

memo

Summary of Business trip to Indonesia

To : Bram Wouters, Frank Joosten
From : Paul Eijmberts
Report # : R16001
Date : 5 February 2016
Subject : Business trip Indonesia

Ottevanger Milling Engineers is participating in the Dutch-Indonesian Dairy Development program of Advanced Consulting. In the first visit to Indonesia for the Dairy program, in September 2015, the selected coop's have been visited and surveyed. Findings and recommendations have been reported. The review report has been translated into Bahasa language, and communicated with the Boards of both Cooperatives.

This trip is the second visit to the same coop's, to see what has been improved, and to define and support the necessary next steps that are to be taken. The visits took place in the first week of February 2016, and during the trip Mr Amin Sutiarto (project manager West-Java projects for Trouw Nutrition Indonesia) gave support from project side.

Koperasi Peternak Sapi Perah / KP SP Saluyu – Kunigan (West Java), Indonesia

Visited: 1 February 2016
Meeting partners: Drs Ir A. Heryawan – Chairman of KPSP Saluyu
Board members – 3 persons; all members of the Board
Mr Pak Jojo – Feedmill manager
Mr Antonius Aman – Operations manager
Mr Amin Sutiarto (Atok) – Trouw Nutrition Indonesia (project manager West-java projects)
Mr Rizal Fachrudin – Trouw Nutrition Indonesia (project manager Saluyu)
Paul Eijmberts – Ottevanger Milling Engineers



The feedmill supplies two qualities feed (low protein and high protein feeds). In the last months the number of farmers buying the high protein feed has been increased. This is due to the promotion of high protein feed, and some farmers swapped over. Unfortunately the number of members, buying feeds from the Coop Feedmill, has not been increased.

- Low protein feed (11-12%) IDR 2.700/kg
- High protein feed (15%) IDR 3.500/kg (TNI has taken samples for analysis)

Ratio produced high protein feed (of 80 ton per month)

- September 2015 5 %
- October 2015 10 %

Summary of Business trip to Indonesia

- November 2015 30 %
- December 2015 35 %

According to feedback milk production has been increased with appr 20% due to usage of HQ feed, but this a flatter as the producing live stock has been increased. Nevertheless:

- September 2015 6.5 ton milk/day @ 1091 heads (equals 5.9 liter/day/head)
- February 2016 9.3 ton milk/day @ 1309 heads (equals 7.1 liter/day/head)

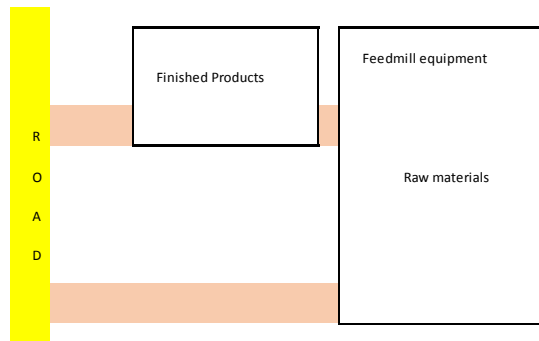
Appr. 20% of the coop members buys feed from the feedmill; the others buy locally.

Recently a joint-venture between Mr Jojo and the Koperasi Saluyu has been established, and with that the coop has shares in the feedmill. So-far feed batches are still produced in the traditional way (1 ton/batch; 4 batches/day; 6 days/week)

Koperasia KPSP Saluyu has a new building, donated by the local Gov't, intended for the feed production. This new building is sized 6 x 9 meter.

Another building is to be planned for convenience and storage of raw materials. This new building will be 10 x 15 meter, with good connection to the road, and connection to the new building.

The Koperasi Saluyu wants to utilize the 10 x 15 meter building for Raw Material storage and feed production, and the 6 x 9 meter building for storage of Finished Product.



