

Cheese Making in the Veneto Region of Italy – Relevance and Implications to Australia



Sandra Vazzoler

ISS Institute/Italy (Veneto) Fellowship

Fellowship funded by Skills Victoria,
Department of Innovation,
Industry and Regional Development,
Victorian Government



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December 2009

Also extract published on www.issinstitute.org.au

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Executive Summary

The Australian Cheese Industry is young in comparison to Europe's long and successful cheese making history. Italy in particular is recognised as a European country with a long history of cheese making and one that has regulations in place to protect its traditional cheese recipes and cheese making practices from being lost.

At present the Australian Cheese Making Industry is progressive and comprised of many producers operating on various scales. This includes small farmhouse producers who milk their own cows and then produce their own cheese, to much larger industrial cheese plants which source their milk from a variety of dairy farms and companies and produce cheese on a large scale. The variety of cheese styles produced in Australia is continually increasing, in part due to the very nature of producing something with ever changing raw ingredients, for example seasonal changes in milk, and in part due to consumer pressure and desire for new cheese styles and more European style cheese to be produced in Australia using fresh Australian produce.

With this in mind the primary aim of this Fellowship was to learn, in detail, the production techniques of Northern Italian cheese styles, in particular Asiago.

After returning to Australia armed with the skills and knowledge gained, Vazzoler intends to create a new cheese for Australian producers and the Australian market. The Fellow's overseas program provided a valuable opportunity to gain first hand experience of some of the age old cheese making processes that are still in practise in the Veneto region of Italy.

The specific areas of study for the Fellowship included:

- Visits to small scale producers making traditional regional cheese, with the cheese of interest being Asiago Pressato.
- Gaining an understanding of running a small scale cheese plant.
- Investigating current education models in Italy for cheesemakers and identify possible information exchange opportunities.
- Developing new cheese recipes that blend old world tradition and new world innovation to meet the requirements of the Australian marketplace.

This Overseas Fellowship tour made possible by the ISS Institute, and funding from Skills Victoria, Victorian Government, is the start to an exciting new cheese for Australia – a table cheese made from pasteurised whole milk, acidified with cultures, rennet set, semi cooked curd, vat salt application and a short maturation period. A cheese with a production time line and flavour profile that has great potential for Australian producers and consumers. This report details the cheese making practises observed in Italy and details the methodology for producing this semi-cooked curd cheese. It also identifies a series of recommendations and steps required to develop a new Australian produced cheese for the domestic and international market.

Table of Contents

i	<i>Abbreviations and Acronyms</i>
ii	<i>Definitions</i>
1	Acknowledgments
1	Awarding Body - International Specialised Skills Institute (ISS Institute)
3	Fellowship Sponsor
3	Supporters
4	Australian Organisations and Key Representatives Impacted by the Fellowship
5	About the Fellow
6	Aim of the Fellowship
7	The Australian Context
7	SWOT Analysis
9	The Skills and Knowledge Deficiencies
11	The International Experience
11	Visit 1: Caseificio Gaion (Gaion Family Cheese Factory)
14	Visit 2: Latterie Trevigiane
17	Visit 3: Caseificio Pennar Asiago
22	Visit 4: Waister Azienda Agricola di Rela Riccardo
28	Visit 5: Istituto Sperimentale Lattiero Caseario of Lodi (ISLC)
30	Visit 6: Valle Trompia
34	Asiago, DOP and the Region
35	Knowledge Transfer: Applying the Outcomes
37	Recommendations
37	Government
37	Industry
37	Education and Training
37	Community
38	ISS Institute
38	Further Skills Deficiencies
39	References
39	Bibliography and Reports
39	Websites
40	Attachments

Abbreviations and Acronyms

CTFA	Consorzio Tutela Formaggio Asiago (Cheese Regulatory Board and Quality Control body in Italy)
DIAA	Dairy Industry Association Australia
DOP	<p>Denominazione d'Origine Protetta</p> <p>The abbreviation DOP stands for Denominazione d'Origine Protetta, which is the Italian wording for 'Protected Designation of Origin'. This is the highest form of recognition in the European Union for agricultural products and foodstuffs, excluding wines. The guarantee corresponds with the DOC certification, Denominazione di Origine Controllata, the more widely known abbreviation used for high-quality wines.</p> <p>EEC regulation 2081/92 defines DOP products as <i>"foodstuffs originating in that region, specific place or country, the quality or characteristics of which are essentially or exclusively due to a particular geographical environment with its inherent natural and human factors, and the production, processing and preparation of which take place in the defined geographical area."</i></p> <p>From the range of over 400 cheeses produced in Italy (source: INSOR) only 30 have been granted the benefit of PDO certification, and Asiago can be said to be one of the most important amongst Italian cheeses.</p> <p><i>Reference: http://www.asiagocheese.it</i></p>
FSANZ	Food Standards Australia New Zealand
GOTAFE	Goulburn Ovens Technical and Further Education
ISLC	Istituto Sperimentale Lattiero Caseario
ISS Institute	International Specialised Skills Institute Inc
NCDEA	National Centre for Dairy Education Australia
PDO	Protected Designation of Origin

Definitions

BAR	Measure of Atmospheric Pressure (1 equals Sea Level, 2 equals twice sea level, etc.)
CHR Hansen AP100	Specific Cheese Starter Culture
DVS Asigo Pressito Type 093	Specific Cheese Starter Culture
Skills deficiency	<p>A skill deficiency is where a demand for labour has not been recognised and where accredited courses are not available through Australian higher education institutions. This demand is met where skills and knowledge are acquired on-the-job, gleaned from published material, or from working and/or study overseas.</p> <p>There may be individuals or individual firms that have these capabilities. However, individuals in the main do not share their capabilities, but rather keep the IP to themselves; and over time they retire and pass way. Firms likewise come and go.</p> <p><i>Reference: 'Directory of Opportunities. Specialised Courses with Italy. Part 1: Veneto Region', ISS Institute, 1991.</i></p>
Sustainability	<p>The ISS Institute follows the United Nations NGO on Sustainability, "Sustainable Development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs"</p> <p><i>Reference: http://www.unngosustainability.org/CSD_Definitions%20SD.htm</i></p>

Acknowledgments

Sandra Vazzoler would like to thank the following individuals and organisations who gave generously of their time and their expertise to assist, advise and guide her throughout the Fellowship program.

Awarding Body - International Specialised Skills Institute (ISS Institute)

We know that Australia's economic future is reliant upon high level skills and knowledge, underpinned by design and innovation.

The International Specialised Skills Institute Inc (ISS Institute) is an independent, national organisation, which has a record of nearly twenty years of working with Australian industry and commerce to gain best-in-the-world skills and experience in traditional and leading-edge technology, design, innovation and management. The Institute has worked extensively with Government and non-Government organisations, firms, industry bodies, professional associations and education and training institutions.

The Patron in Chief is Sir James Gobbo AC, CVO. The ISS Institute Board of Management is Chaired by Noel Waite AO. The Board comprises Franco Fiorentini, John Iacovangelo, Lady Primrose Potter AC and David Wittner.

Through its CEO, Carolynne Bourne AM, the ISS Institute identifies and researches skill deficiencies and then meets the deficiency needs through its *Overseas Skill Acquisition Plan (Fellowship Program)*, its education and training activities, professional development events and consultancy services.

Under the Overseas Skill Acquisition Plan (Fellowship Program) Australians travel overseas or international experts travel to Australia. Participants then pass on what they have learnt through reports, education and training activities such as workshops, conferences, lectures, forums, seminars and events, therein ensuring that for each Fellowship undertaken many benefit.

As an outcome of its work, ISS Institute has gained a deep understanding of the nature and scope of a number of issues. Four clearly defined economic forces have emerged out of our nearly twenty years of research. The drivers have arisen out of research that has been induced rather than deduced and innovative, practical solutions created - it is about thinking and working differently.

A Global Perspective. 'Skills Deficiencies' + 'Skills Shortages'

Skill deficiencies address future needs. Skill shortages replicate the past and are focused on immediate needs.

Skill deficiency is where a demand for labour has not been recognised and where accredited courses are not available through Australian higher education institutions. This demand is met where skills and knowledge are acquired on-the-job, gleaned from published material, or from working and/or study overseas. This is the focus of the work of ISS Institute.

