

# finalreport

**Project code:** W.LIV.0373  
**Prepared by:** Dr Simon Quigley and  
Prof. Dennis Poppi  
University of Queensland  
**Date published:** March 2011  
**ISBN:** 9781741915266

**PUBLISHED BY**

Meat & Livestock Australia Limited  
Locked Bag 991  
NORTH SYDNEY NSW 2059

## Analysis of potential feed samples for the Indonesian feedlot industry and for inclusion in nutrition models for Indonesian cattle feeding systems

Meat & Livestock Australia acknowledges the matching funds provided by the Australian Government to support the research and development detailed in this publication.

This publication is published by Meat & Livestock Australia Limited ABN 39 081 678 364 (MLA). Care is taken to ensure the accuracy of the information contained in this publication. However MLA cannot accept responsibility for the accuracy or completeness of the information or opinions contained in the publication. You should make your own enquiries before making decisions concerning your interests. Reproduction in whole or in part of this publication is prohibited without prior written consent of MLA.

## **Abstract**

The Indonesian feedlot industry is a major destination of beef cattle exported from northern Australia. Indonesian feedlot industry stakeholders indicated to MLA that a range of potential, novel feedstuffs, of which little or no nutritional information exists, may be available for inclusion in feedlot rations for cattle imported from northern Australia. The purpose of this project was for the University of Queensland (UQ) to co-ordinate the collection and analysis of feed samples collected by Indonesian feedlot industry stakeholders and to interpret feed analysis results and to submit reports to MLA and the Indonesian feedlot industry stakeholders. MLA promoted the service amongst stakeholders and UQ prepared kits for feed sample collection and processing, which were distributed by MLA. There were no subsequent requests by stakeholders to submit samples for analysis, hence no feed analysis was conducted and no reports were prepared. The reason for the poor uptake of this service is unknown but warrants follow-up to facilitate better uptake if similar projects are envisaged by MLA in the future.

## **Executive Summary**

The Indonesian feedlot industry is a major destination of beef cattle exported from northern Australia. The industry is expanding but increasing pressure on available land for staple food production means the availability of traditional cattle feed sources is decreasing. In contrast, new industries are emerging which may potentially provide alternative cattle feed sources which were not previously available. Indonesian feedlot industry stakeholders indicated to MLA that a range of potential, novel feedstuffs may be available for inclusion in feedlot rations for cattle imported from Australia of which little or no nutritional information exists. The purpose of this project was for the University of Queensland (UQ) to co-ordinate the collection and analysis of feed samples collected by Indonesian feedlot industry stakeholders. Results and interpretation of analyses would then be reported to MLA and the Indonesian feedlot industry stakeholders. It was anticipated that UQ would provide the stakeholders and MLA with information on the potential inclusion of novel feed sources in the feedlot rations of cattle imported from Australia. MLA promoted the service amongst stakeholders and UQ prepared kits for feed sample collection and processing, which were distributed by MLA, and organised USA Government import approval for analysis in the Dairy One Laboratory, USA. However, there were no subsequent requests by stakeholders to submit samples for analysis, hence no feed analysis was conducted and no reports were prepared. The reason for the poor uptake of this service by the stakeholders is unknown but warrants follow-up to facilitate better uptake if future similar projects are envisaged by MLA.

## Contents

	Page
<b>1</b>	<b>Background .....5</b>
<b>2</b>	<b>Project Objectives .....5</b>
<b>3</b>	<b>Methodology .....5</b>
3.1	Promotion of project to stakeholders.....5
3.2	Kit preparation and distribution, and sample submission .....5
<b>4</b>	<b>Results and Discussion .....6</b>
<b>5</b>	<b>Success in Achieving Objectives.....7</b>
5.1	Objective 1 .....7
5.2	Objective 2 .....7
<b>6</b>	<b>Impact on Meat and Livestock Industry – now &amp; in five years time .....7</b>
<b>7</b>	<b>Conclusions and Recommendations.....7</b>
7.1	Conclusions.....7
7.2	Recommendations .....7
<b>8</b>	<b>Appendix.....8</b>
8.1	Application and approval to submit feed samples for analysis 8
8.2	Instruction 1. Sample collection .....11
8.3	Instruction 2. Sample processing .....13
8.4	Instruction 3. Sample packaging .....15
8.5	Instruction 4. Sample shipment .....16

