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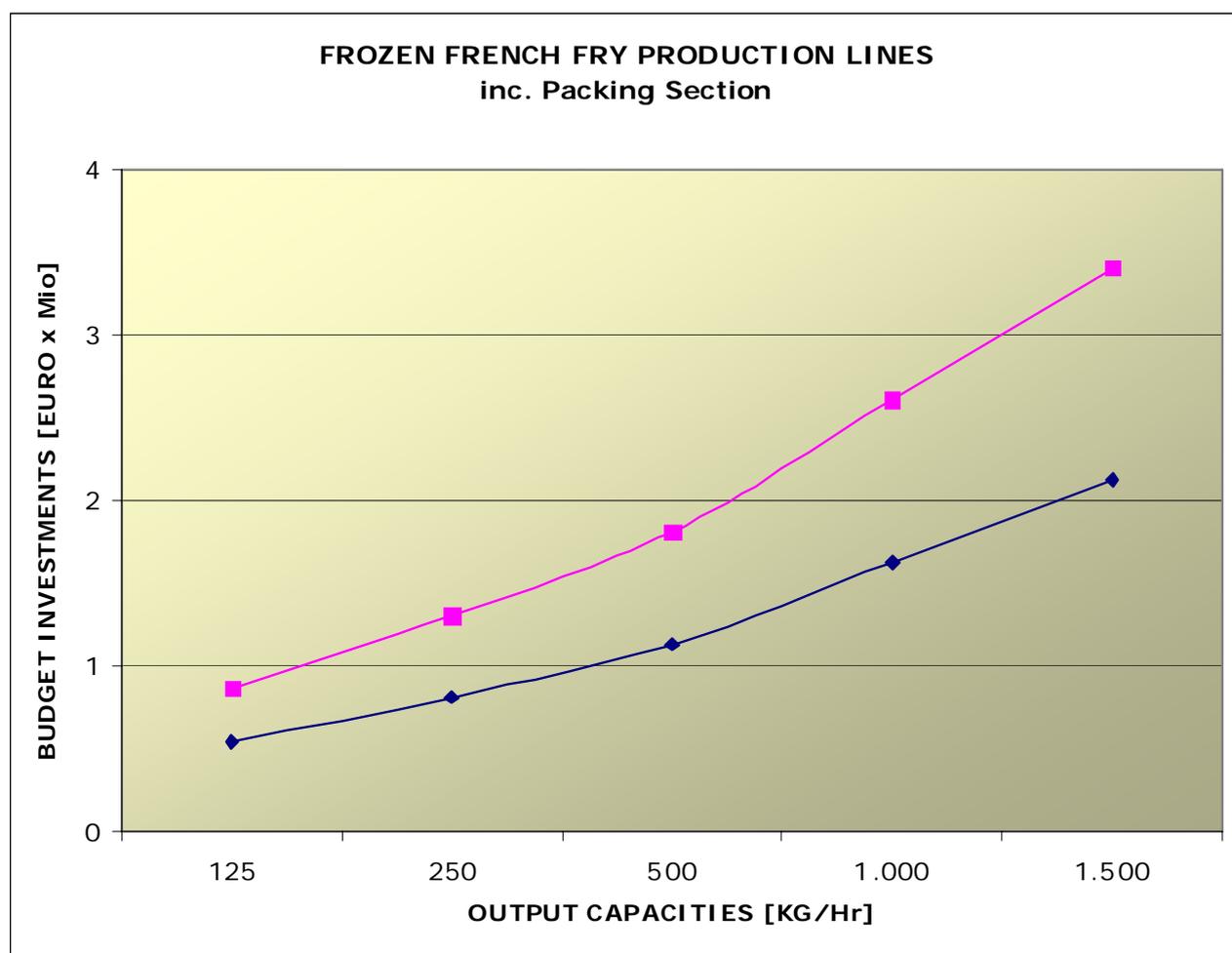
## Considering Investment in frozen French fry processing?

Concerning today's growing interest to process potatoes into frozen French fries, it is good to take notice of the following considerations.