There may be individuals or firms that have these capabilities. However, individuals in the main do not share their capabilities, but rather keep the IP to themselves; and over time they retire and pass way. Firms likewise come and go. If Australia is to create, build and sustain Industries, knowledge/skills/understandings must be accessible trans-generationally through nationally accredited courses and not be reliant on individuals.

Our international competitors have these capabilities as well as the education and training infrastructure to underpin them.

Addressing skill shortages, however, is merely delivering more of what we already know and can do to meet current market demands. Australia needs to address the **dual** challenge – skill deficiencies and skill shortages.

Acknowledgments

Identifying and closing skills deficiencies is vital to long-term economic prospects in order to sustain sectors that are at risk of disappearing, not being developed or leaving our shores to be taken up by our competitors. The only prudent option is to achieve a high skill, high value-added economy in order to build a significant future in the local and international marketplace.

The Trades

The ISS Institute views the trades as the backbone of our economy. Yet, they are often unseen and, in the main, have no direct voice as to issues which are in their domain of expertise. The trades are equal, but different to professions.

The ISS Institute has the way forward through its 'Master Artisan Framework for Excellence. A New Model for Skilling the Trades', December 2004. The Federal Government, DEEWR commissioned ISS Institute to write an Australian Master Artisan School, Feasibility Plan.

In 2006, ISS Institute Inc. set up a new ISS advisory body, the **Trades Advisory Council**. Members are Ivan Deveson AO; Martin Ferguson AM, MP, Federal Labor Member for Batman; Geoff Masters, CEO, Australian Council of Educational Research; Simon McKeon, Executive Chairman, Macquarie Bank, Melbourne Office; Richard Pratt, Chairman, Visy Industries and Julius Roe, National President Australian Manufacturing Workers' Union.

Think and Work in an Holistic Approach along the Supply Chain - Collaboration and Communication

Our experience has shown that most perceive that lack of skills is the principal factor related to quality and productivity. We believe that attitudes are often the constraint to turning ideas into product and a successful business; the ability to think laterally, to work and communicate across disciplines and industry sectors, to be able to take risks and think outside the familiar, to share – to turn competitors into partners.

Australia needs to change to thinking and working holistically along the entire Supply Chain; to collaborate and communicate across industries and occupations - designers with master artisans, trades men and women, Government agencies, manufacturers, engineers, farmers, retailers, suppliers to name a few in the Chain.

'Design' has to be seen as more than 'Art' discipline – it is a fundamental economic and business tool for the 21st Century

Design is crucial to the economic future of our nation. Australia needs to understand and learn the value of design, the benefits of good design and for it to become part of everyday language, decision making and choice.

Design is as important to the child exploring the possibilities of the world, as it is to the architect developing new concepts, and as it is to the electrician placing power points or the furniture designer working with a cabinet-maker and manufacturer. As such, design is vested in every member of our community and touches every aspect of our lives.

Our holistic approach takes us to working across occupations and industry sectors and building bridges along the way. The result has been highly effective in the creation of new business, the development of existing business and the return of lost skills and knowledge to our workforce, thus creating jobs - whereby individuals gain; industry and business gain; the Australian community gains economically, educationally and culturally.

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Fellowship Sponsor

Skills Victoria, Victorian Government, is responsible for the administration and coordination of programs for the provision of training and further education, adult community education and employment services in Victoria and is a valued sponsor of the ISS Institute. Vazzoler would like to thank them for providing funding support for this Fellowship.

Supporters

In Australia

- Carolynne Bourne AM, ISS Institute CEO, for her vision and belief in the importance of the Fellowship program and in particular this Fellowship.
- Paul Sumner, Skills Victoria Fellowship Coordinator, ISS Institute, and Ken Greenhill, ISS Institute, for all the advice and support in writing this report.
- The support of The National Centre for Dairy Education (NCDEA) was essential to the success of this Fellowship, and Goulburn Ovens TAFE (GOTAFE) are also thanked for providing Vazzoler with the time and opportunity to represent them whilst undertaking this Fellowship. In particular: Peter Ryan, CEO, Goulburn Ovens TAFE (now retired) and Michael Robinson, Program Manager, Dairy Processing, NCDEA.
- Jeanette McWhinney, Program Manager (Fellowships, Events and Training), for all the advice and support in making this Fellowship a reality.
- Neil Willman (Cheese Expertise) for his technical knowledge and willingness to assist in completing cheese trials prior to undertaking this Fellowship.

In Italy

- Prof Germano Mucchetti, University of Parma
- Luciana Volpato, Consorzio tutela Asiago
- Roberto Mondinelli, Comunita Montana Valle Trompia

Media

The Fellow offers thanks to the following for publication of relevant articles prior to the Fellowship, reporting on the Fellow's study tour to Italy and her work as a cheesemaker:

- The Age Epicure – Editorial pieces on husband and wife wine and cheese producers.
- The Weekly Times – Editorial pieces on husband and wife wine and cheese producers.
- The Shepparton News – Various articles on the Fellowship, cheese making and wine and cheese.
- DIAA Victorian Newsletter – Summary of Fellow's presentation at the 2009 DIAA Victorian Division State Conference, a general editorial piece on husband and wife wine and cheese producers.
- ABC Radio, Melaine Sim, Rural Reporte – Radio discussion covering the basic principles of cheese making and the flavour profiles of cheese types.

Acknowledgments

Australian Organisations and Key Representatives Impacted by the Fellowship

Education/Training Institutes

- NCDEA, Werribee, VIC
- Charles Sturt University, Wagga Wagga, NSW

Professional Associations

- Penny Lawson, Australian Specialist Cheesemakers Association (ASCA)
Email: australiancheese@ihug.com.au
- Dairy Industry Association Australia (DIAA), Victorian Branch

Government

- Kate Cini, Cheese/Dairy Sector, Regional Development Victoria
- William Bloomfield, Dairy Food Safety Officer, Dairy Food Safety Victoria, Shepparton
- Jeff Mayes, Food Science Australia, Werribee (Australia's largest and most diversified food research organisation)

Business

- Solita Portella: Sales Manager, Southern Region, Danisco Australia
- CHR Hansen, Bayswater, Victoria, (suppliers of natural ingredients – starter cultures – for cheese)

Cheese Expertise

- Neil Wilman, Cheese Educator and Industry Consultant
- Justin Telfer, Cheesemaker, Bangalow Cheese, NSW
- Paul Wilson, Cheesemaker, Nimbin Valley Dairy, NSW

About the Fellow

Name: Sandra Vazzoler

Qualifications

- Diploma of Teaching (Early Childhood), School of Early Childhood, University of Melbourne Studies, 1989-1991
- 'Farmhouse Cheese Making', Gilbert Chandler Campus, University of Melbourne, 2001
- 'Cheese Sensory Evaluation and Grading', Gilbert Chandler Campus, University of Melbourne, 2002
- 'Lab Testing for Cheese Factories', Gilbert Chandler Campus, University of Melbourne, 2002
- Certificate in Cheese Making, Gilbert Chandler Campus, University of Melbourne, 2003

Memberships

- Member, Goulburn River and Ranges Tourism Group
- Member, Dairy Industry Association Australia (Victorian Branch)
- Member, Australian Speciality Cheese Association
- Member, Murchison Primary School Parents Club

At present Vazzoler resides in the Goulburn Valley at Longleat, a 20 acre vineyard and boutique winery she manages with her husband Guido. She is the mother of two school-aged boys and divides her time between motherhood and a professional career.

Her role at Longleat is diverse and constantly changing. Vazzoler and her husband manage all aspects of Longleat from producing the fruit, making the wine, operating cellar door sales and catering for functions at their café.

Vazzoler has had a keen interest in cheese since visiting small mountain producers in the Veneto region of Italy while she was gaining winemaking experience and participating in an Italian wine vintage in 1996. Thus it was a natural progression for her to begin cheese making after she completed ten years of kindergarten teaching.

Initially Vazzoler studied home cheese making before progressing to further study at The University of Melbourne, Gilbert Chandler Campus. At the completion of her study she was invited to be a technical cheese assistant delivering intensive practical cheese courses, a position she still holds with the newly formed NCDEA.

In addition to this, the Fellow has created 'Vazzoler Cheese', a range of handmade cheeses which she makes from local cow's milk and offers for tasting and sales at the Longleat cellar door.

