

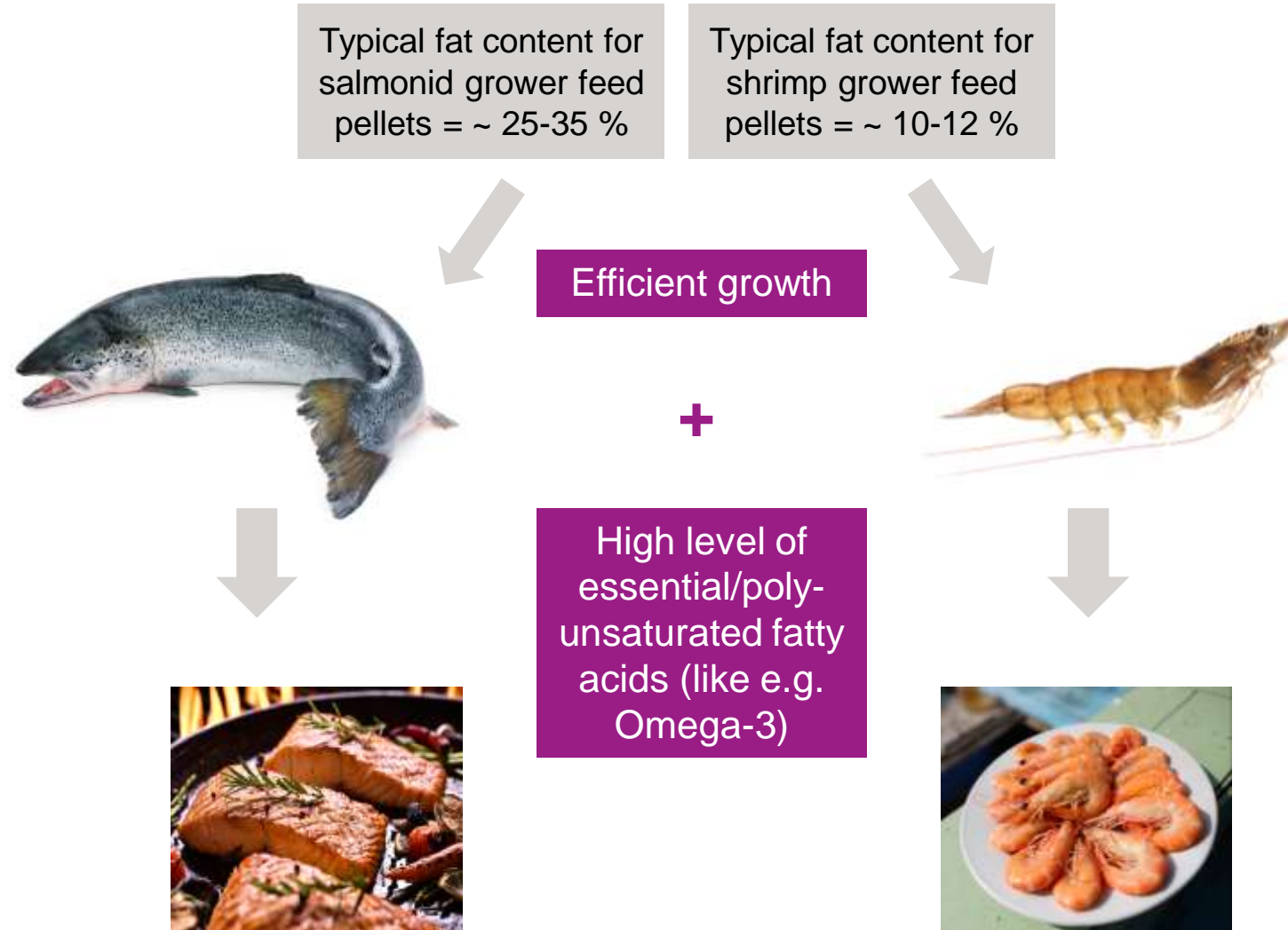
**Looking for sustainable
and efficient aquaculture
feeding?**