New feedmill building



Inside feedmill building

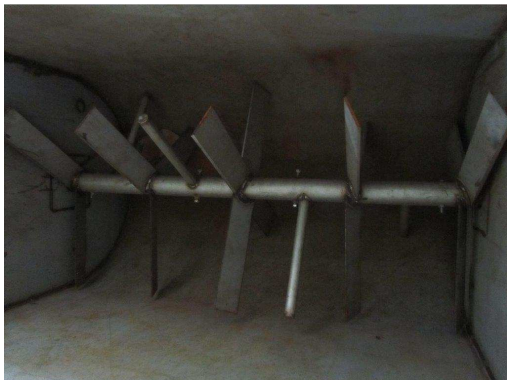
Observations:

- The new feedmill building (6 x 9 m) is ready; brick stone walls, concrete floor and decent roof structure;
- Open access for animals and insects, through door and air vent openings;
- New feedmill equipment has arrived: mixer + grinder + discmill. All equipment is diesel motor driven.
Disc mill: capacity 200-400 kg/day, motor 5,5 HP benzin, (20 kg/hr for soy)
Hammer mill: capacity 350-500 kg/hour, motor 8,5 HP diesel, chain driven.
Mixer: Stainless steel "ribbon" mixer, appr 1500 liter; 450-650 kg/hour, motor 8,5 HP diesel.
- Exhaust air contains diesel vapors, and will remain in the building, without a proper fixed exhaust channel;
- The ribbon mixer does not have a shaft with ribbons, not even paddles. The interior must be updated to create a proper working mixer. This will be done locally.
- Raw materials must be dumped into the open mixer; There is no cover or lid.
- Top of the mixer is appr 1.50 meter above ground level. A support frame as platform is required for operator convenience and safety;
- The mixer is not equipped with a discharge slide, and has to be turned 90+ degrees CCW to dump the mixed materials on the floor (?).
- A receiving bin for collecting the mixed materials would create a more hygienic and better ergonomic situation;
- The warehouse is almost empty and a proper routing is desired.
- In future the area should hold raw materials for one month (appr 80 ton).
- Raw materials arrive in 50 kg bags; Finished Product is packed in 50 kg bags.

Summary of Business trip to Indonesia



The new feedmill equipment



Interior of the new mixer



Hammermill



Discmill

Recommendations:

- The feedmill building should be closed for undesired animals and insects;
- Doors should close better on the building structure to prevent openings;
- The air slots, for natural ventilation, should be covered with mesh;
- Alignment of the motors for making a proper exhaust channel;
- A fixed exhaust air channel for diesel motors;
- A weighing scale to measure the bag content, for making the proper formulation;
- Ribbon mixer must be refurbished with new shaft with ribbons;
- Pedestal for workers (during filling of the mixer);
- A mesh grid on top of the mixer, for removal of undesired large parts;
- The mixed feed should not be dumped on the floor !!
- Collecting bin to receive the mixed batch, avoiding floor contact;
- The receiving bin must be on wheels for moving the batch into the bagging area.
- Separate bagging area, away from the mixing zone, for clean working methods.
- Raw materials and Finished Feeds should be handled according to first-in, first-out principle.
- Drying of moisterous raw materials;
- In the raw material area, and in the Finished Feeds area, a soft zoning can be made on the floor to create designated areas per raw material or finished product.
- Working protocol for first-in, first-out storage;
- Working protocol for batch preparation;
- Working protocol for daily plant cleaning;
- KEEP THE AREA'S CLEAN. EVERY DAY !

Follow-up

- Ottevanger will send example of ribbon for the mixer
- Re-new interior of the mixer
- Ottevanger will send example of routing in the building
- Procedure for raw material and finished product storage and handling
- Procedure for personnel and guests
- Working procedure (protocol) for production
- Test protocol for raw materials and finished feed

Ottevanger
KPSP Saluyu
Ottevanger
Ottevanger
Ottevanger
Ottevanger
TNI

Summary of Business trip to Indonesia

KPGS Koperasi Peterkan Cikajang – Cikajang (West-Java) Indonesia

Visited: 3 February 2016

Meeting partners: Mr H.E. Suherman – Chairman of PPGS Cikajang
Dr H.A. Hikmat Buana – Member of the Board / Coop Manager
Mr Thutju Tjukanda – Secretary
Mr Amin Sutiarto (Atok) – Trouw Nutrition Indonesia (project manager West-java projects)
Mrs Annisa Octa Arifa – Trouw Nutrition Indonesia (project manager Cikajang)
Paul Eijmberts – Ottevanger Milling Engineers

KPGS Cikajang produces milk for one of the three large dairy companies, namely for Indo Lacto.