Living in a small rural town in these difficult times has given Vazzoler the opportunity to realise another passion of hers – fundraising. Over the past three years she has organised and co-ordinated many fundraising activities benefiting children and their families in Murchison. The most rewarding to date is 'Moove it in Murch', a family fun run/walk

In her spare time, Vazzoler is a keen cyclist both on and off road and enjoys spending time with her family and friends.

Aim of the Fellowship

The aim of the Fellowship was to undertake an overseas study program in Italy, to gain a comprehensive understanding in the field of cheese making. Focusing on traditional mountain style cheese production, the Fellow sought to investigate cheese courses and study options available in the Veneto region of North East Italy.

The Fellowship program provided a valuable opportunity to gain first-hand experience of cheese making processes and education programs currently in practise in North East Italy, in particular the Veneto region.

Specific Areas of Study and Development

- Visit small scale producers making traditional regional cheese. The cheese of interest was Asiago Pressato (see Attachment 1)
- Gain an understanding of the economic viability of running a small scale cheese plant
- Investigate current education models in Italy for cheesemakers and understudies
- Develop new cheese recipes that blend old world traditional processes with new world innovation and market requirements
- Further develop ongoing education programs through the NCDEA.

The Australian Context

The relatively young Australian Speciality Cheese Industry is growing and evolving at a rapid pace. There are many interested in entering the field of cheese making and many more with the desire to create new styles of cheese for the Australian marketplace.

Cheese education and production in Australia, although well established, is still in its infancy in comparison to Europe. Italians produce a diverse range of cheese heavily protected by Protected Denomination of Origin (DOP) consortiums. The DOP legislations ensure that cheese regionality, uniqueness and origin are maintained and protected.

Australia does not have any such protection guidelines. It is important to learn more about protection of cheese styles and the use of authenticity to help with marketing and increasing Australian cheese sales.

Observation of processes used to make Italian mountain style cheese will help develop new and refined cheese making techniques for the Australian Cheese Industry. These techniques will be delivered through the cheese courses offered at NCDEA.

Australian cheesemakers will then have the knowledge to broaden the varieties of cheese they produce. There is very limited and often no 'Italian mountain style' cheese produced in Australia, however it is a popular cheese style with consumers purchasing the imported product. This will provide opportunity for business to broaden their Australian consumer base.

The mountain style cheeses the Italians produce offer varieties with both very short maturation and long maturation times. This technique allows for an earlier and broader sales period, helping to overcome having all stock released for sale at the same time. Using this technique, cheesemakers in Australia will have the ability to sell product earlier and balance out their cash flow, contributing to greater sustainability of the business.

By observing courses offered at Istituto Sperimentale Lattiero Caseario (ISLC) of Lodi, a designated cheese institute in Italy, potential curriculum modifications can be suggested to improve those offered at NCDEA. In addition, the possibility of a study exchange for both students and teachers between NCDEA Werribee, Australia and ISLC Lodi, Italy can be investigated.

SWOT Analysis

The following identifies the strengths, weaknesses, opportunities and threats (SWOT) of the introduction of an Italian mountain style cheese into the Australian market.

Strengths

- Good quality Australian milk
- Cheese training program in place with the ability to commence teaching a new cheese style
- Product that can enter the marketplace in a short time with a long shelf life
- Export opportunities
- Existing knowledge base to build on
- Value adding to Australian milk

The Australian Context

Weaknesses

- Not yet proven as an Australian cheese style that can be made
- Timeline of implementation into course dependant on cheese trial results
- Limited teachers to deliver courses

Opportunities

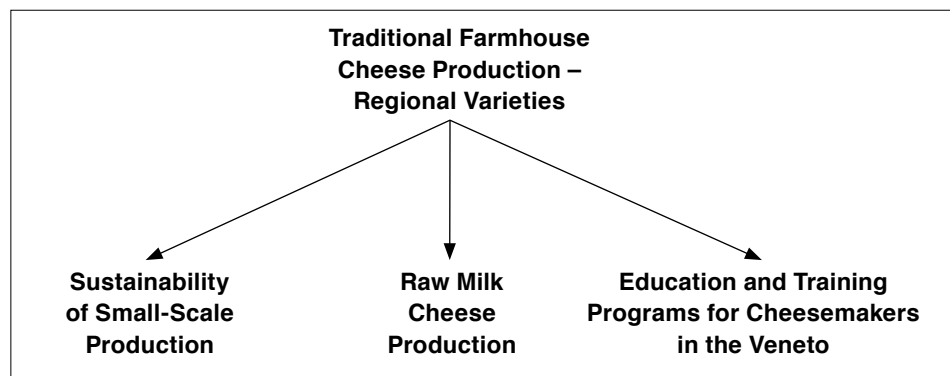
- New cheese type/s developed
- Broaden Australian cheese varieties
- Consumer base in Australia who already consume these cheese styles
- Consumer base who are constantly looking for new cheese styles
- Producers looking for new styles to make
- Identify new markets
- Marketing and promotion opportunity, region and style branding
- Up skill existing producers and trainers
- Invite overseas teachers to assist in course delivery and seminars

Threats

- Overseas imports in the marketplace already
- Overseas imports often lower in price
- Reticence of consumers to adopt Australian version of Italian cheese

The Skills and Knowledge Deficiencies

While developing new course material and delivering specialist cheese making courses, the following skills and knowledge deficiencies have been identified, and grouped under the following headings:



Traditional Farmhouse Cheese Production – Regional Varieties

WHY

The Australian Boutique Cheese Industry is still in its infancy when compared to European production. The Europeans have managed to create many signature cheese varieties according to region and use this point of difference to market their cheese very effectively. To help grow farmhouse cheese production and encourage the development of benchmark Australian cheese it is important for us to understand how the European culture has developed and maintained different varieties.

AIM

Whilst in the Veneto region the Fellow visited cheese producers making traditional regional cheese varieties, identified to be Asiago, Montasio and Formaggio Casatella Trevigana. The Fellow's aims were to increase her understanding of the history and current day practices associated with the manufacture of these cheese varieties and what makes them different. Of particular interest was the identification of different cheese making and maturation techniques that could be applied to Australian cheese production.

Sustainability of Small-Scale Production

WHY

An increasing number of people (from farmers wanting to add value, to home cheesemakers wanting to develop a commercial business) are wanting to take the next step, but are finding the set-up costs prohibitive with regard to getting this aspect of the business off the ground. Italy is very diverse in terms of production styles and scale, and has a long and sustained history. The Fellow believes Australia, with a relatively young cheese industry, is well placed to utilise and apply the knowledge acquired to ensure that future opportunities are maximised and that the industry remains robust.

AIM

While visiting regional cheese producers the Fellow identified and understood the mechanisms in place that keep Italian small scale producers viable. This understanding and knowledge can be applied to our industry.

The Skills and Knowledge Deficiencies

The research included how producers:

- Effectively produce/receive milk
- Make and mature cheese
- Minimise waste and effluent
- Market their product

The Fellow ascertained the relevance of Italian methods for Australia. For example, the family business culture in Italy may not be relevant in a culture where outsourcing specific skills is becoming more prevalent. The Fellow also investigated cooperative systems and micro factories that overcome the high set up costs involved with boutique cheese production.

Raw Milk Cheese Production

This specific area was beyond the scope of the Fellowship study. However, as it appears that the Australian Cheese Industry is polarised in its view of raw milk cheese production, and that the Italian Cheese Industry has a strong history of this approach, further study is definitely warranted regarding production method.

See 'Recommendations' chapter for further comment and recommendations.

Education and Training Programs for Cheesemakers in Italy

WHY

The NCDEA has formed a cheese education strategy group, of which Vazzoler is a member. The group is currently investigating the possibility of creating a specialist cheesemakers' course and qualification through the TAFE system. The Fellow reviewed available courses in the Veneto region of Italy and assessed their relevance to Australian cheese making.

AIM

- To investigate the study and courses Italian cheesemakers undertake.
- Gain an understanding of their course requirements, topics covered, practical experience gained and depth of theoretical knowledge. This information can be used to directly assist in the development of a new Goulburn Ovens TAFE course. In addition, the knowledge gained regarding Asiago, Montasio, and Formaggio Casatella Trevigana will be incorporated into the existing Intensive practical Cheese making course offered by NCDEA.