## **1 Background**

Meat & Livestock Australia (MLA) recently funded a review of feedstuffs that are currently used and potentially could be used in feedlots in South East Asia (W.LIV.0351). Indonesian stakeholders indicated a range of potential, novel feedstuffs may be available of which little or no nutritional information exists. The purpose of this project was for the University of Queensland (UQ) to co-ordinate the collection and analysis of feed samples collected by Indonesian feedlot industry stakeholders. The University of Queensland was to co-ordinate the collection and submission of feed samples from Indonesian feedlot industry stakeholders and interpret feed analysis results, incorporate the analysis results into the development of nutritional and growth models for cattle in Indonesia which are being developed through existing ACIAR research projects and prepare reports for MLA and Indonesian feedlot industry stakeholders. The current project would give UQ access to a greater number and range of samples than within the existing ACIAR project and allow UQ to test the models over a greater range of feedstuffs making the models more robust.

## **2 Project Objectives**

1. University of Queensland will prepare reports for MLA and Indonesian feedlot industry stakeholders on the nutritive content and suitability for feedlot rations of no more than 30 individual feedstuffs collected by Indonesian stakeholders and submitted for analysis at Dairy One.
2. University of Queensland will develop a database containing all information generated during the project and include in the development of nutritional models relevant to Indonesian cattle production systems.

## **3 Methodology**

### **3.1 Promotion of project to stakeholders**

All promotions of this project to potential stakeholders in Indonesia were the responsibility of MLA through their existing stakeholder networks.

### **3.2 Kit preparation and distribution, and sample submission**

The University of Queensland prepared 30 kits for distribution to stakeholders. Each kit contained brown paper bags, zip-lock plastic bags, a marking pen, a sample label card and instructions for sample collection, sample processing, sample packaging and sample shipment for analysis by Dairy One (Appendix 1). All instructions were translated into Bahasa.

The first 10 kits (kits 1 to 10) were delivered to the Ibis Hotel (Turbot St, Brisbane) on the 1<sup>st</sup> of May 2009 for distribution by MLA to Indonesian feedlot industry stakeholders who were attending Beef Week at Rockhampton. Kits 11 to 20 were shipped to MLA's North Sydney office on the 15<sup>th</sup> of May 2009 for MLA to deliver and distribute to Indonesian feedlot industry stakeholders. The remaining kits (kits 21 to 30) were shipped to Sharon Dundon in Bahrain on the 28<sup>th</sup> of August 2009 and were received in Bahrain on the 9<sup>th</sup> of September 2009.

## **4 Results and Discussion**

Feed sample kits were prepared and distributed by MLA (and UQ in the case of kits sent to Bahrain), however UQ received no requests from feedlot industry stakeholders regarding the submission of samples for analysis. Therefore, there were no results on the nutritive content of individual feeds to report to the Indonesian feedlot industry stakeholders and to MLA. In addition, the database detailing the nutritive content of feeds and their inclusion in models specific to cattle in Indonesia could not be undertaken. It was hoped that a range of recommendations could be made to the feedlot industry stakeholders in Indonesia on the potential use of novel feed resources to improve cattle production, however without any samples submitted this was not possible.

It is unknown why there was a lack of interest in the project from Indonesian feedlot industry stakeholders. Early indications were that the stakeholders were keen to use the service and had identified a number of potential feeds of which they did not know the nutritive value. It would be of interest to follow-up with the recipients of the kits to ascertain why the service was not taken up after the initial enthusiasm. It is difficult to speculate on what these reasons might be but an understanding of this might facilitate better uptake if MLA were to pursue a similar approach in the future.

## **5 Success in Achieving Objectives**

### **5.1 Objective 1**

Objective 1 - University of Queensland will prepare reports for MLA and Indonesian feedlot industry stakeholders on the nutritive content and suitability for feedlot rations of no more than 30 individual feedstuffs collected by Indonesian stakeholders and submitted for analysis at Dairy One

This objective was not achieved. The University of Queensland prepared kits and distributed them as requested by MLA. However, no requests for sample analysis were received by UQ. The reasons for this lack of response from kit recipients remain unknown.

