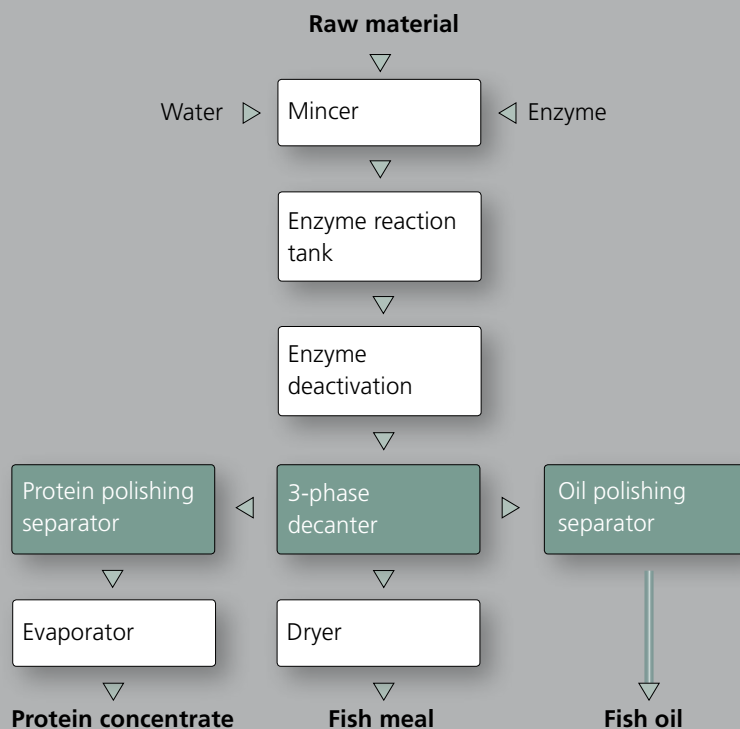


## Liquids to Value



## Fish Meal and Fish Oil Recovery – Fish Protein Hydrolyzate

In the protein hydrolyzate process the raw material is at first carefully minced. In the next step the mince is conditioned to give optimal results in the following enzymatic reaction tank. The enzymatic reaction can take place in a continuous reactor or in a batch system. The enzymatic process breaks the long-chain protein molecules down into smaller components. This also changes the properties of the proteins, insoluble

proteins become water-soluble. A second effect is their improvement of digestibility. Moreover, targeted selection of enzymes and process conditions allow properties such as taste and consistency to be precisely defined. To stop the enzymatic reaction the protein broth is heated which deactivates the enzymes. The protein broth is then fed to the 3-phase decanter which separates the suspension into an oil phase,

insoluble solids and the main phase of the water soluble proteins. Subsequently, the oil and the soluble water phases can each be polished by separators. On the one hand, this allows the solubility of the proteins to be increased by removing fine dispersed solids, whilst on the other hand it also separates even the finest fat droplets and thus obtains a protein hydrolyzate with less than one percent fat in dry mass.





## Decanters for separation

- Complete decanter range from 1 – 10 m<sup>3</sup>/h
- Customized solutions
- Robust design, particularly designed for hot operation processes
- Sophisticated wear protection for long operation lives
- Special bowl concepts for maximum throughput and clarifying efficiency
- Westfalia Separator® **varipond**® for always optimal separation results even with different feed conditions
- Made in Germany – Quality assurance system, CE conformity, DIN EN ISO 9000:2000 and 14001



## Separators for protein polishing

- Complete separator range from 1 – 10 m<sup>3</sup>/h
- Customized solutions
- Very large clarifying area for an optimum polishing of the protein-containing phase and thus very pure protein hydrolyzate
- Robust design for maximum reliability
- Hydrohermetic feed for gentle product treatment
- Sanitary and CIP-capable design
- Made in Germany – Quality assurance system, CE conformity, DIN EN ISO 9000:2000 and 14001



## Separators for oil polishing

- Complete polisher range from 0.5 – 30 m<sup>3</sup>/h
- Customized solutions
- Optimized disc stack for top fish oil quality
- Minimum number of parts and seals for minimum wear
- Very service-friendly flat belt drives
- Assembly-friendly design for fast service
- Low vibration machine installation for an easy integration into the process
- Made in Germany – Quality assurance system, CE conformity, DIN EN ISO 9000:2000 and 14001



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