor and manage their NLIS database, particularly traders who supplied into the 'Graze' brand.

6 Conclusions/recommendations

The project objectives set out by Coles to actively engage with their supply base to produce verifiable grass fed beef year round , that is profitable and meets Coles requirements, has been demonstrated. Ongoing work by Coles will be required to continue to build producer confidence in moving away from their traditional system for finishing cattle, into out of season supply for the Grass fed program, particularly as the market grows. Value chain relationships and price incentives will be essential to ongoing success.

Over the course of this project and beyond, Coles have demonstrated a willingness to investigate and engage in industry driven initiatives and where possible adopt the tools or resources into their on farm programs, procurement and marketing strategies. Supplier training days on using the NLIS database and the MyMSA feedback tools linked into Coles Grass fed supplier obligations provided the incentive for producers to inform themselves and become skilled in using these programs. The lack of knowledge and ability to use these programs within their businesses without a market driven incentive shows industry as a whole needs to better understand what drives producers to use these tools and how they are able to be successfully integrated into livestock production businesses. The evaluations and personal feedback from the Coles training days highlighted the need for small group training, preferably linked to a specific market or quality assurance program with interactions from all segments of the value chain.

Production of cattle that meet Coles Grass fed requirements for out of season supply has been demonstrated through the completed case studies as achievable. This occurs when the end market recognises the additional cost of production incurred by the supplier and compensates them accordingly. The other factor which has been clearly shown as just as important as pricing signals, is the relationship built between the supplier and the 'Graze' brand they are producing cattle for. Producer 'ownership' of the brand has been highlighted as a very significant reason for changing an established production system to meet Grass fed requirements. The case studies have provided a resource for other suppliers targeting Grass fed markets along with improving producer skills in measuring and monitoring their pasture base. As a southern beef industry aiming to target premium branded beef markets, continuing attention needs to be given to providing the resources and training necessary to adequately equip producers to achieve this outcome. Skill development to manage the relationship between the pasture base, cattle growth rates and pre slaughter management to ensure high compliance and an efficient sustainable value chain remains important.

A changed emphasis from the initial project objectives resulted in a focus on investigating an eNVD solution for Coles Grass fed suppliers in place of developing the targeted LDL engagement package for Coles. The proof of concept trial delivered an 'App' that was successfully used by all 'Graze' suppliers over the two week period it ran. The results from the proof of concept notwithstanding some issues around connectivity, processor technology systems and usability was very positive with suppliers wanting to continue to use the eNVD as a simplified process in comparison to the paper based one.

There are many barriers to the industry wide use of an eNVD, however there are ways to negotiate around the obstacles where alternative solutions are sought. For Coles this resulted in an alternative delivery mechanism for the eNVD to the processor through the use of email. A fully electronic

process was delivered to the point where the animals were received at the processor. The subsequent results of the trial have meant Coles have continued to progress the development of a permanent eNVD system across their beef supply chain. This work demonstrates the ability of industry developed tools being adopted where market pull through is initiated.

Livestock Data Link remains an option for Coles as a feedback tool throughout their supply chain, further investigation and potential tailoring of the product to meet Cole's requirements needs to be completed.

7 Key messages

- Suppliers to the Coles 'Graze' brand highly value their relationship with Coles and are willing to invest in and adopt strategies that ensure they meet Cole's requirements. This is due to the transparency and engagement through the value chain where trust and confidence is shared between the market and the supplier.
- Industry developed tools such as the NLIS database, MyMSA feedback and eNVDs will be more readily adopted where verified on farm programs underpin the supply of cattle into branded beef products.
- Training in the use of the NLIS database and MyMSA achieve greater results in skills and adoption where small groups are engaged and producers can learn from peers and actively participate.
- The use of eNVDs in place of the paper based or the 'eDec' system is a preferred option for Coles 'Graze' suppliers. The combination of all the required declarations (LPA NVD, MSA, Coles Grass fed) into one 'App' is an efficient and practical tool.
- Supply of Grass fed cattle meeting target market specifications is achievable out of season (autumn/ winter) where strategies are put in place to manage weight gain and pre slaughter management of cattle; on pasture, forage crops or assisted with an eligible supplement.
- To ensure continual confidence and success within the Coles Grass fed value chain appropriate support and processes will be required to build capability and maintain ongoing commitment for future supply.

8 Bibliography

Meat and Livestock Australia (2016), *2015 Australian beef eating quality audit*, Meat and Livestock Australia Limited, North Sydney.

9 Appendix

9.1 Training days

9.1.1 Evaluations



Coles Training days
evaluations_all.pdf

9.1.2 Pre and Post skills training day results



Results final_training
days pre and post ski

9.2 Case studies



Supplementary
feeding in a grass fec

9.2.1 Supplementary feeding in a grass fed system

9.2.2 Forage crops as part of a grazing strategy to fill grass-fed supply gaps



Forage crops as part
of a grazing strategy

9.2.3 Autumn feed testing case study



Coles feed test
analysis case study.p

9.3 eNVD Proof of concept

9.3.1 eNVD proof of Concept report



Coles eNVD PoC
report FINAL.pdf

9.4 Protein and energy calculator



Excess protein
calculator.xlsx