### **5.2 Objective 2**

Objective 2 - University of Queensland will develop a database containing all information generated during the project and include in the development of nutritional models relevant to Indonesian cattle production systems

This objective was not achieved. As no samples were submitted for analysis the database could not be generated and the information could not be included in the development of nutritional models relevant to Indonesian cattle production systems.

## **6 Impact on Meat and Livestock Industry – now & in five years time**

This project did not analyse any samples of novel feeds that may potentially be included in the rations of cattle imported from Australia for feeding in feedlots in Indonesia. It is unknown if novel potential feeds exist or if stakeholders were simply not interested in utilising this service. However, it is important that new or increased quantities of existing feeds are identified in Indonesia in the near future to ensure the sustainable growth of the Australian live cattle export industry to Indonesia. The availability of feeds is essential for the ongoing expansion of the feedlot industry in Indonesia which may have a significant impact on the northern Australian cattle industry in the future.

## **7 Conclusions and Recommendations**

### **7.1 Conclusions**

1. No conclusions can be drawn from this project as no samples were submitted for analysis, so no conclusions can be made on the suitability of feeds for cattle in Indonesia or on the development of nutritional models relevant to Indonesian cattle production systems.

### **7.2 Recommendations**

1. It is recommended that kit recipients are contacted to ascertain why there was no uptake of the service. It is unknown if the kits and associated instructions were too complicated or alternatively if there were insufficient quantities of novel feeds to warrant testing.

## **8 Appendix**

### **8.1 Application and approval to submit feed samples for analysis**

#### **Approval for analysis of feed samples**

Meat and Livestock Australia (MLA) have agreed to analyse samples for Indonesian stakeholders for potential use in the Indonesian feedlot industry. The analysis will be approved by MLA, co-ordinated by the University of Queensland (UQ), Australia, with sample analysis conducted by Dairy One, USA.

Indonesian clients will be required to complete the attached form and submit it to MLA. MLA will be required to approve which, if any, samples will be permitted to be submitted for analysis at Dairy One. MLA will forward the form with approvals to UQ. UQ will then provide the client with protocols for sample collection and processing, information to be included with the sample for Dairy One and US Customs and details for sample submission and shipping. Any individual or organisation which does **NOT** receive approval from MLA prior to submitting samples for analysis will need to pay any costs themselves.

---

#### **Persetujuan Analisa Sampel Pakan**

Meat and Livestock Australia (MLA) telah menyetujui untuk menganalisa sample-sampel pakan dari stakeholder di Indonesia untuk digunakan pada industri feedlot (penggemukan sapi) di Indonesia. Persetujuan analisa pakan akan dilakukan oleh MLA, selanjutnya dikoordinasikan oleh Universitas Queensland (UQ), Australia. Analisis sample akan dilakukan oleh Dairy One, Amerika Serikat (AS).

Klien Indonesia diminta untuk melengkapi formulir terlampir dan mengirimkan formulir tersebut ke MLA. MLA diminta untuk memberi persetujuan apakah sample tersebut dapat dianalisis di Dairy one. MLA selanjutnya akan meneruskan formulir yang telah mendapatkan persetujuan ke UQ. UQ selanjutnya akan menyediakan kepada klien petunjuk penanganan dan pengumpulan sampel, informasi-informasi penting berkaitan dengan sample untuk Dairy One dan pabean AS, serta petunjuk tentang pengajuan dan pengiriman sampel. Bila terdapat perseorangan atau organisasi yang tidak menerima persetujuan dari MLA sebelum pengiriman sample untuk dianalisis maka perseorangan atau organisasi tersebut harus bersedia membayar sendiri jika terdapat biaya berkaitan dengan sampel tersebut.

## Analysis of potential feed samples for the Indonesian feedlot industry and for inclusion in nutrition models for Indonesian cattle feeding systems

---

**Instruksi untuk Melengkapi “ Pengurusan sampel untuk dianalisis” Formulir terlampir / Instructions for completing the “Intention to submit feed samples for analysis” form attached.**

### *Klien Indonesia*

<sup>1</sup>Menulis nama klien.

<sup>2</sup>Menulis alamat klien.

<sup>3</sup>Menulis alamat email klien.

<sup>4</sup>Menulis nomor fax klien.