The International Experience

Destinations for the Fellowship study were organised with the objective of visiting a wide range of cheese making facilities in the North of Italy, in particular the Veneto region. The study tour included both formal and informal visits in order to ensure a more rounded learning experience.

Visit 1: Caseificio Gaion (Gaion Family Cheese Factory)

Small to medium family owned cheese factory in Treviso, Italy

Contact (and company founder): Giovanni Gaion

Distribution Officer: Andrea Daros

There were two main objectives for the visit to this factory. One was to glean an understanding of how a family cheese factory operates; the other was to visit a factory making Casatella Trevigiana, which obtained DOP status on 19 February 2001.

Observations

Caseificio Gaion is a medium size modern factory employing mainly family members in a variety of roles.

Cow's milk is delivered from a selected local dairy farm and held in a refrigerated stainless steel holding tank. Cheese making takes place seven days a week. All milk is pasteurised (heat generated with steam from a boiler in a certified boiler room with certified operator) at 70-73 degrees celsius for 20 seconds prior to being cooled to cheese making temperature. After pastuerisation the milk is pumped into the cheese making room and then made into a variety of cheese products.



Caseificio Gaion Pasteuriser

The International Experience



Caseificio Gaion whey off



Caseificio Gaion maturation rooms

When asked why Caseificio Gaion pasteurised the milk it was noted that as a result of pasturisation they felt the products had a longer shelf life.

The cheese types made are all associated with the region and more specifically the individual cheese factory, for example Formaggio Casatella Trevigana (see Attachment 2).

The cheese making room had a designated Ricotta vat that incorporated a steam injector in the vat using steam produced from the boiler. This enabled the whey from other cheese vats to pass directly into the Ricotta vat which allowed for continuous and fast Ricotta production as other cheese vats wheyed off. It appeared to be a very efficient process.



Caseificio Gaion maturation rooms



Caseificio Gaion Ricotta vat

On the same site as their factory was a modern 'spaccio' or retail outlet, which sold all the products made on site as well as other delicatessen items. It also served as a distribution centre for wholesale cheese products. Being on the same site meant that the day's production could be sold quickly as fresh cheese.

The International Experience



Caseificio Gaion retail outlet

The main roles in the business are all headed by a family member, whether it be in the distribution section, a cheesemaker role, retail outlet manager or boiler operator.

The visit included a tour of the waste disposal operation which was very efficient. The cheese making process (making Ricotta with the whey) ensured the maximum amount of milk solids had been removed. The waste was pumped to an aerated bacterial purifier. The solids are collected and twice a year a truck takes these away for further treatment. The site of the factory is positioned in town and to ensure that the smell from the waste did not affect neighbouring properties, a tall Cyprus hedge grown around the tanks directed the smell upward.

The 'La Casatella Trevigiana DOP' is a milky/creamy white fresh curd cheese with high moisture and sweet lactic flavour made with cow's milk. The history or tradition of making this cheese dates back to 1671 and the cheese forms a critical importance in the history and culture of the people of the Treviso region.

The consortium safeguards the uniqueness of the cheese, ensuring anyone making the cheese for sale follows the product specifications. These cover the type and region where the milk is produced, the cheese making process, the size of cheese, and the maturation and market distribution.

Cheesemakers are able to use their DOP status to aid in distributing and selling their product.

Link: Casatella DOP Trevigiana website – <http://www.casatella.it>

The International Experience

Visit 2: Latterie Trevigiane

Large factory tour with cheesemakers, in Treviso, Italy

Organised by: Luciana Volpato, Consorzio tutela Asiago

Latterie Trevigiane is an extremely large commercial cheese factory that produces cheese for both the domestic Italian market and for export. One of the company's export destinations is Australia.

Observations

The factory is modern and produces over 20 types of cheese, many of which are DOP cheese. A particular cheese of interest is Asiago Pressato DOP – fresh Asiago. Ten thousand litres of cow's milk per day is used to make Asiago at Latterie Trevigiane. To manage this volume of milk the majority of the cheese production is automated. The main objective for visiting this factory was to observe the cheese making process following DOP guidelines for Asiago Pressato, and to compare this large-scale operation to the smaller operations visited.

Day one: Milk is received (100% cow's milk). The milk is pasteurised for 20 seconds at 73 degrees celsius, then cooled to 6 degrees celsius and maintained overnight at a pH of approximately 6.7.

Day two: Milk is heated to a vat set temperature of 35 degrees celsius, then a starter culture (CHR Hansen AP100) is added where it receives 30 minutes of gentle agitation. Animal rennet is then added (caglio liquido vitello – liquid calf rennet), after being diluted in water.



Latterie Trevigiane rennet addition

A setting time of 20 minutes follows the addition of the rennet, after which curd cut takes place, taking 22 minutes.

The International Experience



Latterie Trevigiane curd cutting



Latterie Trevigiane curd cutting

Curds and whey are then stirred and cooked for 90 minutes, achieving a final cook temperature of 44 degrees celsius. During this stage half the total salt required is added to the vat, the curd is removed and then travels along a draining tray where the remainder of the salt is applied.



Latterie Trevigiane whey off



Latterie Trevigiane curd drainage and salt application

The curd is then hooped, numbered and labelled with a DOP casein code before pressing.



Latterie Trevigiane Asiago casein code application

The International Experience

A six phase, two hour pressing process then begins. Initially this is applied at less than 1 bar of pressure, then increased to 2 bar, and finally up to 6 bar pressure.



Latterie Trevigiane Asiago press

After pressing, the curd is removed from the form hoops and wrapped with marking bands to imprint cheese name and production codes.



Latterie Trevigiane Asiago name bands



Latterie Trevigiane Asiago name bands imprint on the cheese rind



Latterie Trevigiane Asiago name bands and production codes

Day three: Sale (from 20 days) hoops are removed and cheese is plastic coated and matured in temperature and humidity controlled cool rooms at a temperature of 10 degrees celsius and approximately 83% humidity. Labels are applied and the cheese is ready to sell.

Link: Latterie Trevigiane website – <http://www.latteriatrevigiane.it>

The International Experience



Latterie Trevigiane Asiago plasticcoat and labeling

Visit 3: Caseificio Pennar Asiago

Medium factory tour with cheesemaker in Asiago

Organised by: Luciana Volpato, Consorzio tutela Asiago

The Caseificio Pennar (Pennar Cheese Factory) is a medium sized, modern cheese factory positioned in the alpine area of the Veneto region (altopiano of Asiago), the area well known for Asiago cheese. The cheesemaker and tour guide, Roberto, had 28 years of cheese making experience, with no university training.



Caseificio Pennar front façade

The International Experience

Cheese types made at Caseificio Pennar include Asiago Pressato, Asiago d'Allevio, Grana Padano, Tosela, Pennarone Pennar and Ricotta. The cheese of interest for this visit was Asiago Pressato. The objective at this visit was to observe Asiago being made in a medium sized factory.

Observations

Milk is received from 53 dairies in the designated DOP collection area.



Caseificio Pennar milk receiving area

Day one: Milk (cow's milk) is pasteurized at 72 degrees celsius for 20 seconds (the exception is that raw milk is used for Grana Padano). It is then cooled to a set temperature of 36 degrees celsius and pumped to the cheese making vat.



Caseificio Pennar vat filling with milk



Caseificio Pennar Asiago cheese making vats

The starter culture, Direct Vat Set (DVS) Asiago Pressato Type 093 Anifirm, is then added. The agitator is turned on 30 minutes after starter culture addition, and animal rennet added, followed by a setting time of approximately 20 minutes. Finally the curds are cut to the required size, using a knife size about 12mm.

The International Experience



Caseificio Pennar curd cut

The agitator is again turned on and cooking of the curd begins, with a cook time of one hour at a final temperature of 42 degrees celsius. Salt application begins in the vat, and is added to the curds and whey. Curds and whey are then gravity fed into a draining tray, with the whey draining off from the bottom.



