

Durum wheat - a specific market

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Summary. Growing durum wheat for the manufacture of pasta in South Australia is a new but potentially profitable venture for farmers who are involved. Since 1990, the number of farmers growing durum wheat has increased from 12 to 200 and production has risen from 200 t to 36,000 t. Close co-operation and consultation between the producers and the processor and pasta manufacturer has been a feature of the growth of the durum wheat industry in South Australia and is central to the future development of durum production. Quality is very important and to be successful in the future we need to produce enough grain that consistently meets the specific requirements of the durum market. Farmers who now grow durum wheat are well aware of the importance of quality and strive to meet these requirements. This development has been underpinned by a guaranteed price which has allowed farmers to grow a crop which at present is still economically risky.

Introduction

San Remo Macaroni Pty. Ltd. is a large manufacturer of pasta that has been producing pasta for over 50 years. The company is based in Adelaide and until recently obtained its durum wheat from NSW; very little durum wheat has been grown in South Australia.

Durum wheat was grown by a small group of farmers in the Mallee for several years but production was low because the yields they achieved were lower than those of other wheat varieties. Without a guaranteed price to offset the lower yield, durum wheat was not an economically-viable alternative and there was little incentive to develop the durum wheat industry. In late 1989 I was approached by Jim Lewis of the Waite Agricultural Research Institute to assess the feasibility of growing durum wheat for San Remo. After much discussion 12 growers were each invited to grow a paddock of durum wheat.

The growth of the durum industry in South Australia

In 1990 the 12 growers produced 500 t of durum wheat and the grain from the harvest was renown in 1991 when 70 growers produced 11,000 t. Last year more growers were contracted to grow durum wheat and 170 farmers produced approximately 36,000 t. However because of adverse weather during harvest, 75% of the grain was down-graded to feed quality. Hopefully, this year we will produce the total requirement for the manufacturer.

As the number of farmers has increased, so too has the area over which durum wheat is grown. Associated with this growth has been a need to develop a network of delivery points and storage facilities. We now have a system for 1993 which will see durum wheat grown on farms from Kimba on the Eyre Peninsula to Waikerie in the Murray Mallee then at harvest be delivered to nominated silos such as Pt. Adelaide, Owen and Ardrossan. During 1994 it will be transported to the mill in Adelaide as it is required, to be milled and processed into a large variety of pasta products. It will then be delivered to the wholesalers, retailers and exported overseas.

The importance of quality

Growing wheat is normally considered by cereal growers as their major source of income. In most cases it takes priority over other crops in terms of management of soil fertility and preparation for its production. In the past more emphasis has been placed on the quantity of grain produced rather than on grain quality because there has not been a great variation in the price for grain protein, nor has there been encouragement to produce wheat above a specific level of protein. With durum wheat however, grain quality is very important and farmers who grow durum must be able to achieve high protein levels in their grain. The processing plant at San Remo has been upgraded in the last few years to supply a large part

of the Australian market as well as a growing export market. Their machinery is computer controlled and requires grain of a specific quality. The company needs a reliable supply of grain of a consistent quality to run their plant efficiently.

The local market requires approximately 30,000 t of grain with a grain protein concentration of 12% or more each year. An export shipment of durum wheat has a minimum requirement of 5,000 t with a protein of 13% or greater. In both the domestic and export markets low protein is not acceptable and grain that does not meet the minimum protein specifications immediately becomes feed grade with a severe loss in income to the grower. The large difference in price between feed grade and durum grade makes durum wheat a high risk crop to grow in an environment where grain protein levels can vary considerably.

Durum growers are now learning the techniques required to produce high protein wheat for a specific product and the complexities of growing for that market. The challenge to grow high protein durum wheat is the task that has been set and it has drawn on the resources of all the farmers involved to meet that challenge.

Current production in South Australia

The average yield of durum wheat achieved by farmers in South Australia since 1990 has been between 2.0 t/ha and 2.4 t/ha with a large variation in protein levels, from 9.7% to 15%. The variety Yallaroi is the only durum wheat recommended at present. but its yield is variable, in some instances only 75% of the yield of conventional hard wheat grown under the same conditions. Yallaroi does not stool as well as conventional varieties and it is perhaps more sensitive to chemicals and requires higher seeding rates than conventional wheats to compete with weeds. However, it has good rust and disease resistance.

Durum wheat in South Australia is grown from the Eyre Peninsula in the west to the Malice in the east. This covers a diverse range of soil types and climatic conditions which has a dramatic effect on yield and protein. We have some growers producing 0.8 t/ha and others producing 4 t/ha; yields range from 75% to 100% of the yield of conventional hard wheat varieties. Grain protein concentration ranges from 10% to 15%. These protein levels are not related to rainfall. but disease, soil fertility and crop rotation appear to have the greatest effect on grain protein; this is becoming more evident as we collate information from the durum growers.

A partnership between producer and manufacturer

It was clear from the start that growing durum wheat was going to be different from growing conventional hard wheat because of the importance placed on quality and the economic risk of producing an acceptable product in a variable environment. Two things were essential at the start of the venture and continue to be important to this day:

Consultation between the manufacturer and the farmers so that firstly, the farmers were aware of the specific requirements needed by the manufacturer to produce high quality pasta, and secondly, that the manufacturer appreciated the difficulties of producing grain of acceptable quality.

A contract with an agreed price and conditions to provide security of agreement, and an association to communicate between growers and their market.

A Durum Growers' Association was formed at the start to keep farmers informed about technical and marketing developments and to work as one body in arranging a contract and negotiate a pricing structure.

The process of developing the durum industry in South Australia has been one of learning by the growers and the manufacturer as we work together to grow durum wheat and produce pasta products. At first the manufacturer did not understand the complexities of consistently producing high protein grain in an environment with a range of soil types and variable weather conditions. Farmers who grow durum wheat

are now aware of the importance of grain quality to the pasta manufacturer. Maintaining this partnership between producer and processor will be important for the further development of the durum industry in the state.

The number of growers now involved in this specific market is 200 which is a little large and time consuming to manage, but as it becomes established and those who cannot achieve the high protein levels required drop out, then much can be gained by close co-operation and sharing of information between those who remain. The number of growers required to continually produce sufficient quantities of durum wheat with acceptable quality will take some time to achieve. One has only to look at the history of production of hard wheat and of malting barley in South Australia to appreciate this fact.

The Durum Growers' Association has had a major role in helping growers with the many difficulties experienced with this new venture. It has also been a very important part of developing the contract which meets the needs of both parties giving them security and understanding of each other's situation and requirements.

Ultimately, the aim is to produce a product that will satisfy the needs and desires of the consumer. The manufacturer knows the type of product that will sell in the marketplace and the best and most efficient way of producing the product. It is the responsibility of the farmer to provide the right type of grain for processing. To advance the durum industry in the state, a large amount of information is required, together with good management, throughout the whole production and processing chain, from sowing the seed to preparing the end product. The durum industry in South Australia is still developing and during the period of establishment there needs to be regular communication between producers and the end users in order that the successes achieved to date continue in the future. These are just a few of the requirements needed to produce a product, from "Farm Gate to Dinner Plate", and all for \$2 per packet!