

Fish Feed Technology

PhD. student

Dr.A.Y.Al-Dubakel

3- Feed Categories 5

Soybean meal is produced in two major protein levels by different processes. Soybean meal must be heated (toasted) sufficiently to destroy, the trypsin inhibitor. Forty-four percent soybean meal is usually mechanically extracted to produce a meal of 44 percent crude protein; crude fat, 4.7 percent; and crude fiber, 6.0 percent. Forty-eight percent soybean meal is dehulled and solvent extracted to yield meal with a crude protein I level of 48 percent; crude fat, 0.9 percent; and Soybean Meals .crude fiber, 2.8 percent

Cottonseed meal is produced in three protein levels. Cottonseed meals are classified as low gossypol if they contain less than 0.04 percent free gossypol. Forty-one percent cottonseed meal has a crude protein. level of 41 percent; crude fat, 2 percent; and crude fiber, 12 percent. Forty-eight percent cottonseed meal has a crude protein level of 48 percent; crude fat, 1 percent; and crude fiber, 8 percent. Although all three cottonseed meals are solvent extracted, the lower protein meals may contain some .hulls

Blood meal is produced from clean fresh animal blood, exclusive of all extraneous material such as hair, stomach contents, etc. Blood meal may be dried by several processes, but most often by spray drying. Spray dried blood meal has approximately a crude protein level of 85 percent; crude fat, 0.5-3 percent; crude fibre, 2.5 percent; ash, 6 .percent; and lysine, 9-11 percent, with an availability of 80-90 percent

Fish meal

White fish meal

processed white fish
POLLOCK, HOKI,
HAKE, BLUE
WHITING, COD

protein content above
68%-70%.

nutritional value high

high freshness

high absorption and utilization

ash in it is relative high

Red fish meal

anchovy, jack mackerel, sardines
small trash fish and shrimp

The crude protein above 65%,

good lysine balance

White fish meal

Varieties/Index	Protein	Fat	Moisture	Ash	Histamine
American White Fishmeal (Alaska Pollock)	62-65%	≤10%	≤10%	≤23%	≤100ppm
Russian White Fishmeal (Alaska Pollock)	60%-65%	≤10%	≤10%	≤24%	≤100ppm
New Zealand Vessel White Fishmeal (South Pacific Hoki)	65-68%	≤10%	≤10%	≤20%	≤50ppm
New Zealand Vessel Compounded Fishmeal (South Pacific Sea Area)	60%-65%	≤10%	≤10%	≤21%	≤50ppm
Argentina White Fishmeal (South Pacific Hake)	60%-62%	≤10%	≤10%	≤24%	≤500ppm

Red fish meal

Hista mine	Salt&S and	Ash	Moistu re	Fat	Protein	FISHMEAL SPECIFICATION S
≤500	≤4%	≤16%	7%~10 %	≤10%	≥68	SUPER PRIME
≤1000	≤4.5%	≤16%	≤10%	≤10%	≥67%	PRIME
-	≤5%	≤17%	≤10%	≤10%	≥66%	TAIWAN GRADE
-	≤5%	≤17%	≤10%	≤10%	≥66%	THAILAND GRADE
-	≤5%	-	≤10%	≤10%	≥65%	STANDARD GRADE
-	≤5%	-	≤10%	≤12%	≥64%	FAQ