In five years the herd has been increased from 150 to 2000 cows. Recently a grand from RABO-Bank has been used for obtaining additional cattle.

Now feed production is 12 ton per day, but this will finally go to max 20 ton per day.

Feed is produced by contracted workers.

After the visit in September 2015, the vertical mixer broke down. The unit has been repaired, but to assure the production, a second vertical mixer has been bought locally. This new mixer (2.000 kg batch) is brand-new, made locally, has cost the Cooperation IDR 80.000, which equals EUR 5.500,=.

Finally the screw auger of the old mixer will be replaced locally, which will cost IDR 30.000 (equals EUR 2.000,=).

Mixer situation

Although the new mixer can produce 2000 kg per batch, it has been decided to run both mixers with the same batch size of 1.800 kg, in order to prevent human errors in formulations.

As the screw auger of mixer 1 is worn, the mixing time has been increased with 5 minutes to compensate. The mixing performance has been verified by TNI. In the short terms this auger will be re-newed.

At the end of the day, KPGS Cikajang will have two almost equal vertical mixers, allowing them to produce 3.600 kg per hour. Therefore the urge for mixer replacement with a horizontal mixer is over.

The power supply is sufficient to run both mixers simultaneously.

Mixing performance is much better compare to 6 months ago.



Observations:

- Buildingwise there are several obstructions in logistics.
- Raw materials arrive in 50 kg bags and are carried to the designated location in the building.
- Raw materials of the same kind can be packed in bags with different prints (prints on bags are not leading)
- Finished products are bagged in 50 kg bags, and carried towards the truck;
- Two workers are producing the feeds in both mixers, and six workers are carrying the bags;
- This all happens at the same time, with limited space to walk.
- The circulation spout on the mixer is not in use. Instead the bagging spout is used for circulation while mixing. Due to this way of working "mixed" materials remain on the floor, instead of being circulated.
- The workers filling the mixer, bypass the safety grid, and push the raw materials in the auger with their legs;
- Raw materials are stored on wooden pallets to keep them off the floor;
- Undesired animals have been spotted in the raw materials area;
- For opening of raw material bags, the ribbons are cut and end up in the feed (10 cm long plastic ribbons);
- Distribution to the farms is twice a month;
- Batch sizes of the mixers are made equal to prevent mistakes;
- Still moisture of raw materials can be (too) high for proper storage;

Due to the small entrance, the simultaneous production on two mixers, carrying of raw materials and finished products (50 kg bags on the shoulder) often leads to unnecessary obstructions for the workers.

KPGS Cikajang requests for support for:

- Advise on layout of the available building, with RM and FP areas, routing for RM and FP, location of office, etc
- Suggestions for raw material storage (20 tpd; one week storage); Fi-Fo procedure;
- Suggestions about proper routing of the incoming materials and finished goods;
- Protocol for working methods
- Protocol for testing (to be provided by TNI)

Summary of Business trip to Indonesia

Recommendations:

- The plant has to be cleaned thoroughly;
- The mixing area is extremely dirty and needs an urgent make-over.
- The building layout needs to be upgraded;
- The layout of the building requires optimisation for better working methods and logistics;
- Raw materials should be packed in uniform bags, per raw material (to prevent mistakes);
- Raw materials should be used first-in, first out;
- Labelling of raw materials
- Labelling of the produced feeds
- KEEP THE AREA'S CLEAN. EVERY DAY !

