

REPORT ON THE CAPER INDUSTRY IN THE MEDITERRANEAN REGION

FOR THE CHURCHILL TRUST

**Brian Noone
2002 / 1
Contact:
briannoone@va.com.au**



Table of Contents

1. EXECUTIVE SUMMARY	3
2. Acknowledgements	4
3. Introduction	5
4. Aims of the Research	7
5. Where to go?	8
6. Programme	9
7. Report	10
7.1 Italy	10
7.2 Morocco	15
7.3 Spain.....	19
8. Overview of the region	21
9. Conclusions & Recommendations	23

1. EXECUTIVE SUMMARY

Brian Noone
18 Pelham St
Ethelton
South Australia 5015

Horticulturalist
Phone 08 8449 4107

The project's aim was to examine how capers are grown and processed in the Mediterranean countries of Italy, Morocco and Spain. The aim was to also ascertain the overall viability of the caper industry internationally and to explore the possibility of such an industry in Australia.

In Italy, the main place visited was the Island of Pantelleria where a vibrant Cooperative existed supporting the caper industry. The director, Rosario Cappodona at the Cooperativa Agricola Produttori Capperi, was very helpful.

In Morocco, the most important facility visited was a factory in Fez. Driss Guessous is the director of 'Capers Ucimar' and discussions with him were most valuable. Dr Braamer the Director of a caper cooperative near Meknes was also helpful.

In Spain, we travelled through the southern region, visiting various processing facilities and caper plantations. A full photographic record was kept of the trip.

The major lesson of the trip, based on the economic analysis of the industry and the countries involved, is that it will be difficult to establish a caper industry economically because of the unequal competition resulting from the cheap labour in a developing country such as Morocco.

However it is possible to establish a caper industry, if it is carried out differently, with innovation and with concern for the consumer. Australia has the horticultural knowledge and ability to grow a crop better than some of the existing operations, and our expertise in the food industry gives us advantages.

I have already spoken on radio about the caper industry and the Churchill Scholarship. I will continue this work. I am also writing a book based on the information attained from the trip.

Business plans are being carried out to further expand this fledgling horticultural venture.

2. Acknowledgements

I would like to record my sincere thanks and appreciation to the Churchill Trust for the fellowship, which enabled me to travel and carry out the research into the caper industry. The information and photographs will contribute to a book on Capers.

Thanks also to

- Roger Thurson Napoleon Company
- Rosario Cappodona at the Cooperativa Agricola Produttori Capperi
- The late Maria Moloney for invaluable help with literature search
- Acmed for interpreting and travel guide in Fez
- Driss Guessous from 'Capers Ucimar'
- Anita de Silva in Qantas
- Abu Kourouma for interpreting and travel guide in Casablanca
- And finally Julia my partner and travel mate.

3. **Introduction**

(History of Growing Capers (*Capparis spinosa inermis*) in Australia)

The wholesale nursery "Cottage Herbs" began growing capers about ten years ago. Seed sources were limited but purchased from Canada and after a little success, extra seeds were acquired from New Zealand. Sources admitted that they were old stock.

A degree of success in propagating caper seeds was achieved. Plants were initially grown in round 5" pots. Growth was slow, the leaves were often purple in colour and it was hard to get them to look good for the spring sales.

A few caper bushes were planted in the Herb garden with some success, and then a larger planting of caper plants was tried in a special bed, which had been solarized to eliminate weeds; lime and compost being added before planting.

These capers had a small degree of success. They produced capers, flowers and some berries, but were not highly productive. Experiments were tried using different aspects and methods of planting based on the knowledge of how they were grown overseas, together with results from previous plantings.

Excellent results were attained from these experiments, producing large bushes with many capers and berries. An understanding of the water requirements of the caper plant was also achieved.

Individual varieties with special qualities were isolated.

New plantings were made, based on experience and a crop seemed possible.

At the same time, many experiments were carried out on the propagation of caper plants. These trials resulted in a very high rate of propagation from seed, and a satisfactory rate of vegetative propagation. This meant that it was possible to clone in good numbers those varieties that grew well and produced a higher quantity and quality of capers and caperberries.

So it was successfully demonstrated that it was possible to grow capers in South Australia. In fact plants responded well to high temperatures; and to little water. Caper plants, once established, produced capers over a long season; they could survive and be very productive relying on local rainfall only. (c 450mm per annum)

At this stage, because there exists no previous body of knowledge or experience of growing and processing capers in Australia, it was necessary to find out how other people had been cultivating and picking capers for thousands of years. Also it was important to know where the state of the caper industry was at this stage and also to examine in which direction it was headed.

An application for a Churchill scholarship was made and was successful.