ATLANTIC
WHITE FISH



ALASKAN SEAFOOD GROUP CO

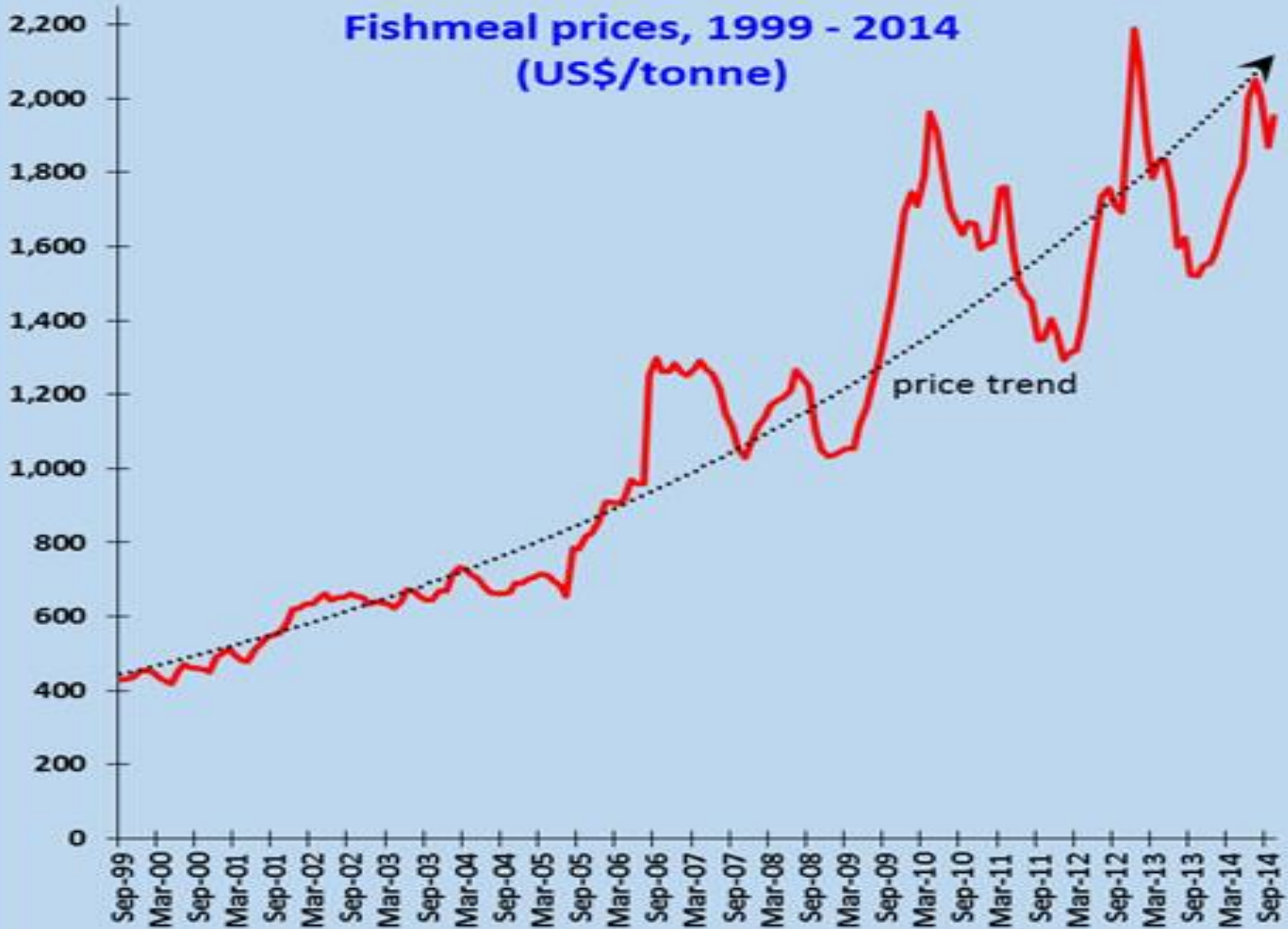
(USA) Ltd. P.O. Box 920008
Dutch Harbor, AK 99523-0008
Tel: (907)581-7308 Fax: (907)581-7229