Follow-up

- Re-new auger of mixer 1
- Cikajang will provide layout drawings of the building
- Advise on storage of raw materials and finished products
- Advise on routing in the building
- Working procedure (protocol) for production
- Test protocol for raw materials and finished feed

KPGS Cikajang
KPGS Cikajang
Ottevanger
Ottevanger
Ottevanger
TNI

Summary of Business trip to Indonesia

Trouw Nutrition Indonesia – Bekasi, Indonesia

Visited: 5 February 2016
Meeting partners: Nabil Chinniah – Business Manager Feed Ingredients & Premixes
Mr Amin Sutiarto (Atok) – Project manager West-java projects)
Mr Wira – Formulations
Mr Tohir – Quality Assurance Lab
Paul Eijmberts – Ottevanger Milling Engineers

General

The Indonesian market is difficult right-now. The political situation, the currency instability, the overcapacity and the prices for imported raw materials does not help the business.

The 7 largest Feedmillers in Indonesia (QL, CP, Malindoi, Eastern Hope, New Hope, CJ and Cargill), which are non-Indonesian companies, and good for 85% of the Indonesia feed market.

The prices for imported grains are 2 times more expensive as before. It seems the large feedmills make pricing agreements.

Even in the electronical industry sector, big players as Pioneer, Panasonic and Samsung are closing their Indonesian factories, in favour of their home-base industry. Then-thousands of Indonesian workers became unemployed.

Besides the Dairy Sustainability program of Advanced Consulting, another Dairy program is ongoing, with mayor goal to improve the milk production per head. This program is organised by the Ministry of Agriculture. Cargill provides balanced feeds to a selected number of farms in West-Java. The dedicated dairy feeds are supplied from Jakarta feedmil, free-of-charge, for a period of 3 months. It seems the program is not really well-organised and there are doubts what will happen after the first three months.

Trouw Nutrition is optimising the Premix, in order to have a properly designed formulation for the field testing. Field testing will be done at 9 demo farms, where a number of selected cows are already monitores, and will be monitored during the feed trials. This selected group of cows will bring the statistical information, necessary to clearly prove the benefits of the balanced diet.

Bram Wouters has developed the testing protocol

Batch analysis

Mr Tohir (TNI) has performed some testing on the vertical mixer, and defined the homogeneity of mixing and particle size distribution. In the TNI-Laboratories, the tests have been done with NIR-analysis and sifter tower. Results have been shared.

Steps to make for the program:

- | | |
|---|------------------|
| • Working protocol (from RM in to FP out) | Ottevanger |
| • Advised sequence of dosing | Ottevanger |
| • Safety points to be assigned | Ottevanger / TNI |
| • Optimisation building layout | Ottevanger |
| • Advise on building design (routing, ventilation, exhaust air, prevention animals and insects) | Ottevanger |
| • Testing / Test protocol | TNI |

On later date:

- Training of feedmill managers (trainers-for-trainers)

Summary of Business trip to Indonesia

General summary

- There is progress at both cooperations;
- KPSP Saluyu can make steps with the new building and machines, but some optimisation is required; With guidance on building and routing, Saluyu will reach much better and more controlled feed production.
- KPGS Cikajang had to make steps, due to the broken machine. This ended in the situation with having two mixers, which is more than sufficient to produce the feed.
A large make-over of Cikajang is an absolute must. Without changes, the quality and the limitations of the plant will remain.
A new building layout, in combination with proper cleaning, will bring the situation to a much better point.
- For both cooperations it is necessary to have good working methods, for storage, but also for mixing and finished products;
- The positive drive is there !

Concerns

- The Coops are eager to improve, but there is acted on discussions and not on recommendations.
- Even the local Government is too eager to show their contribution in the program, by supporting the coops with equipment.
- To increase the milk output of the coops, additional herds have been obtained.
- The harvest waste (poor nutritional value, high moisture content, but free of charge) is still used.
- Uncommunicated actions by the Coops might influence the program, or flatter the real result of the program (read: optimized diet).

Follow-up

- | | |
|--|-------------|
| • Ottevanger will send example of ribbon for the mixer | Ottevanger |
| • Renew interior of the mixer | KPSP Saluyu |
| • Ottevanger will send example of routing in the building | Ottevanger |
| • Working procedure (protocol) for production | Ottevanger |
| • Procedure for raw material and finished product storage and handling | Ottevanger |
| • Test protocol for raw materials and finished feed | TNI |