To guarantee the minimum required finished product qualities, industrial French fry production is normally a continuous process. This means that the modern standard production line consists of individual machines, which operate on a continuous (or semi-batch wise) basis. Such machinery can be adjusted real-time, which means that production variables can be fine-tuned during production, realizing stable and reliable product qualities.

Because of the technical construction of these machines, their construction costs - in relation to their production capacity - are relatively high for smaller capacity ranges. This is why these production lines are only commercially viable, if a minimum output capacity is guaranteed. For frozen French fry production, the typical minimum output capacity lies at approx. 125 Kg/Hr. Having said so, it needs to be emphasized that smaller capacity lines are available or can be manufactured; it is only so that these smaller lines are commercially less viable.

Following figure provides an indication of investment costs, which need to be budgeted for, when frozen French fry production is considered.



Typically a standard production line with a relative small production capacity of 250 Kg/Hr requires an investment of approx. € 4.000 per Kg of finished product, while a larger capacity line of 3.000 Kg/Hr requires an investment of approx. € 1.500 per Kg of finished product.

Doubling line capacities, in no way doubles investment figures!

Although total investment figures for larger capacity lines are considerably higher, the finished product can be produced at much lower production costs per Kg of finished product.

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Please note that this is not valid for the packing section, which typically requires 15% of the total investment. Here the minimum packed bag weight determines the required machinery and therefore the total investment. In practice, the total investment for the packing department doubles when the output capacity is doubled!

### French fry product qualities

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French fries are produced at many different qualities; the differences between these qualities are very large. Higher quality lines require higher investments and these differences can be dramatically, as reflected in the second graph line in above figure. A fast-food line may require twice the investment of a standard French fry line!

Our years-long experience has taught that lines, with capacities smaller than approx. 500 Kg/Hr, are not considered viable. Today, European processors do not consider lines, with output capacities smaller than 8.000 Kg/Hr, commercially viable. Of course this is the European point of view, which may be totally different from other local circumstances. In that case it is advisable to closely look at the table above, when the move into French fry processing is considered.

### Technical execution of the French fry production line

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As stated in above-mentioned chapter, French fries can be produced in many different qualities; this requires considerable adaptation of the process machinery. Where a simple standard French fry can be produced on a minimum of independent process machines, production of the higher priced, premium quality fast-food French fry requires more sophisticated and a larger number of additional machines. This means that production lines that need to produce higher qualities of French fries will require higher investment figures.

Therefore it is evident that one needs to investigate the market on which producer wishes to distribute his product and whether this market is ready and willing to pay for the higher prices that premium quality products require.

Indicatively, one can say that where the simple French fry production line integrates actions like: washing, peeling, cutting, blanching, frying and packing; the premium quality French fry additionally requires improved processes/machinery in the area of: cutting, grading, additional blanching and/or cooling, pre-drying, specially improved frying, packing, etc.

### Commercial offers

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Although manufacturing costs and commercial offers of equipment suppliers may vary somewhat in relation to date of offer, technical execution, technological qualities, finished product quality and other less important variables, global investments figures will not differ much when equipment of similar technical and technological qualities are compared. At least not in a way that will seriously affect the feasibility study of the project in question.

What makes commercial offers different is mainly caused by development criteria on which the individual project consultant and/or equipment manufacturer bases her project offer. Where the project consultant tends to adjust his criteria to suit the "taste" of his principal best, the equipment manufacturer will adjust his criteria to suit Supplier's equipment program rather than looking at key requirements of the customer in question.

Furthermore the professional, independent project-developer/consultant has acquired a much stronger negotiation position due to his yearlong experience and position in this market.

Therefore it is advisable to contract an independent and professional project manager, who is committed to customer's cause only. He provides yearlong expertise, manufacturers' background information and professional negotiation capacities, resulting in a well founded project-base, supplied at best possible investment costs. In case the project is realized, the professional project consultant will easily gain back the initial extra investments, which his involvement requires.

### About the author:

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Richard W. Crawford is founder of Nupeca Netherlands of Tilburg, Netherlands, and acts as Independent Project Developer/Manager and Processing Consultant in service of International Food Processing Industries.

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