Caseificio Pennar curd drainage

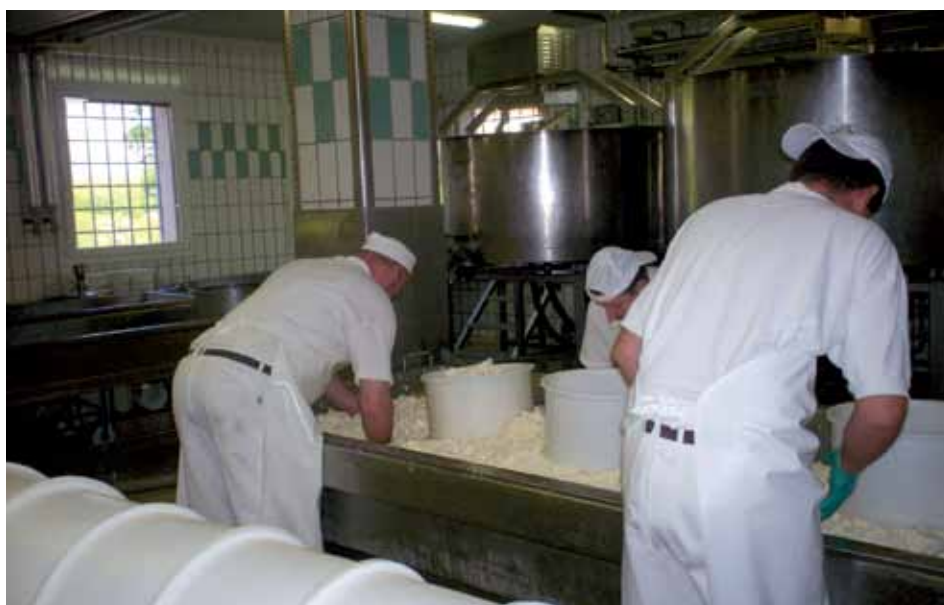
The International Experience

The vat is then washed out with water and any curd left is collected and added to the draining tray. The draining tray is fitted with a moving cutter/stirrer which is then passed over the curd to break it up. The remaining salt is then added in three applications with manual mixing in between as well as the stirring machine being passed over the product trays.



Caseificio Pennar curd mixing

The curd is then hand hooped into the plastic hoops in the draining tray.



Caseificio Pennar curd being hooped

The International Experience

The three Asiago round disc cheese numbers are also slipped down the side of the curd. A record of the batch number of cheese is kept which is then used as the basis of a levy paid to the Consorzio tutela Formaggio Asiago. The cheese is then put in the press, initially at 1 bar then rising up to 2 bar pressure over two hours.



Caseificio Pennar pressing Asiago

The cheese is then unhooped and put in the Asiago imprint bands which leave the Asiago logo and descriptor words all the way round the cheese together with the producer's number.

Day two: The cheese is plastic coated to stop any mould or bacteria growth. Maturation takes place on wooden board in a ten degree Celsius cool room at 83% humidity. Maturation takes 25 to 50 days and the cheese is turned every second day.

Caseificio Pennar Asiago has a 'spaccio' retail outlet on site offering tasting and sales of all their products.



Caseificio Pennar maturation rooms



Caseificio Pennar retail outlet

The International Experience

Other Points of Interest

Washing of all equipment is partially mechanised, using a hydraulic lift into a large cage where a hot soapy wash bath cleans the equipment. The same lift is then used to move the equipment into a large sanitizing bath.



Caseificio Pennar washing up area

Over the last ten years, Caseificio Pennar's cheese production for Asiago Presssato has quadrupled. This popularity gain appears likely to continue.

Additional Observations

Grana Padana table cheese production takes one year; but for grating it can take up to three years. Before maturation the cheese wheels spend one month in a salt bath at 26% humidity. Grana Padana only uses raw milk (not pastuerised).

At all times, cheesemakers wear full white 'uniforms', including a hat and apron. They are also gloved up to handle curds.

Visit 4: Waister Azienda Agricola di Rela Riccardo

Small family farm, cheese factory and salumeria in Asiago

Contact and Guide: Production Manager and Cheesemaker, Riccardo Rela

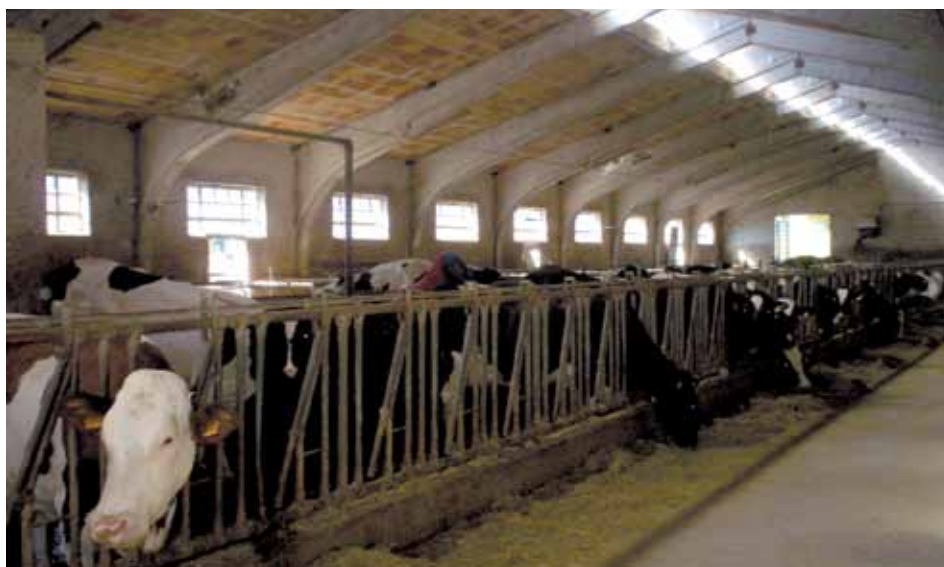
This property is a beautiful 50 hectare farm ten kilometres from Asiago. Waister Azienda Agricola is a small family run dairy farm, cheese factory and Salumeria (producer of meat small goods).

The International Experience



Waister Azienda Agricola front entrance

In June 2008 the farm had 120 cows, 50 for milk production with the balance being young calves. Rela, along with his sister and father carry out all the farming activities. They generally cut 20 of their 50 hectares to hay in two separate harvests, yielding 50 to 70 rolls per hectare. Cows are kept in a barn style shed but graze in the open paddocks.



Waister Azienda Agricola dairy herd

The objective for this visit was to observe Asiago Pressato being produced using raw milk.

Observations

Asiago Pressato day one: Morning milking is at 5:00am. 1,300 litres of milk is pumped directly from the dairy holding vat to the cheese vat. The cheese vat used at Waister Azienda Agricola is a traditional Grana vat. The vat has a steam jacket and the milk is heated to 36 degrees celsius, the temperature needed to commence cheese making. A DVS starter culture from CSL, a starter culture specialist supplier, is added to the vat, and 20 minutes later animal rennet is added. After a further 20 minutes the contents of the vat are cut. Agitation and cooking are commenced at the same time, with a ten degree increase over 20 minutes.

The International Experience

Once the curd has achieved a cook temperature of 46 degrees celsius, a proportion of the total salt is added and mixed through. At this point the agitation is turned off and curd left to collect at the bottom of the vat. After 30 minutes a wooden paddle is used to lift curd up into cheese cloth.



Waister Azienda Agricola curd collection



Waister Azienda Agricola curd collection

The curd is then cut and stacked in hoops two or three high, with no pressing, and is then turned by hand every hour a number of times, as determined by the cheesemaker.



Waister Azienda Agricola hooping



Waister Azienda Agricola stacking

The whey is left in the vat to be used to make Ricotta. Asiago imprinted bands are put on to mark the rind of the cheese.

Asiago Pressato day two to five: The cheese is left to dry for a day or two depending on each individual cheese.



Waister Azienda Agricola cheese drying

The International Experience

After completion of the drying process, the cheese has its final salt application, by spending three days in a 24% brine bath.



Waister Azienda Agricola brine bath

After this final salting the cheese again drains, is rubbed with oil and then placed onto wooden boards and moved into the maturation room. The maturation room is below ground to maintain an even temperature throughout the year.

When appropriate, the cheesemakers use a specific scraper to clean off surface mould which has accumulated.



Waister Azienda Agricola maturation room



Waister Azienda Agricola cleaning cheese surface

Ricotta day one: After the Asiago curd has been removed, half the volume of the whey is pumped through a separator and about three litres of cream collected and put back in the vat.

The International Experience



Waister Azienda Agricola separating

The agitator and the heater are turned back on, and the whey is heated to approximately 84 degrees celsius. It then has citric acid added, and the agitation and heater are left off for 30 minutes in order to let Ricotta collect on top.