NET WT. 50KG

STEAM DRIED FISHMEAL

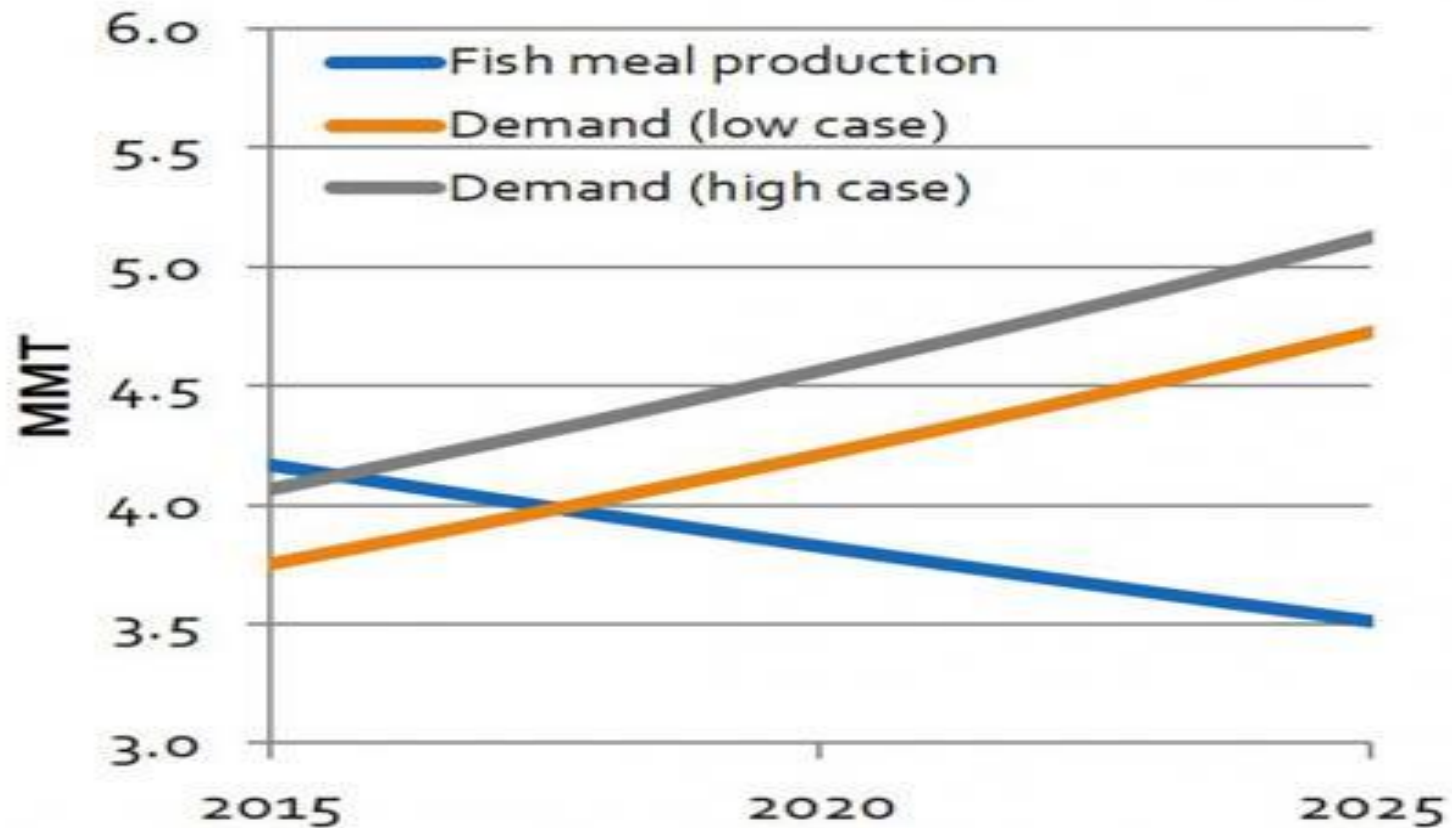
STEAM DRIED FISHMEAL

Fishmeal prices, 1999 - 2014 (US\$/tonne)



Source: IMF

Fish Meal Demand Exceeds Global Production Capacity Between 2016 (Grey Line, High Case) and 2019 (Orange Line, Low Case)



Feed Ingredients

Animal and fish feed ingredients are, for the most part, by-products of food processing obtained when high-value food for humans is extracted from a raw material. Once the high-value products have been removed, the remaining material is further processed, usually by drying, to produce a material that itself becomes an article of commerce. These ingredients are normally available throughout the year, with prices depending on the forces of supply and demand.

Not all feed ingredients are by-products; some are produced directly from raw materials. Examples of these include anchovy meal, menhaden meal, and ground whole grains. Practical and economic factors determine the fate of these products. Feed ingredients for fish diets are chosen for a number of reasons already mentioned, including the nutrient content, cost, availability, and physical properties. Proximate composition is the primary means of evaluating feed ingredients. In industry, proximate composition is expressed on an as-is basis, which generally means a moisture content of 7–9%.

Feed Nomenclature

Feed ingredient nomenclature and classification began in Germany in the early 19th century, when methods of determining chemical composition were developed. Feed ingredients were first classified on the basis of **nitrogen or digestible nutrient content**. Nomenclature was originally based on common names, but as the number of by-products from a single, raw material increased, the use of common names became confusing. A systematic investigation during the early development of today's nomenclature system revealed that more than **20%** of the common names in use for feeds were simply different names for the same product. Today's system of nomenclature is called the **International Feed Vocabulary (IFV)** and it is accepted worldwide . It has assigned a comprehensive name and number to each ingredient using descriptions from one or more of six categories. The categories are (1) origin, which includes the scientific and common names for specific plants and animals, poultry, fish, cereals, grass, minerals, chemical products, and drugs or other names for nonspecific materials; (2) part fed to animal as affected by processing; (3) process(es) and treatment(s) to which the feed ingredient was subjected; (4) stages of maturity and development; (5) cutting (for forage crops); and (6) grade. Using this system, herring meal is described as fish herring, *Clupea harengus*, meal, mechanically extracted, International Feed Number 5-02-000.