<sup>5</sup>Beri tanda centang pada kotak metode komunikasi yang disukai dari UQ (melalui email atau fax).

<sup>6</sup>Menulis nama sampel yang akan dianalisis dalam bahasa **Inggris** (misalnya: fermented cassava waste; elephant grass).

<sup>7</sup>Menulis deskripsi sampel (misalnya jenis pakan (hijauan, sisa hasil ikutan, dan sebagainya), perkiraan kandungan bahan kering, sumber sampel, ketersediaan musiman, produksi (ton bahan kering/tahun atau /bulan, lokasi asal pakan , dsb.).

<sup>8</sup>Menulis tanggal pengiriman ke MLA.

<sup>9</sup>Menulis jumlah halaman yang dikirim ke MLA.

<sup>10</sup>Klien diminta untuk mengirim formulir ke MLA melalui fax atau email yang tersedia pada bagian 9.

### *Meat and Livestock Australia*

<sup>11</sup>MLA to review listed feedstuffs proposed for analysis and check box for approval or non-approval of analysis.

<sup>12</sup>MLA to indicate who approved analysis.

<sup>13</sup>MLA to indicate date approved.

<sup>14</sup>MLA to send form to UQ either by fax or email provided in section 13.

<sup>15</sup>MLA to enter date sent to UQ, prior to sending.

### *University of Queensland*

<sup>16</sup>Enter date form received.

<sup>17</sup>Allocate sample number and add to database.

<sup>18</sup>UQ to send sample collection, processing, packaging and labelling protocols (including sample identification number) to client in Indonesia, either by fax or email as provided by client in section 3 and 4.

<sup>19</sup>UQ to complete Dairy One and US customs information and send to client.

<sup>20</sup>UQ to send shipping information and procedures to client.

## Analysis of potential feed samples for the Indonesian feedlot industry and for inclusion in nutrition models for Indonesian cattle feeding systems

---

<b>Pengurusan analisis oleh stakeholder industri feedlot Indonesia / Intention to submit feed samples for analysis by Indonesian feedlot industry stakeholders</b>			
<sup>1</sup> Nama klien (client name):			
<sup>2</sup> Alamat klien (client address):			
<sup>3</sup> Alamat email klien (client email):			
<sup>4</sup> Nomor fax klien (client fax):			
<sup>5</sup> Metode komunikasi yang disukai (preferred contact method):		<input type="checkbox"/> Email	<input type="checkbox"/> Fax
<sup>6</sup> Sampel pakan (feed sample)	<sup>7</sup> Deskripsi sampel (Description of sample)	<sup>11</sup> MLA approved	
		<input type="checkbox"/> Yes	
		<input type="checkbox"/> No	
		<input type="checkbox"/> Yes	
		<input type="checkbox"/> No	
		<input type="checkbox"/> Yes	
		<input type="checkbox"/> No	
		<input type="checkbox"/> Yes	
		<input type="checkbox"/> No	
<sup>8</sup> Tanggal pengiriman ke MLA (date sent to MLA):		<sup>9</sup> Jumlah halaman yang dikirim ke MLA (number of pages sent to MLA):	
<sup>10</sup> Meneruskan formulir yang sudah diisi ke MLA untuk mendapatkan persetujuan sebelum sampel dapat diproses atau dikirim untuk dianalisis (forward this completed form to MLA for approval prior to samples can be processed and sent for analysis). Attention MLA: Dr David Beatty MLA MLA Fax: +61 2 9463 9100 MLA Email: dbeatty@mla.com.au			
<sup>12</sup> Approved by:		<sup>13</sup> Date approved:	
<sup>14</sup> MLA to forward approval form to University of Queensland (UQ) Attention UQ: Simon Quigley, UQ UQ Fax: +61 7 5460 1444 UQ Email: s.quigley@uq.edu.au			
<sup>15</sup> Date sent to UQ:			
<sup>16</sup> Date received by UQ:			
<sup>17</sup> Sample number allocated and entered by UQ		<input type="checkbox"/>	
<sup>18</sup> Sample collection and processing procedures sent from UQ to client		<input type="checkbox"/>	
<sup>19</sup> Dairy One and US customs information sent from UQ to client		<input type="checkbox"/>	
<sup>20</sup> Shipping information and procedures sent from UQ to client		<input type="checkbox"/>	

# Analysis of potential feed samples for the Indonesian feedlot industry and for inclusion in nutrition models for Indonesian cattle feeding systems

---

## 8.2 Instruction 1 - Sample collection

MLA have approved the submission of the following samples (Sample name) for analysis by Dairy One.