4. Aims of the Research

The aim of this research was to look at existing places where capers were being successfully grown and/or harvested, to examine how they were being processed, and also the socio-economic factors affecting the industry.

It is planned to use the material attained to publish a book on the caper industry.

5. Where to go?

I knew that capers had been a part of the Mediterranean diet for over 5,000 years. Actually, archaeologists from La Trobe University in Melbourne, has unearthed caper seeds, along with grape, pistachio, almond and olive seeds, at a site called Marki on Cyprus, which belonged to the middle Bronze age.

The countries chosen were Italy, Morocco and Spain. In Italy, an island called Pantelleria has a strong tradition of growing capers, processing and marketing them all around the world.

I also knew that many capers were exported around the world and labelled 'Product of Spain' and I knew of the Spanish industries serious attempt to encourage the caper industry in Spain.

It was also known that some of the capers processed in Spain actually came from Morocco. It appeared that Morocco was most important in the production of capers.

There were other countries cultivating capers, mainly Greece and Turkey but these were excluded because of time, security and other limitations. Some information on these countries is available from research data and the Internet.

6. Programme

City/Country	Organisations Visited
Pantelleria	Visit to Cooperativa Agricola Produttori Capperi
	Farm visits
	Plantation visits
	Nicchia and other retail outlets
Sicily	Retail outlets in Palermo
	Plantation visits around Trapani
Morocco	CMPE Government Department promoting exports Casablanca EACCE
	Chamber of Industry, Commerce and Service Casablanca & Fez.
	'Capers Ucimar' Fez and other processing plants
	Plantations around Fez
	Retail outlets and herbal medicine clinic in the medina Fez
Spain	Caper plantation near Moron de Frontera
	Plantations around Almeria and Granada
	Fragata / Angel Camacho Moron de Frontera
	Luxeapers at Nacimiento near Almeria

7. Report

7.1 *Italy*

On our way to the Island of **Pantelleria**, which is between Sicily and Africa, we had to go through Rome. So we spent some time looking at this ancient city. One of the major attractions of Rome is the Colosseum. As Julia and I walked around this imposing structure on our first day in Europe and in the Mediterranean region, we noticed two plants growing from the walls of the Colosseum, about half way up the building. They were *Capparis spinosa inermis*, the reason for our trip to Europe, the caper plant.

This was a good omen for our adventure with the caper plant.



Caper plants on the walls of the Colosseum Rome

We saw capers growing in various parts of Sicily but it was Pantelleria that we wanted to see and experience. To get there, we travelled from Trapani by overnight ferry.

In Pantelleria, a post volcanic island, occupied over the millennia by Romans, Arabic and other peoples, we found a strong community industry of caper production.

As part of the European Economic Community, Pantelleria had actually registered its island name and the variety of caper as a protected marketing venture. (IGP Indicazione Geografica Protetta) "Cappero di Pantelleria" is the protected name

The variety grown on Pantelleria is much the same as the selected types that are grown in Adelaide. The Pantelleria variety is known botanically as *Capparis spinosa inermis* cultivar "Nocellara". The leaves are normally quite round and very green. There are no spines at the leaf axils and the quality of the capers is excellent.

The recorded history of growing capers on Pantelleria goes back to 1850, hence tradition, family knowledge and generations of experience, has played an important part in the development of caper culture on Pantelleria. The dry stonewalls divide the terraced hillsides. The elements of rich soil, full sun, coastal conditions and experience make for a successful recipe.

(An Italian quote from the 1600's talks of the medicinal and aphrodisiac properties of capers.)

Pantelleria prides itself on the method of fermenting and preserving capers. They do not use vinegar and rely solely on salt. They believe that this method is the best for preserving and enriching the flavour of capers

The Cooperativa Agricola Produttori Capperi coordinates the caper industry on Pantelleria and Rosario Cappadona is the Director. He was very welcoming, helpful and cooperative in our discussion on all aspects of the caper industry. They have a processing plant at Scauri, and we were shown around. An old wooden machine did the actual sorting. Capers are carefully sorted into different sizes with an international nomination.

Nonpareilles	0-7mm
Surfines	7-8mm
Capucines	8-9mm
Capotes	9-11mm
Fines	11-13mm
Gruesas	>13mm

Tourist buses make regular stops at the Cooperative, in Scauri.

The Cooperative has a new marketing arm "La Nicchia" which has a shop front in the main town of Pantelleria, and they operate the overseas trading of capers. The shop also carried local and Sicilian wines; and a wide range of caper preparations in well-presented, attractive containers.



Raphaella at Nicchia shop Pantelleria

On Pantelleria, the bulk of harvesting is done from small plantations, which are divided by volcanic dry stonewalls and terraced. I estimated that a large number of the plots were about 1 acre, some up to 5 acres.