**Evonik silicas & silicates
are the solution.**

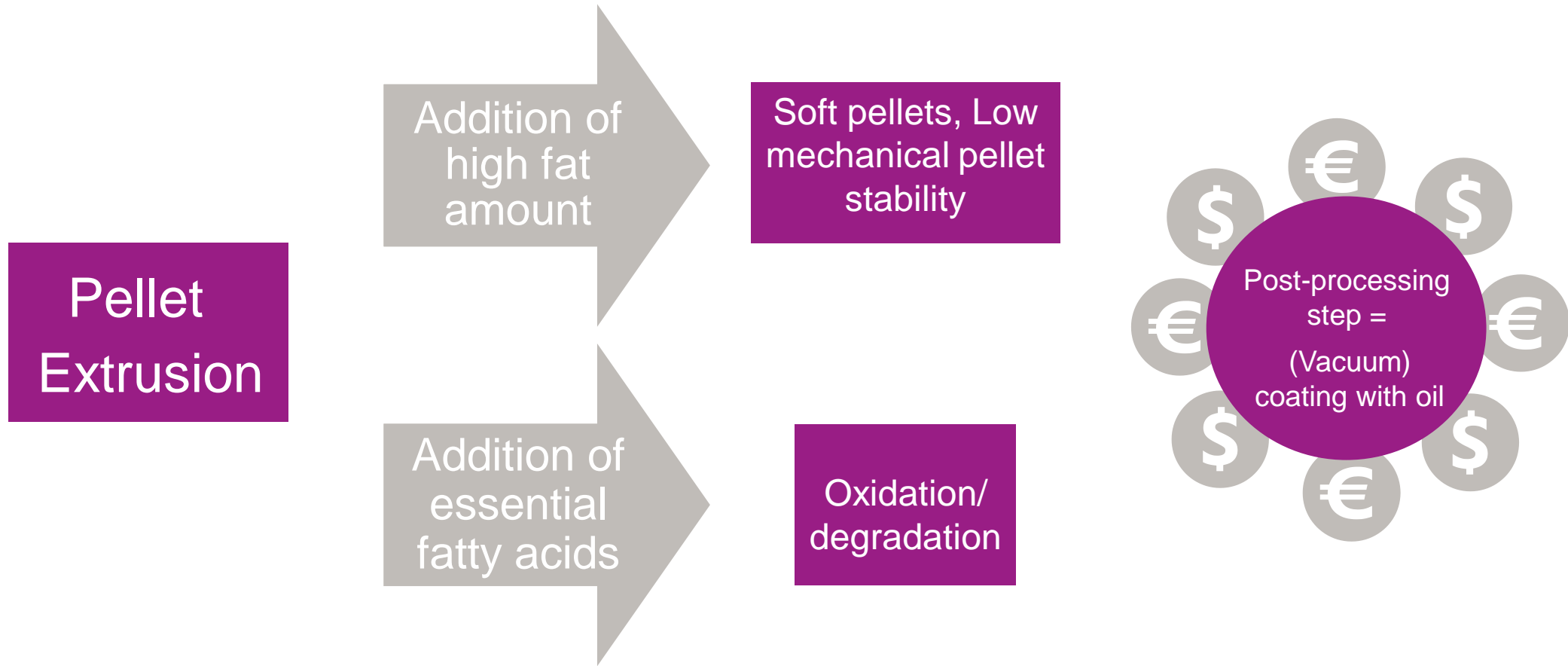
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May/22 – BL Silica



The importance of fat within salmonid & shrimp grower feed pellets



Challenges of a high-fat pellet manufacturing process



Evonik silicas & silicates enable a cost-efficient and sustainable extrusion of stable high-fat fish feed pellets