Waister Azienda Agricola Ricotta forming on top of the vat

The International Experience

The Ricotta is scooped up in to hoops and exhibits the smell of fresh scrambled eggs.



Waister Azienda Agricola Ricotta collection and hooping

The hoops of Ricotta are then drained and stored in a four degree cool room, until being available for sale next day.

Waister Azienda Agricola has a 'spaccio' retail outlet offering tasting and sales of all their farm produced products along with other local food items, for example local honey.



Waister Azienda Agricola retail outlet

The International Experience

Additional Points of Interest

Raw milk producers are subject to more regulation than pasteurised milk producers. Waister Azienda Agricola has to have formal accredited laboratory testing done regularly for the cheese produced, a process which was described as expensive.

Visit 5: Istituto Sperimentale Lattiero Caseario of Lodi (ISLC)

The purpose of visiting the ISLC was to review the learning structure and process of this professional association

Host: Dottore Domenico Carminati

The ISLC of Lodi has been established for over 100 years and is multi-faceted. The main objective of the institute is to teach and learn more about cheese from both a scientific perspective and as a factory based practical experience. The institute is home to a large library which is open to the public and houses many books, journals and dairy related research papers.

The objective of this visit was to investigate what is on offer for Italian cheesemakers in regard to further education and to glean an understanding of the Institute's structure.

Dottore Carminati conducted a tour of the campus. There are four distinct departments (chemistry, microbiology, enzymology and technology) along with a cheese making factory. The factory is registered to make cheese; however it is not registered to sell cheese. The cheesemaker on staff at present is a specialist in Grana Padano cheese. The factory is fully equipped to make all types of cheese (excluding Gorgonzola). At the time of the visit the Institute was planning for an upgrade of the factory.



ISLC of Lodi cheese factory

The International Experience

The institute dairy farm is positioned three kilometres from town and in June had 50 milking Friesians. The milk produced on the farm is sold to other local cheese producers when the institute factory does not require milk.

Full time students on campus were writing their doctorates, while others had been invited to stay on to do other post graduate work.

Students working in industry attend for block delivery (three weeks out in industry, three weeks at Lodi making cheese and attending lectures). It was discussed that continual education regarding 'best practice' cheese making is a valid way to ensure that cheese being produced is more likely to be pathogen free.

Cheese making students return to their workplace with new and innovative ideas to introduce into their specific factory.

The institute carries out a great deal of research in the field of cheese making. At the time of visiting, research focused upon isolating certain natural bacteria strains that are lactic acid producers and are present in the raw milk used for cheese production. The reason for isolating the individual strains is so the research scientists can preserve these traditional bacteria and safeguard them from becoming extinct.

Some students writing their doctorates were invited to stay on to do post graduate work. Other industry students pass through the normal three weeks in industry and three weeks at Lodi making cheese and attending lectures.

Dottore Carminati discussed the testing they are doing right through the cheese making process to identify danger times for unwanted bacteria and pathogens. Gorgonzola is a raw milk cheese that suffers problems at present with unwanted bacteria.

A type of cheese regional to Lombardia produced using raw milk, naturally occurring starters, and no salt addition was also being studied. This Lombardia cheese is kept at 30 degrees after 'make-day' until maturation is complete, which provides the perfect environment for spoilage bacteria growth. However spoilage bacteria and pathogens are very rarely found. The institute has been carrying out a variety of tests on many cheeses over a whole year, trying to determine what successfully inhibits the unwanted bacterial growth.

Additional Points of Interest

- Milk price farm gate at the time of the visit was 0.40 Euro/Litre.
- Most producers use animal (cow) rennet. Some of the bigger producers that are not making under Consorzio regulations use manufactured Chymogen.
- In 1994 Italy's Foreign Minister set up an international cheese course. Students from all over the world (many from South America and Egypt) spent time at a language university studying Italian then came to Lodi to study cheese making. This course is no longer available.
- Whilst visiting Professor Mucchetti and Sig Mondinelli (see Visit 6 on following page), they estimated that 60 to 70% of all cheese produced in Italy at present is made with pasteurised milk.

Link: ISLC of Lodi website – <http://www.ilclodi.it>

The International Experience

Visit 6: Valle Trompia

Guided tour of two small mountain dairies and a ripening store in the Valle Trompia in Northern Italy

Program coordinators: Professor Germano Mucchetti, University of Parma and ISLC of Lodi and Sig Roberto Mondinelli, Comunita Montana Valle Trompia

The objectives of these site visits were to visit and observe some of the small producers and agers of Nostrano Valtrompia. The region is steeped in tradition and the Comunita Montana Valle Trompia work hard to ensure that local traditions are not lost. The dairy farmers are known as 'malgai' and are renowned for their skill in farming the high mountain pastures during the summer months and transforming the raw mountain milk into rich strong aromatic cheese.

Nostrano Valtrompia cheese is a DOP cheese with its origins dating back to the 15th Century.

Dairy Farm 1 *(Situated a few kilometres from the township of Ombriano)*

The 12 hectare farm is nestled in a small valley with a stream running through the property. 20 Swiss-brown cows were housed in the barn, and ten were producing milk at the time of visiting. This is a father and son set up, with the father managing the farm and milking, and the son making the cheese. The son lives in town with his children and wife who works outside the cheese business.



Mountain dairy farm



Dairy cows housed in the barn

Generally cheese is made once or twice a day depending on volume required and milk available. Only Nostrano Valtrompia cheese and butter is made. After the cows are milked the collected milk is put into shallow trays in the cool room to settle. To standardise the milk the cream is skimmed off the top to make butter, and the remaining milk is used for cheese making.



Butter churn



Butter, packaged after shaping

The International Experience

Ricotta is not made from the whey due to the distance from town and the inability to transport it while remaining fresh for sale. Raw milk without any addition is heated over a fire in a large copper vat.



Fire and cheese copper

The curd and whey are held in a cooking copper and are stirred by hand using a big wooden paddle. The copper is on a swinging arm, which gives the cheesemaker the opportunity to move the curd and whey on and off the heat source as required to maintain a consistent temperature.

After the curd is hooped it is turned twice a day.



Curd and whey being stirred



Cheese curd shaped and hooped

The following day the cheese is dry salted and left in the maturation room to mature for one year prior to sale.

The International Experience



Dry salt application

Olive oil is used to protect the surface of the cheese during maturation.

Dairy farm 2: Alpe Vaia *High above the snow line on Mt Maniva, between Collio and Bagolino*



Alpe Vaia mountain farm

The International Experience

This high altitude farm is only in use from June to September. The 110 goats and 300 cows are moved down to a lower altitude farm once the weather begins to cool, at the beginning of Autumn.

The cheese factory is a small family run business that incorporates an 'agriturismo' and provides eight beds for guests to stay and work on the farm for experience.

Alpe Vaia is run by an incredibly hospitable family, who work very hard to produce milk and cheese. Milking is done via a portable milking station that is taken out to the animals at milking time rather than herding them back to the homestead. This preserves the livestock's energy and allows them to stay close to their food source.

The cheese is made following traditional methods and then transported to Formaggi Trevalli, a local aging store for further maturation and sale.

Formaggi Trevalli is a cheese aging store owned and operated by Sig Silvio Zanini and his family. The cheese store and aging rooms are in San Colombano di Collio. Senior Zanini is passionate about the mountain cheese of his region and works closely with the producers to provide cheese of the highest quality.



Formaggi Trevalli maturation rooms



Formaggi Trevalli cheese deli display fridge

Formaggi Trevalli is home to many aging 'caves' style cool rooms with an extensive range of cheese types and cheese at various stages of maturation.

Link: Formaggi Trevalli website – <http://www.formaggitrevalli.it>

The very small-scale production observed at this facility provided a very humble existence. Family members provided all the labour and the farm provided the vast majority of families food requirements. This self sufficient farming lifestyle has been refined over countless generations. This style of production is sustainable when the lifestyle they lead reflects the work required and the income achieved.

The producers survive with strong support from the greater community. The DOP organisations protect the origins of the cheese and provide a strong base from which they market their cheese. The Italian community as a whole consumes more cheese per capita than Australians and for many, eating the particular cheese from their region is an integral part of the everyday diet.