A caper plantation in the valley of Monastero. Island of Pantelleria

We witnessed the plants in the first month of summer; the careful pruning was obvious and the husbandry techniques were well used to prevent the over-wintering of caterpillars, (This differs from the caper plants in Morocco, which have a large insect problem. I will discuss this problem later.)

No weeds were present, but no mulching was evident. The soil around the plants was very sandy.

The plants were at different stages of re-shooting. The uneven size of the plants could be explained by different planting over the years due to initial poor propagation rates of cloning; possible different levels of nutrients in the soil; the availability of water in spring and early summer, and the type of pruning. The difference in size can level out as the season develops.



Capers in a dry walled paddock, grapes behind, Pantelleria Island

On the whole the plantations were impressive and conducive to a good harvest. The processing factory had not commenced because of the mild weather. In Adelaide we have developed plants that commence early to set flower buds (capers) by various techniques. Hot weather is a factor and a definite advantage.

We visited some farms that cultivated capers. Some farmers still lived in the traditional houses called "Dumasi", which have a domed roof for catching rain, which is directed inside the walls to underground tanks. Some farms were mixed, growing olives and other crops.



A traditional "Dumasi" house with Zibibbo grapes in the foreground

The caper industry on Pantelleria was aimed at an export market. They do not collect the caperberries, or the young leaves. These products mainly come from Greece and are imported into Australia.

Locally some capers are used in restaurants to enhance traditional recipes. Apart from some interesting craftwork based around capers, there wasn't an obviously local dominant or tourist feature made of the capers.

7.2 Morocco

We travelled to **Morocco**, initially to Casablanca, where we consulted various government agencies. It was soon obvious that little was to be achieved in Casablanca with regards the growing and processing of capers, so we travelled on to Fez.

We visited a very impressive factory "Capers Ucimar" directed by Driss Guessous.

Capers Ucimar was Spanish owned and employed local workers. The capers were delivered to the factory by small trucks, in large bags of approximately 50 kilograms. Conveyor belts moved the capers upwards and into the factory where they were automatically sorted by a large machine.



*Large bags of capers (c 50kg) being emptied onto conveyor belt.
Caper factory Fez, Morocco*

Excellent quality control, of which the company was justly proud of, was conducted as the capers went up the conveyor belt and on to further processing stages.

This quality control removed foreign matter that had been collected with the capers, leaves, small berries and stems. Although this process employed many people, it was necessary due to inefficiency at the point of picking. Checking and the grading of the different

sized products from the sorter were important. This completed, the capers were stored into plastic drums for processing.



*Quality control at every point of the processing,
In a caper factory in Fez.*

Driss was very helpful, and generous with his time and information. We conducted a vigorous discussion in the boardroom of the company office. Among the topics covered, was the question of using insecticides with toxic residues. This topic was initially sidestepped, but eventually it was admitted that insecticide were applied to plants in late winter. So to have any effect in the growth period of summer, they had to be long-lasting and "heavy".

Report from health departments in Europe and England had shown earlier this year that capers coming into these markets from Morocco had been found to contain dithiocarbamates, which comes from insecticides and fungicides. These capers were being refused entry into England and Europe.

Caterpillars, the main insect problem for caper plants, can be easily treated in a plantation situation with non-toxic biological or organic,

methods. Picking in the wild does have problems. The number of new plantations is increasing in Morocco but remains less than 50% of the crop, as reputed by some Moroccan sources.



A caper plantation near Fez in Morocco

The Moroccan plantations we saw were not particularly impressive and of the two areas of cultivation, Pantelleria definitely has a stronger tradition and success rate cropping capers.

The variety of capers used in Morocco is generally a greyer form than that used in Pantelleria. It is spiny with a degree of pointing of their grey leaves. The stems however, did have side branches, which produced more capers. They were in fact closer in form to the variety grown in the well-drained soils of southern Spain. It was surprising that they had not developed a similar variety to *Capparis spinosa inermis*, of the Pantelleria variety. Although, most of the recent crop has been picked from the wild. In this situation pickers have to travel a long distance from plant to plant to collect the capers. There is a saying that in these situations, "the picker has to walk a kilometre to collect a kilogram of capers." The experience in Australia indicates that a kilogram of capers can be picked in roughly an hour and the picker needing to walk only 10-20 metres.

We witnessed capers being picked in the wild and saw plantations of capers; some in open paddocks and others interspersed with olive trees. There appeared to be no drip or irrigation systems being used.



Picking capers from the 'wild' in Morocco

The capers are usually collected very early in the morning for two reasons.

- 1) the heat, once the day developed, making it too hard to work
- 2) the fact that the caper flower opens quickly in the sun and only lasts half to one day. And the caper must be picked before it starts to open.

