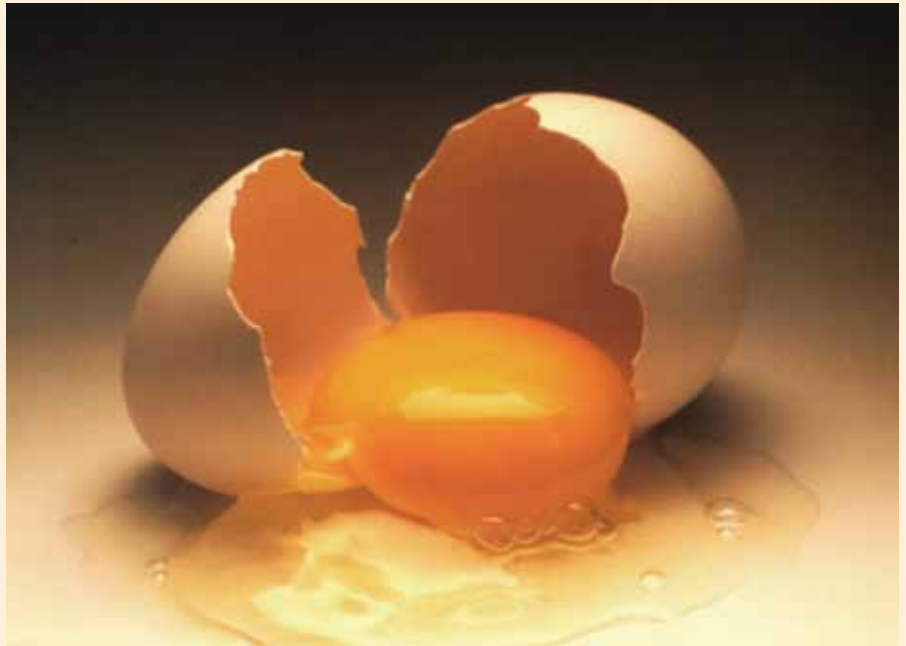


# Adding value to the basic egg



**Adding value to the basic egg is not difficult. All it requires is a mindset change and the willingness to move from farm to factory writes FABIO BORTOLAMI\*.**



**T**he technological improvements in modern packing centres have pushed the quality of shell eggs right to the top. This has led to an increase in the number of off grade eggs, rejected by electronic scanners or more and more strict human candlers.

There is another economic consequence to this quality improvement - all egg production and packing processes are now brought to state of the art levels where there is maximum cost control, efficiency and performance. In such a perfect situation, the cost (or the lower profit) for the off grade eggs becomes more important, while offering a margin for improvement.

The best solution for maximising income from off grade and unsold eggs is to transform them into a value-added product such as pasteurised liquid egg.

In countries where food companies are obliged to use pasteurised liquid egg the extra value is easily perceived because this is the only product which they are able to source as an ingredient for their recipes. But even when pasteurisation is not mandatory the availability of a ready-to-use

packed liquid egg can bring to the users great advantages and so they should be keen to pay a premium price for the processed 'off grade' eggs.

Packed liquid egg is indeed more practical to use as it cuts down on labour to manually crack the eggs and it does not result in any environmental problem with the shells. Most importantly, it is 100% salmonella free, while remaining free also of any other pathogenous bacteria.

Once the decision to transform the shell eggs is taken, a new scenario opens up for companies that only have experience in producing, packing and grading shell eggs.

Indeed, the step from shell to liquid looks simple but it is not. It implies a complete mindset and attitude change for company, from being a mere 'producer' to transforming into a 'processor'. In other words they have to move from 'farm' to 'factory', from agriculture to industry.

## **Guidelines for investors**

The first factor is the size of the plant - bigger does not always mean better.

The plant should have a correct size for the 'current' situation. Future expansion should be in the form of extending the production to a second and third shift. Only after this phase should the company consider installing a larger production line.

It makes sense to start with a plant that is installed on compact bed frames which are just placed in the room and connected with cables and pipes. The advantage of a skid-frame solution does not only offer great benefits in production (less waste of water and chemicals, faster warm up, less product waste from start to end of the process, less space required in the factory) but it also allows a quick switch to a bigger unit when the market demand increases.

A compact line can be easily removed and easily traded because it is a one piece, plug and play system, a working unit which can easily satisfy the needs of many other investors looking for the same solution at start-up.

When evaluating the size of the plant, it is advisable to look at the market more than at the internal egg capacity. Of course making sales projections in a market which is new



is not that easy and requires a host of marketing and survey skills. If the internal egg production does not seem to be enough to serve market demand, it will be quite easy to source some extra eggs externally.

The minimum economical batch is also a parameter which cannot be underestimated and it is important especially at the start-up of the new plant.

Several liquid egg processors have run into serious financial problems because they failed to produce good quality products. This is a typical problem. It is not related to the bad engineering of the plant but simply to the small production size. To ensure quality, there is a basic optimum quantum required for production.

Modern egg pasteurisation is a continuous flow process with a start-up time, warm up time and production 'tail' of product mixed with water at the end of the batch. It is safe to consider a minimum workable batch of three or four hours non-stop production. If the market at the start-up is small, avoid investing in a line that is able to process the needed batch in only one or two hours.

The second point to consider is the range of products in your portfolio. If the market is unknown, the best alternative is to invest in a fully flexible line which allows production of a number of egg products including separated eggs and with salt or sugar mixes.

Normally the most common and simple product to offer to the

market is liquid whole egg. But later as customers become loyal to the brand and the service, they are likely to explore more specific preparations and mixes to improve their recipes or processes.

Special products such as yolk with sugar or whole egg with salt require longer time for preparation but they have the highest premium prices. It is also important to keep in mind that if a potential market is found for yolk products, then automatically the company must be able to sell the albumen. That is because for every 1 kg of yolk, there is about 2 kg of available albumen.

The last and most difficult choice is the packing system. All efforts to produce a state-of-the-art liquid egg product with good functional properties and the safest microbiological parameters will be wasted if the packaging does not appeal to customers.

So, before choosing the packing system, it is important to conduct a market survey, contact key prospective customers and evaluate their views of different types of packaging.

The market test must consider parameters like pack content, flexibility of pack size, pack material, pack closure, and look. If this survey does not bring any clear results, it is much safer to start-up with a simple filling system which requires a minimum inversion.

It is wise to leave the serious decision on investment in the packing



**A variety of packaging choices are available to choose from after a serious market survey.**

machine for a better moment when the ideas are clearer.

In case the choice of the best pack has already been made, then the decision maker can select from a variety of filling and packing machines. There are thousands of different technologies, models, solutions and companies offering a variety of options with varying degrees of functionality and flexibility.

How to move in such a well built labyrinth? Always think simple and consider how different liquid egg is from any other edible liquid. Egg is viscous and contains fats and makes foam, and it coagulates at 66°C. It is subject to the highest bacterial load when left in contact with air.

Moreover egg composition is subject to change because it is affected by the breed, the feed type and the age of the bird. No other industrial product shows such significant variances. So, study the system before making the investment.

Packing is the most important and delicate phase of the process, if you don't want to spoil your efforts and gain the best returns from good quality liquid egg products, only trust suppliers with real experience and with specific machines engineered for the purpose. Ap

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**The choice of the correct pasteurisation line starts from the estimation of needed capacity.**