The International Experience

Asiago, DOP and the Region

Denominazione d'Origine Protetta (DOP)

Records of cheese produced in this region date back to 1,000 AD and Asiago D'alleva represent the mature harder cheese types. Asiago Pressato is a relative new comer, being developed in the 1920s to suit changing market requirements. Asiago Pressato and D'alleva are both recognised as typical cheese products produced in the Veneto region.

Production area for DOP Asiago is from the pasture land in the Po Valley to the Asiago Plateau and in the province of Trento.

The production methods are protected and the cheese controlled by the Consorzio Tutela Formaggio Asiago (CTFA). The cheese factories work with the CTFA maintaining records of milk collection areas, milk quality and quantity to be used for making Asiago cheese. Strict milk handling and cheese making practices are adhered to, which ensure the highest quality of cheese is produced bearing the DOP seal. The CTFA have a regulatory board which visits each manufacturer to observe standards are being maintained. Cheese tasting and grading is also carried out by the board (see Attachment 3: Quality Control Check Sheet, Scheda per L'Esame – Organolettico Del Formaggio)

Each Asiago form (individual cheese) has the manufacturer's code impressed on the side of the cheese along with origin markings and the DOP logo. In addition, a casein code (a small disc containing information to track which dairy the milk came from, date of manufacture and producer) is also added. A monetary levy is paid to the CTFA, calculated from the number of casein codes used.



Asiago casein code

The high level of regulation surrounding Asiago DOP ensures that the heritage of the cheese is protected and that consumers can be guaranteed that they are purchasing genuine Asiago of the highest standard.

Link: Consorzio Tutela Formaggio Asiago website – <http://www.asiagocheese.it>

Knowledge Transfer: Applying the Outcomes

In order to optimise the outcomes of this Fellowship, Vazzoler recognises the importance of ensuring that the knowledge obtained as a result of the Fellowship is shared with others.

Producing a New Cheese

Observing a variety of cheese producers manufacturing Asiago Presato DOP in the Veneto region of Italy has given a strong framework to further develop an Asiago style cheese for Australian producers. A table cheese made from pasteurised whole milk, acidified with cultures (thermopiles and flavour producing), set using rennet, semi cooked curd, vat salt application and with a short maturation period of 20 days offers an exciting cheese style with a production time line and flavour profile that has great potential for application to the Australian market for both producers and consumers.

The commencement of the direct transfer of knowledge of this cheese making process and product would be to begin trials which follow the framework outlined in this report. The results of these trials should be used to refine an appropriate method for application in Australian factories. Ideally these trials would be run over the coming year in conjunction with the NCDEA in Werribee. Collaboration with starter culture manufacturers (such as Danisco Australia) needs to occur to ensure the correct acid development and flavour profile of the cheese is achieved.

A name for the cheese would need to be created for the Australian market. It must be recognised that the name 'Asiago' would not be appropriate to use for an Australian made product. Once one or more methods prove appropriate this cheese should then be added into the intensive practical cheese making course conducted by NCDEA. The method should also be trialled in select registered cheese factories.

A summary of the steps required to introduce a new cheese to the Australian market follows:

1. Develop through trials a recipe that has a flavour profile and maturation time-line similar to Asiago
2. Create an appropriate name
3. Educate and share skills for producing the cheese
4. Launch the cheese into the Australian marketplace
5. Publicity and consumer education

Contact details: Michael Robinson, Head of Campus, NCDEA, Werribee, VIC, and Solita Portella, Sales Manager – Southern Region, Danisco Australia

Marketing and Recognition

Italian DOP associations not only protect individual cheese types, they provide a major marketing tool for producers as well as insurance to consumers that they are getting what they pay for. This applies across the Italian Cheese Making Industry, not just for Asiago cheese. The benchmarking in Australia is carried out via cheese shows and judging. Cheese that is of a high standard in its category is awarded. These awards are a direct indication to consumers that the cheese is of a high quality.

Given the infancy of our specialist cheese making industry in comparison to Italy and that Australia does not have DOP, it could be of great benefit to use the already well organised show system to stimulate new cheese types to be created in Australia.

Knowledge Transfer: Applying the Outcomes

This is worth pursuing given Australia's multi cultural society, the continually growing number of talented cheesemakers using modern technology and access to high quality milk. The industry could be encouraged to enter new styles of cheese into a show category specifically for newly created styles of cheese. A specific class would highlight the flavour attributes important to the style and protect the cheese from being scored down for being out of class.

Initially the DIAA, Victorian Division, could be approached as this body administers the Victorian Dairy Products competition. The inclusion of a new category or award could be tabled for discussion at the next appropriate committee meeting for possible inclusion in the 2010 Victorian Dairy Products competition. Following this, the Australian Specialty Cheesemakers Association (ASCA) could be approached in regards to the Melbourne specialist cheesemakers show, Sydney specialist cheesemakers show and the Brisbane cheese awards and carnivals.

With regard to education and training, NCDEA's new course 'Advanced Cheese Certificate' offers a more comprehensive course than what is presently available and must be promoted. Participants would finish the course with the knowledge and access to information to facilitate further development of Australian cheese styles and create new ones.

It is important to note that Australia's cheese making regulator, Food Standards Australia New Zealand (FSANZ) ensures that consumers are presented with cheese produced to a high production quality.

Link: Food Standards Australia New Zealand (FSANZ) – <http://www.foodstandards.gov.au>

Building on New Skills: the Multiplier Effect

The ISLC of Lodi is a unique institution undertaking many research projects in the field of cheese. It would be of great benefit to the Australian Cheese Industry to foster a relationship between Australian educators and the ISLC. It would ensure that we stay abreast of ground breaking research results to apply to our industry in an information sharing partnership. Professor Germano Mucchetti, who speaks English, has indicated his desire to return to Australia and conduct a seminar for our cheese industry and educators. This could be facilitated by the National Centre for Dairy Education Australia or Regional Development Victoria who have in the past been incredibly supportive and hosted a number of international guests visiting in the field of cheese.

This relationship would also facilitate the opportunity of an exchange program for students and industry employees to travel and work in Italian cheese factories. This type of exchange has mutual benefits for both countries with information sharing and development of stronger ties and friendships with other producers across the world.

Link: Regional Development Victoria – <http://www.diird.vic.gov.au>

Industry and Professional Associates

As a result of undertaking this Fellowship, Vazzoler was invited to be guest speaker the 2009 Dairy Industry Association of Australia (DIAA) Victorian Division State Conference, Friday 15 May 2009 at Hilton On The Park Hotel, Melbourne.

Presenting to the delegates at this conference provided a great opportunity to share the Fellow's ISS Institute Fellowship experience and findings. It also was a perfect forum to overview the further research and product development the Fellow is undertaking at present back in Australia.

Recommendations

Government

Government, industry and tourism groups need to continue to further develop Australia's fresh food culture, focusing on specialist, regional producers:

- Relevant Federal and State Government departments must ensure checks and measures are in place so that small producers are not forced off the land and out of their specialist industry due to increased running costs.
- Increased funding to be provided to further develop new cheese styles for the Australian market.
- Increased funding to be provided for resources to train sufficient people to deliver courses based around new cheese styles (see Education and Training below).
- Bolstered regional tourism by using the well developed tourism network already in place, to promote regionality of milk and cheese styles created.

Industry

The industry itself, led by the professional associations such as NCDEA and DIAA, must adopt a mindset of developing and marketing new cheese styles:

- Provide opportunities for new cheese styles to be showcased.
- Encourage members to attend cheese seminars on new cheese styles.
- DIAA to invite international producers to share information.
- The existing Australian 'show system' to encourage new cheese styles to be entered.

Education and Training

Education and training organisations to keep abreast of new developments in cheese styles and ensure that existing courses are modified accordingly, and that new courses are developed to enable learning to be ongoing:

- NCDEA to continue cheese trials to ensure an appropriate recipe using the information and experience gleaned from this Fellowship is developed for Australian producers and consumers. NCDEA to include this cheese style in their future cheese training activities.
- Through the connections with the ISLC of Lodi, invite international lecturers and technical cheese specialists to visit Australia in order to add depth to courses offered at NCDEA and to facilitate more new cheese styles to the marketplace.
- Further Investigation into the possibility of advanced study for staff and students in overseas factories (international work exchange program) and in education facilities.