State-of-the-art Extrusion process **W/O SILICA**

Addition of only 1 % of Evonik silica/silicate will make the difference

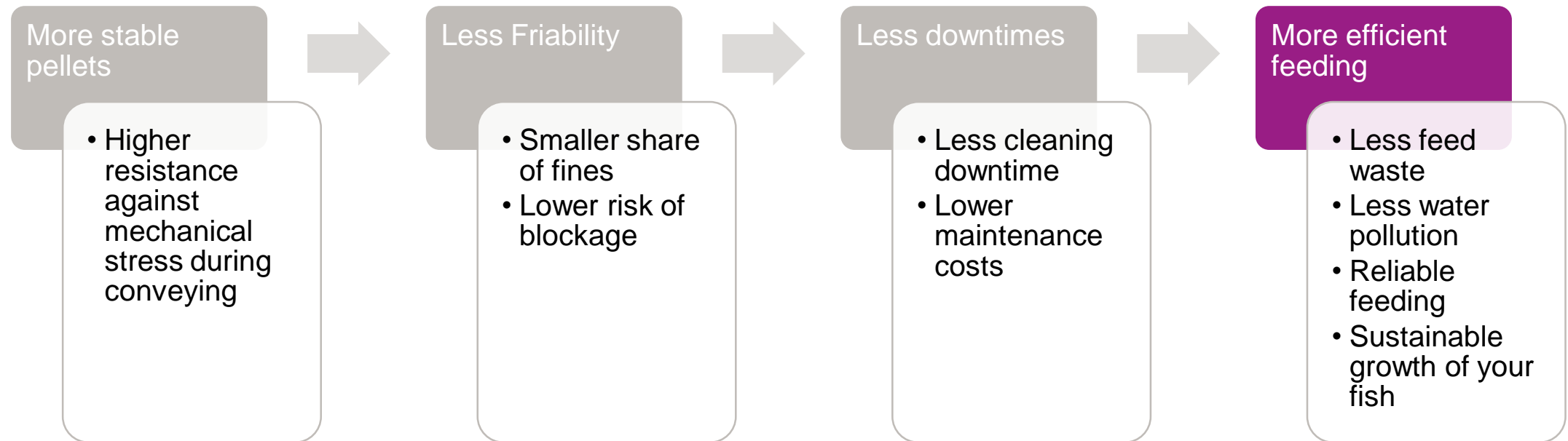


New approach: Extrusion process with **EVONIK SILICAS/SILICATES**

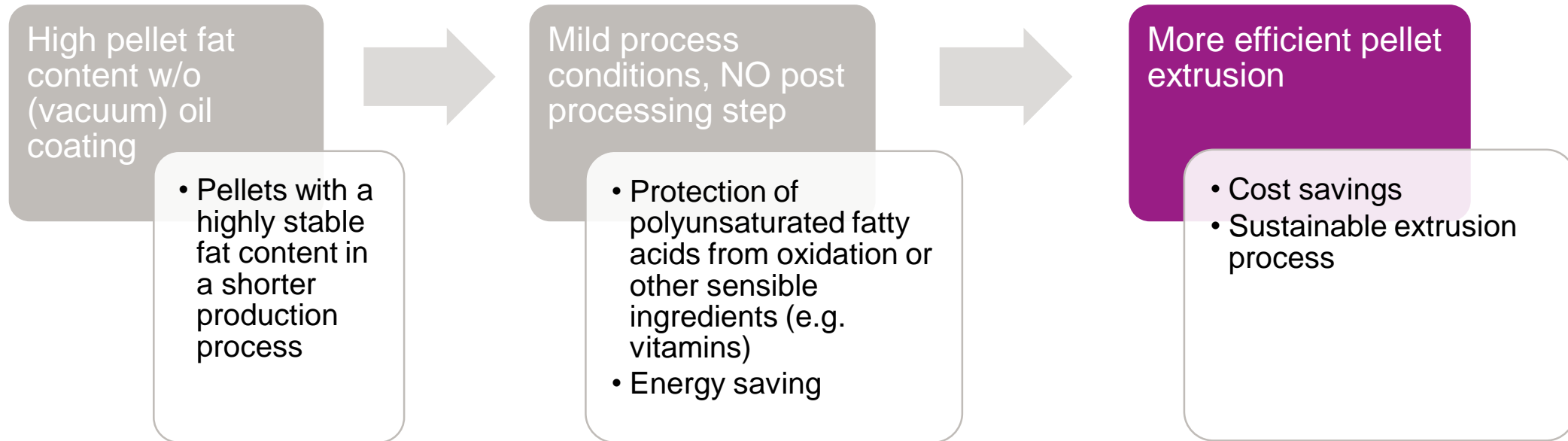
Can be skipped

Cost efficient & sustainable pellet extrusion and feeding: Up to ~ 37 % total fat content