UQ have allocated a UQ sample identification number (Sample ID) for each sample to be submitted, as indicated in the table below

Sample name	UQ sample identification number

For each sample to be analysed follow the procedure

1. Take sub-samples (~100gram each sub-sample) from 12 different locations in the feed to be analysed. Samples should be representative. Avoid edges and outer-layers of stockpiled feedstuffs.
2. For unprocessed feeds (e.g. forages, roughages, tree legumes) cut sub-samples to approximately 2.5 cm length.
3. Place the 12 sub-samples in a clean plastic container and mix thoroughly.
4. Label a large brown paper bag with UQ sample identification number (e.g. UQXXX) and sample name.
5. Remove approximately 600gram of the mixed sample from the plastic container and place in labelled large brown paper bag.
6. Your sample is now ready for processing, see Instruction 2.

---

### Petunjuk 1 - Pengumpulan Sampel

MLA telah menyetujui pengajuan sample-sampel berikut (nama sampel) untuk dianalisa di Dairy One.

UQ selanjutnya mengalokasikan sebuah nomor identitas pada sample UQ (Identitas sampel). Untuk setiap sampel yang dikirim akan dideskripsikan pada tabel berikut.

Nama sampel	Nomor identitas sampel UQ

Untuk setiap sampel yang akan dianalisa harus mengikuti prosedur sebagai berikut

1. Ambil sub-sampel (~100gram untuk setiap sub-sampel) dari 12 lokasi yang berbeda dari pakan yang akan dianalisa. Pengambilan sampel harus betul-betul representative (mewakili pakan yang

## **Analysis of potential feed samples for the Indonesian feedlot industry and for inclusion in nutrition models for Indonesian cattle feeding systems**

---

ada). Hindari pengambilan sampel pada bagian pinggir dan lapisan luar dari tumpukan bahan pakan.

2. Pada bahan pakan yang tidak mengalami pemrosesan (contoh hijauan, pakan berserat, legum pohon), lakukan pemotongan sub-sample dengan panjang sekitar 2,5 cm.

3. Letakkan 12 sub-sample-sub-sampel tersebut pada baki plastik yang bersih dan selanjutnya campurlah sub-sampel tersebut secara merata.

4. Berikan label pada sebuah kantong kertas besar berwarna coklat yang telah diberi nomor identitas sampel UQ (contoh UQXXX) dan nama sampel.

5. Pindahkan sekitar 600 gram sampel yang telah dicampur secara merata dari baki plastic dan masukkan pada kantong kertas besar berwarna coklat.

6. Sampel anda siap untuk diproses, lihat Petunjuk 2.

---

# Analysis of potential feed samples for the Indonesian feedlot industry and for inclusion in nutrition models for Indonesian cattle feeding systems

---

## 8.3 Instruction 2 - Sample processing

Complete sample collection protocol in Instruction 1.  
Sample should be in labelled large brown paper bag.  
Prior to shipment samples need to be dried, preferably by oven at 60°C.

### *Option 1. Oven drying (Preferred option)*

1. Set oven to 60°C
2. Place mercury thermometer in oven and check temperature (leave thermometer in oven and check temperature every 24 h.
3. Place large brown paper bag containing sample in oven until dry to constant weight
4. Record

Time in oven	Date	Time	Sample weight (gram)
Sample placed in oven			
Sample 48 h in oven			
Sample 72 h in oven			
Sample 96 h in oven			
Sample 120 h in oven			
Sample 144 h in oven			

5. When sample weight is constant at two consecutive times, remove from oven.

### *Option 2. Sun drying (Not preferred option)*

1. Transfer sample from brown paper bag to large aluminium tray, basket lid, concrete drying platform, or similar in direct sunlight.
2. Spread sample in a thin, single layer across tray.
3. Ensure sample can not be disturbed by birds, animals, wind.
4. Move samples indoor during the night and return to sunlight the following day.
5. Record

Time in sun	Date	Time	Sample weight (gram)
Sample placed in sun			
Sample 48 h in sun			
Sample 72 h in sun			
Sample 96 h in sun			
Sample 120 h in sun			
Sample 144 h in sun			

6. When sample weight is constant at two consecutive times, remove from sun.
  7. The sample is now ready for packaging, see Instruction 3.
-

# Analysis of potential feed samples for the Indonesian feedlot industry and for inclusion in nutrition models for Indonesian cattle feeding systems

---

## Petunjuk 2 - Pemrosesan sampel

Lengkapi prosedur koleksi sampel sesuai Petunjuk 1.