The capers are taken to a wholesale market in the rural area, at about 8am and sold to buyers who transport the capers to the factories.

We were fortunate to meet Achmed who was a teacher and a local community councillor. He spoke Arabic and French. He introduced us to local farmers and processors. He also took us on a tour of the Medina (the old walled city) in Fez, where he introduced us to areas not normally seen by tourists. We spent time with his family and they served us with fine meals.

On the tour of the Medina we found a medicinal herb shop with two brothers dispensing medicines, massage and essential oils. The capers (the Arabic word for capers is "Kapar") were a part of this herbal medicine, and were used to treat a range of medical conditions. Caperberries were also used medicinally.

7.3 Spain

In Spain there are still areas with plantations of capers, some up to 10 hectares. These surviving plantations were impressive with even growth, which is consistent with better propagation rates. There was no evidence of pruning.



Caper plantation in Southern Spain

But large areas have been abandoned for economic reasons. The Spanish finding it a better proposition to import capers from Morocco. This has had a devastating affect on rural towns and communities who relied on capers for work and income.



*Large caper plant in early June near Moron de Frontera Spain
The comparison with the pruned caper plants on Pantelleria, for the
same time of year is interesting.*

Many of the caper operations in Morocco are actually owned by Spanish firms. Some still import the raw capers and process them in Spain. We visited some near Almeria, but were unable to gather solid information about the new arrangements. Previously the caper industry had been extensive in Southern Spain. The horticultural practices were very impressive. Some of the Moroccan capers are processed at Agrucapers near Murcia, in southern Spain, and some in southern France.

As a general observation travelling through both Spain and Morocco, we found that wherever we saw the presence of Prickly Pear growing in the wild (not a planted hedge), we would also find capers growing wild. There appeared to be a similar ability to survive on little rainfall.

8. Overview of the region

Capers grow in the Mediterranean region because of the hot weather; the richness of the soil, especially Pantelleria; low rainfall; coastal conditions; and the lack of competition such conditions favour. South Australia is a similar distance from the equator, has remarkably similar very hot, dry weather, low rainfall, and extensive coastal conditions.

The caper plant itself is very hardy, witness the plant's survival on Rome's Colosseum and other tall dry soil less walls. Its leaves have been carefully studied to understand its ability to avoid dehydration.

The caper industry has also development in the Mediterranean region because of the social, cultural, and economic systems that have emerged over hundreds of years.

In Morocco, the industry thrives on cheap labour readily available in a developing country. The widespread horticulture and agriculture of Morocco are very impressive, but as an outsider the question can be raised about the complexities of the system which results in such an apparently unequal distribution of wealth.

The cheap labour seemed relatively unorganised and inefficient with workers having no industrial protection with little regard to their occupational health and safety.

Capers are produced and initially processed in Morocco successfully and profitably for the large agriculture companies because of the cheap and unregulated labour.

However the capers are sorted, fermented and despatched as simple capers in salt, brine or vinegar. Most of the value adding takes place in developed countries where ingredients such as anchovies, tomatoes, olives etc are added and made into sauces etc. The Moroccans I spoke to, said they had enough to do in processing the basic capers and were content to leave the 'value adding' to others.

From my observations, in the caper industry, there is a developing problem arising from the use of chemical insecticides and herbicides. In fact, evidence has emerged of residues of harmful chemicals from the use of long-lasting chemical based insecticides.

Any hint of contamination is absolutely unacceptable in a food crop. Capers are part of a cuisine and a culture that places emphasis on food and especially good clean food.

The discovery of toxic residues in capers is a major and timely warning to the industry that horticultural practices need to be closely examined, to bring standards up to a level of best practice.

There is a need for the people growing, processing and marketing capers to develop an international organisation. The growers and processors must see themselves as an industry and for the good of the entire industry, problems and future directions must be examined in an atmosphere of cooperation. Most industries, apple growers, sugar growers etc, have industry bodies. Although competitors, all involved in the caper industry, need to come together with the overall good of the industry to be the primary aim.

9. Conclusions & Recommendations

Food experts in government circles in South Australia tell us that to introduce a new crop or food product into Australia, it has to be; cheaper, better. or done differently.

At this time South Australia cannot compete with the cheap labour available to the Moroccans

We can do it better in a few areas, and maybe with our food expertise in South Australia, we can successfully do it differently.

There is also a developing interest in capers for other uses. Capers supply a large amount of rutin, which is used in medicinal preparations, and the capers have been found to be useful cosmetically and in treating dermatitis, and other skin conditions.

More work needs to be carried out to assess the business feasibility of developing and processing a caper crop in Australia.

In conclusion, if we are smart enough, and careful enough, capers could become a new and exciting crop addition complementing and adding depth to the existing Mediterranean style produce.