Community

There are many in the general public who have a strong interest in food and its production already and this provides a perfect place to transfer knowledge. It is important to facilitate relationships between producers and consumers on many levels – discussions between small producers and the consumer are a direct knowledge transfer, from producer to the public. Understanding and appreciation of products consumers are purchasing will help ensure there is always a place for specialist producers. It is also a direct transfer of knowledge to the producer about new products or new requirements in the marketplace, providing feedback for producers continually progress forward.

Recommendations

ISS Institute

The ISS Institute has a large network of skilled Fellows in many areas. Their approach to facilitation of bringing Fellows together with interconnecting skill areas should be utilised:

- Workshops, seminars and conferences to be developed and presented. These events to be marketed to the general public, industry and educational organisations.
- Working in co-operation with professional industry associations such as the NCDEA and the DIAA, invite specialist from the ISLC of Lodi in Italy to run workshops on manufacture and marketing of new cheese styles.

Further Skills Deficiencies

While in Italy the Fellow identified that some 30% to 40% of cheese produced in Italy was made using raw milk. This is a skills and knowledge deficiency in the Australian Cheese Industry – the industry would benefit from further people having a sound grasp on the skills required to produce a variety of cheeses using raw milk. A new Fellowship should be offered to ensure that this important element of Italian cheesemaking is investigated to determine if it can be replicated in Australia.

Raw Milk vs Pasteurised Milk

It would appear that the Australian Cheese Industry is polarised in its view of raw milk cheese production. As an educator in the cheese sector, Vazzoler believes that there is a knowledge deficiency within the industry itself, and throughout the general public. Therefore it is critical that more people develop an understanding of raw milk cheese production in order to educate others about present day production techniques. The Italian Cheese Industry has a strong history of raw milk cheese production that we can learn from to maximise future opportunities within our own industry.

Quality Control Processes/Procedures

Particular focus should be on the quality control parameters necessary when making cheese with raw milk or moderately heat-treated milk, and an understanding of the quality control process.

Key aspects of understanding to be pursued further would include:

1. Starter cultures used, both naturally occurring and manually added
2. Maturation variables associated with raw milk production and cheese flavor outcomes
3. General hygiene and handling procedures

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Attachments

Attachment 1: Asiago (Extract from Consorzio Tutela Fomaggio Asiago)

Asiago DOP is produced only within certain officially-recognised production zones, using milk collected in the same areas. Each form of Asiago cheese is guaranteed by the Consorzio Tutela, the Regulatory Board for the Supervision of the Production of Asiago Cheese.

So, when you choose Asiago DOP, you can be sure you're getting a genuine - and very delicious - product.

There's only one Asiago, and that is the real Asiago, which always has this symbol marked on the side of each form:

'One cheese, with two different flavours.'

Asiago is an Italian, Protected Designation of Origin cheese produced with two distinct flavours, corresponding with the fresh and ripened varieties. The two varieties can be differentiated not only on the basis of their taste and consistency or the length of the maturing period, but also with respect to the methods of production used. Fresh Asiago - delicate and sweet, like milk fresh from the farm - is produced with whole milk. The ripened variety, the taste of which is stronger and varies according to the length of the maturing period (from 3 to 12 months), is produced with skimmed milk.

Fresh Asiago (Asiago Pressato)

This variety of Asiago has an aroma slightly reminiscent of yoghurt and butter. It is soft to the touch, but not sticky or greasy. Its pale straw yellow colour is indicative of its freshness and ageing period of only 20 days. This highly 'soluble' cheese has a soft, slightly adhesive structure when tasted. The flavour is sweet, with a touch of acidity due to its freshness. It is not salty and, above all, it is never bitter. Again, to the palate, this variety is reminiscent of yoghurt, butter and whole milk.

Once a morsel has been swallowed, a slightly sweet, mildly acid taste tends to linger in the mouth.

Ripened Asiago

This variety has a much more distinct taste. Its aroma is stronger with respect to that of the pressed, fresh type and is reminiscent of the fragrance of yeast, dried fruit and occasionally one can even distinguish a note of boiled chestnuts. To the touch, it is fairly solid; slightly elastic if relatively young, and harder when fully matured. The darker shades of straw yellow typical of this variety can sometimes reach the intensity of amber.

In the mouth, it reveals its distinct consistency and requires a longer time to masticate properly but it is also quite soluble. The sweet taste can acquire a somewhat more savoury flavour and ranges to slightly piquant. The rich aroma becomes refined with seasoning and has notes of dried fruit, butter and can also be sometimes reminiscent of exotic fruits.

After swallowing, the mouth retains the savoury taste, and is easily freed from particles of cheese formed by mastication.

Attachments

Attachment 2: Definition of Casatella Trevigiana, DOP (Taken from the Casatella DOP Trevigiana website <http://www.casatella.it>)

Organoleptic Properties

Casatella Trevigiana DOP has a soft texture, is shiny and slightly creamy and crumbles when eaten. It ranges from milky white to creamy white in colour and may have small, fine aeration holes. It should have no rind, or barely perceptible rind, and is traditionally cylindrical in shape. This cheese has a slight milky, fresh aroma, and a sweet flavour, typical of milk with slightly tangy veining.

Chemical Properties

Moisture	53/60%
Fat	18/25%
Protein	> 12%

Physical Properties

Shape	Cylindrical	
Weight	Large wheel	1.8 Kg - 2.2 Kg
	Small wheel	0.25 Kg - 0.70 Kg
Sides	Large wheel	5cm - 8cm
	Small wheel	4cm - 6cm

Storage

As a fresh cheese, Casatella Trevigiana DOP must be stored at temperatures not exceeding 4°C for no more than 10 to 15 days since it loses its principal characteristics if kept any longer than this time.

Nutritional and Dietary Properties

Casatella Trevigiana DOP is rich in the nutritional properties found in the constituents of fresh milk - protein, fats, mineral salts and vitamins.

With its special properties, the cheese is able to meet the main dietary and nutritional needs of children, adults and older people.

On average, 100 grams of Casatella Trevigiana DOP contain:


Water	53/60%
Protein	15/20%
Fats	20/24%
Calcium	0.50%
Phosphorus	0.40%
Calories	270 Kcal

Particularly suitable for low calorie diets, it contains high biological value protein, is easily digestible and its mineral salts encourage the development and maintenance of bones.

It is also important for its vitamin content, in particular A, D and group B.

Attachments

Attachment 3: Quality Control Check Sheet



Consorzio per la Tutela del formaggio Asiago
Venezia - Corso Fogazzaro 18 Tel. 0444321756

**CONSORZIO
TUTELA
FORMAGGIO
ASIAGO**

**SCHEMA PER L'ESAME
ORGANOLETTICO DEL FORMAGGIO**

CAMPIONE N. _____

NOTE DI PRESENTAZIONE _____

COMMISSIONE/COMMISSARIO _____

DATA _____

LOCALITA' _____

CATEGORIA ASIAGO PRESSATO

ASIAGO ALLEVO mesi _____

Insufficiente	Mediocre	Medio	Buono	Ottimo
1	2	3	4	5

DIFETTI DELLA FORMA

Dimensioni

Scalzo

Facce

Crosta

ASPETTO ESTERIORE

1	2	3	4	5
---	---	---	---	---

ALTERAZIONI DELLA PASTA

Colore

Occhiatura

Sfogliatura

Gonfiore

ASPETTO DELLA PASTA

COLORE

1	2	3	4	5
---	---	---	---	---

OCCHIATURA E ALTRI ASPETTI VISIVI

4	6	8	10	12
---	---	---	----	----

ALTERAZIONI GUSTO-OLFATTIVE

Odore _____

Aroma _____

Sapore _____

PERCEZIONI OLFATTIVE E GUSTATIVE, GUSTO-OLFATTIVE

ODORE

4	6	8	10	12
---	---	---	----	----

AROMA

14	16	18	20	22
----	----	----	----	----

SAPORE

14	16	18	20	22
----	----	----	----	----

STRUTTURA CONSISTENZA

14	16	18	20	22
----	----	----	----	----

MATURAZIONE

Giovane Pronto Passato

PUNTEGGIO TOTALE

EVOLUZIONE: _____

NOTE: _____

scheda CNVF modificata

LA COMMISSIONE _____

Attachments

Attachment 4: Casatella Trevigiana Map