Sampel sebaiknya dikemas di kantong kertas besar berwarna coklat.

Sebelum dikirim sampel-sampel harus dikeringkan, disarankan dengan menggunakan oven pada suhu 60°C.

### *Pilihan 1. Pengeringan dengan oven (Disarankan)*

1. Atur oven pada suhu 60°C

2. Letakkan termometer air raksa di dalam oven dan cek suhunya (tinggalkan termometer di dalam oven dan cek suhunya setiap 24 jam).

3. Tempatkan kantong kertas besar berwarna coklat yang berisi sampel ke dalam oven untuk mengeringkan sampel sampai berat sampel menjadi konstan

4. Lakukan pencatatan

Waktu di dalam oven	Tanggal	Jam	Berat sampel (gram)
Pemasukan sampel			
Setelah 24 jam			
Setelah 72 jam			
Setelah 96 jam			
Setelah 120 jam			
Setelah 144 jam			

5. Jika berat sampel sudah konstan pada dua kali waktu penimbangan berturut-turut, maka sampel dapat dikeluarkan dari oven.

### *Pilihan 2. Pengeringan dengan sinar matahari (Tidak disarankan)*

1. Pindahkan sampel dari kantong kertas berwarna coklat pada baki aluminium berukuran besar, tutup ember, plataran yang telah disemen atau sejenisnya yang terkena sinar matahari.

2. Sebar sampel menjadi tipis, satu lapis pada permukaan baki atau tempat penjemur lainnya

3. Pastikan sampel tidak terganggu oleh burung, ternak atau tiupan angin.

4. Pindahkan sampel-sampel ke dalam ruangan pada malam hari dan kembali dijemur pada siang hari berikutnya.

5. Lakukan pencatatan

Waktu pengeringan dengan sinar matahari	Tanggal	Jam	Berat sampel (gram)
Sampel mulai dijemur			
Penjemuran selama 48 jam			
Penjemuran selama 72 jam			
Penjemuran selama 96 jam			
Penjemuran selama 120 jam			
Penjemuran selama 144 jam			

6. Jika berat sampel sudah konstan pada dua kali waktu penimbangan berturut-turut, maka sampel dapat diambil dari penjemuran.

7. Sampel selanjutnya siap untuk dikemas, lihat Petunjuk 3.

## 8.4 Instruction 3 - Sample packaging

Sample should be dried to a constant weight prior to packaging following Instruction 2 - Sample processing.

For each sample

1. Label two plastic zip-lock bags with Sample ID and Sample name (as provided in Instruction 1).
  2. Label sample card insert with Sample ID and Sample name (as provided in Instruction 1).
  3. Place labelled sample card insert in one of the labelled plastic zip-lock bags.
  4. Place dried sample in plastic zip-lock bag with labelled sample card insert.
  5. Seal zip-lock bag containing sample and labelled sample card insert.
  6. Place bag containing sample and sample card insert inside second labelled plastic zip-lock bag.
  7. Seal outer zip-lock bag.
  8. Your sample is now ready for shipment, see Instruction 4.
- 

## Petunjuk 3 - Pengepakan Sampel

Sampel-sampel sebaiknya dikeringkan sampai beratnya konstan sebelum dikemas sebagai lanjutan dari Petunjuk 2.