Evonik silicas & silicates improve the mechanical stability of your pellets



With Evonik silicas & silicates the (vacuum) oil coating step can be skipped



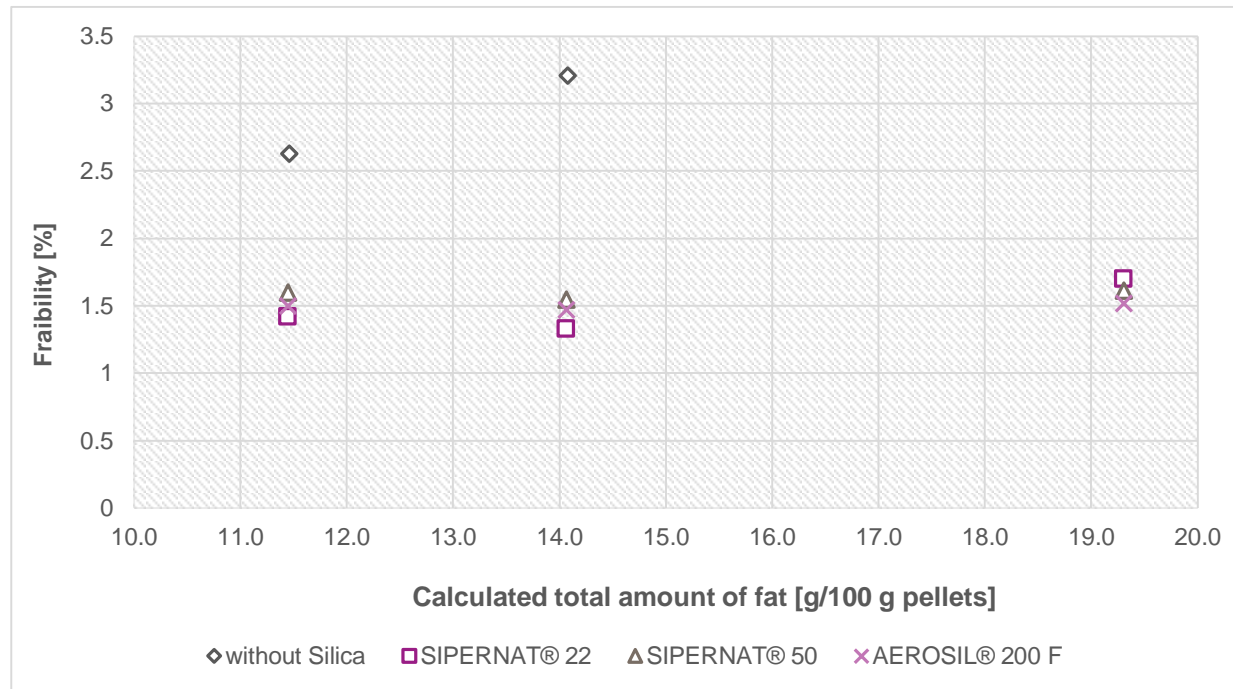
1 % of Evonik silicas/silicates enable a sustainable and cost-effective extrusion of stable high-fat fish feed pellets

Stable high-fat fish feed pellets without (vacuum) oil coating

- Successful development of Evonik silicas/silicates-fish feed formulations fulfilling nutritional values
- Only ~1 % of Evonik silicas/silicates significantly increased pellet stability
- High fat content up to ~ 37 %. No significant loss of fat during extrusion.
- Through ~1 % of Evonik silicas/silicates fat leakage is reduced by about 50 % compared to commercially-available (vacuum-)coated reference pellets
- Increased degree-of-cook during high-fat extrusion → Increased carbohydrate bioavailability

More efficient pellet extrusion and feeding

1 % of Evonik silica significantly decrease pellet friability also at medium pellet fat content



Silica improves mechanical pellet stability

- Without silica, higher fat content increases friability
- **1% of Silica reduces fines by half**
- Even at ~ 19 % fat content, friability does not increase if silica is added

High-quality Evonik silica & silicate products for your feed pellet extrusion process

- All recommended feed-grades are manufactured according to HACCP or FAMI-QS
- Recommended products to achieve a cost-efficient and sustainable extrusion process of high-fat fish feed pellets:

AEROSIL® 

AEROSIL® 200 F

ZEOFREE® 

ZEOFREE® 600¹

SIPERNAT® 

SIPERNAT® 50

SIPERNAT® 22

Highly recommended if your focus is high pellet stability/low friability

Highly recommended in case your focus is oil absorption/low leakage

¹ ZEOFREE® 600 LA for EMEA & Asia w/o China



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