Untuk setiap sampel

1. Berikan label pada dua kantong plastik zip-lock dengan identitas sampel dan nama sampel (sesuai Petunjuk 1).
  2. Berikan label pada sisipan kartu sampel dengan identitas sampel dan nama sampel (sesuai Petunjuk 1).
  3. Tempatkan sisipan kartu sampel yang sudah dilabel pada salah satu kantong plastik zip-lock yang sudah dilabel.
  4. Letakkan sampel yang sudah kering pada kantong plastik zip-lock dengan sisipan kartu sampel yang sudah dilabel.
  5. Tutuplah kantong zip-lock yang berisi sampel dan sisipan kartu sampel yang sudah dilabel.
  6. Letakkan kantong berisi sampel dan sisipan kartu sampel ke dalam kantong plastik zip-lock berlabel yang kedua.
  7. Tutuplah bagaian luar kantong zip-lock.
  8. Sampel anda siap untuk dikirim, lihat Petunjuk 4.
-

### 8.5 Instruction 4 - Sample shipment

Samples should be packaged following Instruction 3 - Sample packaging. Indonesian stakeholder to organise box for shipping, make arrangements for shipping and cover all shipping costs.

The following procedures should be followed

1. For each shipment of samples the following documents supplied electronically by UQ will be required to be printed for inclusion with the shipment
    - USDA Permit
    - USDA Shipment sample list
    - UQ to Dairy One letter
    - Dairy One sample submission form
    - Dairy One Shipment sample list
  2. Place USDA Permit and USDA Shipment sample list in the envelope marked US Customs Documents. Seal envelope.
  3. Place UQ to Dairy One letter, Dairy One sample submission form and Dairy One shipment sample list in the envelope marked Dairy One Documents and seal.
  4. Place packaged sample (Instruction 3) and envelope marked Dairy One Documents in shipping box.
  5. Close shipping box and seal with packing tape around edges.
  6. Address shipping box to
    - Dairy One Forage Laboratory
    - 730 Warren Road
    - Ithaca
    - NY, USA. 14850
  7. Senders address should also be included on shipping box.
  8. Attach sealed envelope marked US Customs Documents to outside of shipping box with packing tape (DO NOT COVER Dairy One or Sender addresses).
  9. The sample is now ready for shipment. Deliver to preferred freight company for shipment to Dairy One, USA.
-

### Petunjuk 4 - Pengiriman Sampel

Sampel-sampel sebaiknya dikemas sesuai Petunjuk 3. Pengemasan Sampel. Stakeholder di Indonesia selanjutnya menyiapkan kardus untuk pengiriman, melakukan make arrangements for shipping dan membiayai semua biaya pengiriman.

Adapun Beberapa prosedur persiapan pengiriman adalah sebagai berikut:

1. Untuk setiap pengiriman sampel, dokumen-dokumen berikut yang disediakan secara elektronik oleh UQ akan diminta untuk dicetak dan diikutkan dalam pengiriman
    - Ijin dari Departemen Pertanian Amerika Serikat (USDA)
    - Daftar pengiriman sampel dari USDA
    - Surat dari UQ kepada Dairy One
    - Formulir pengajuan sampel oleh Dairy One
    - Daftar pengiriman sampel oleh Dairy one
  2. Masukkan surat ijin dari USDA dan daftar pengiriman sampel oleh ke dalam amplop bertuliskan US Customs Documents (dokumen pabean AS). Selanjutnya tutuplah amplop tersebut.
  3. Masukkan surat UQ ke Dairy One, Formulir pengajuan sampel oleh Dairy One dan Daftar pengiriman sampel oleh Dairy One ke dalam amplop bertuliskan Dairy One Documents dan selanjutnya tutuplah amplop tersebut.
  4. Letakkan sampel yang telah dikemas (Petunjuk 3) dan amplop bertuliskan Dairy One Documents ke dalam kardus pengiriman.
  5. Tutuplah kardus pengiriman dan segel dengan pita pengemas di bagian pinggir kardus
  6. Tuliskan alamat pengiriman ke:
    - Dairy One Forage Laboratory
    - 730 Warren Road
    - Ithaca
    - NY. USA. 14850
  7. Alamat pengirim harus ditulis pada kardus pengiriman
  8. Lampirkan amplop bersegel dengan tanda US Customs Documents (dokumen pabean AS) pada bagian luar kardus dengan pita kemas (DO NOT COVER Dairy One or Sender addresses).
  9. Sampel siap untuk dikirim. Pengiriman dapat dilakukan dengan menggunakan perusahaan pengiriman yang dipilih ke Dairy One, USA.
-