



# PolyTransport<sup>TM</sup> Technology

Proprietary polysaccharide complexation for optimized trace mineral bioavailability.

# SQM protected minerals<sup>TM</sup>

## Feed less, get more<sup>TM</sup>

**Higher bioavailability** means you can feed less minerals (and waste less!), which helps you to streamline costs while increasing flexibility in your nutritional program.

**Our TraceTrax<sup>TM</sup> process** ensures high quality at every step—from ingredient sourcing to manufacturing to packaging to delivery.

**OPTIMIZED PERFORMANCE**

**LOWER INCLUSION RATES**

**PROVEN BIOAVAILABILITY**  
(PolyTransport<sup>TM</sup> technology)

**SUPERIOR QUALITY & ENGINEERING**  
(TraceTrax<sup>TM</sup>)

**SQM PROTECTED MINERALS<sup>TM</sup>**

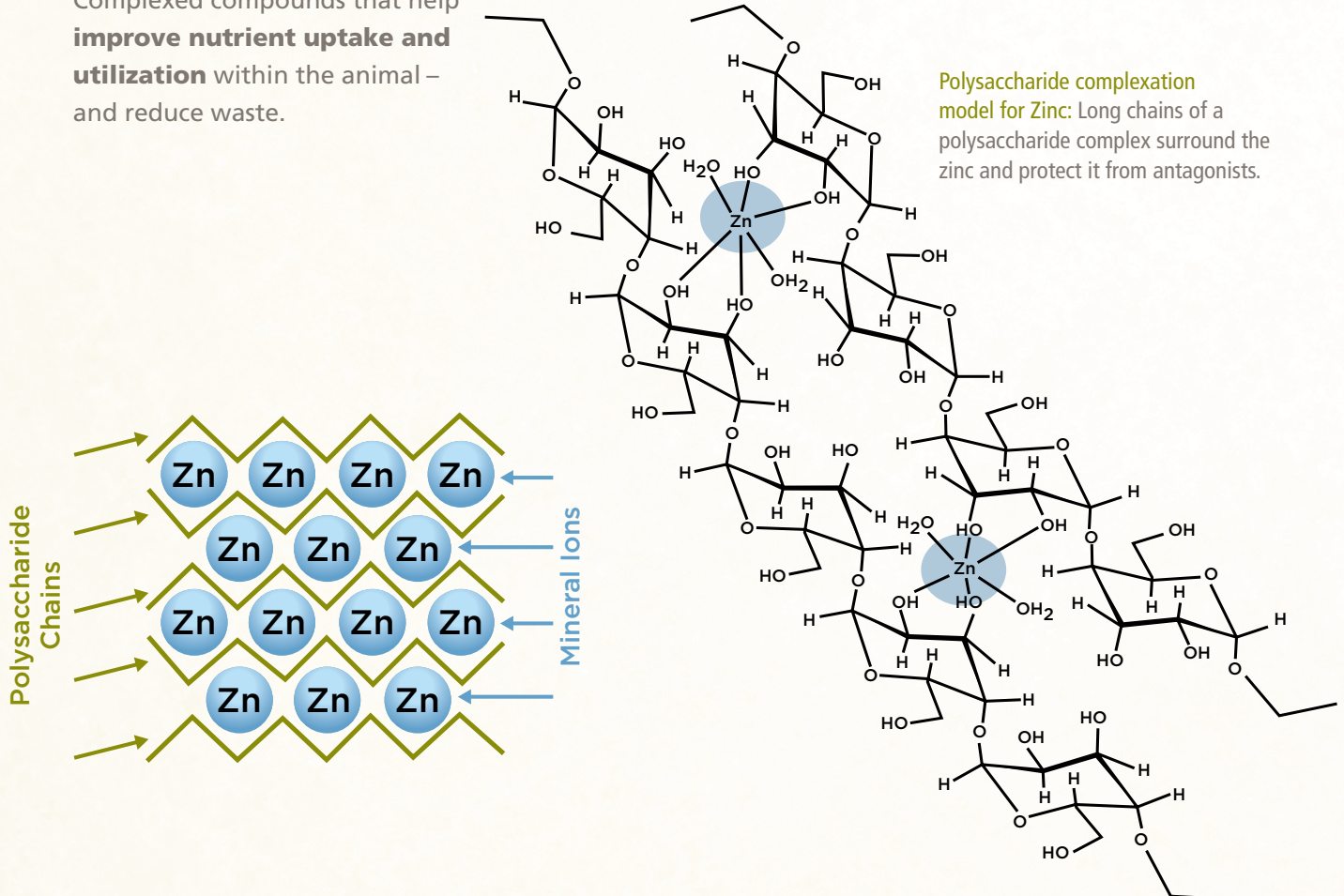
It all adds up to a strategy designed to **optimize bird performance** in every metric—from feed efficiency to egg quality, from immunity to reproduction, from environmental impact to bottom-line profitability.

**QualiTech's proprietary PolyTransport<sup>TM</sup> technology** provides improved bioavailability of trace minerals by ensuring they stay protected until they are ready for absorption.

**SQM protected minerals<sup>TM</sup>** serve as the very foundation for optimized bird performance, providing essential trace minerals via a unique technology that ensures superior bioavailability.

# SQM protected minerals with PolyTransport™ Technology: Delivering on the promise to Feed Less, Get More.™

- SQM protected minerals™ from QualiTech are powered by PolyTransport™ Technology, the **only complexed polysaccharide delivery system** for organic trace minerals in the industry. This unique technology improves mineral bioavailability relative to inorganics and, thus, helps support animal performance in a number of important ways.
- PolyTransport™ Technology is made possible through a **proprietary complexation process** in which polysaccharides are reacted with specific ionized nutrients. The result: Complexed compounds that help **improve nutrient uptake and utilization** within the animal – and reduce waste.
- SQM protected minerals™ are **shielded from antagonists** until they reach the optimal site of absorption within the animal. At that point, the polysaccharide complex is broken down by the digestive enzymes and the minerals are released. The polysaccharide compounds can also be used as an **energy source** by the animal.
- SQM's PolyTransport™ Technology is compatible with the **natural physiology** of the animals being fed – providing effective mineral supplementation and utilization for **optimized performance**.



# PolyTransport™ Technology: Improved bioavailability for optimized results.

The structural model for PolyTransport™ technology is a key differentiator for SQM protected minerals™. Unlike chelation, PolyTransport™ Technology is based on **polysaccharide complexation** – and that’s what truly sets it apart from other delivery systems for organic trace minerals.

Through this unique technology, polysaccharide chains collapse onto a **protective matrix** – effectively shielding minerals from antagonists.

When the polysaccharide complex reaches the point of absorption, this **matrix is broken down** by intestinal enzymes – releasing the minerals.

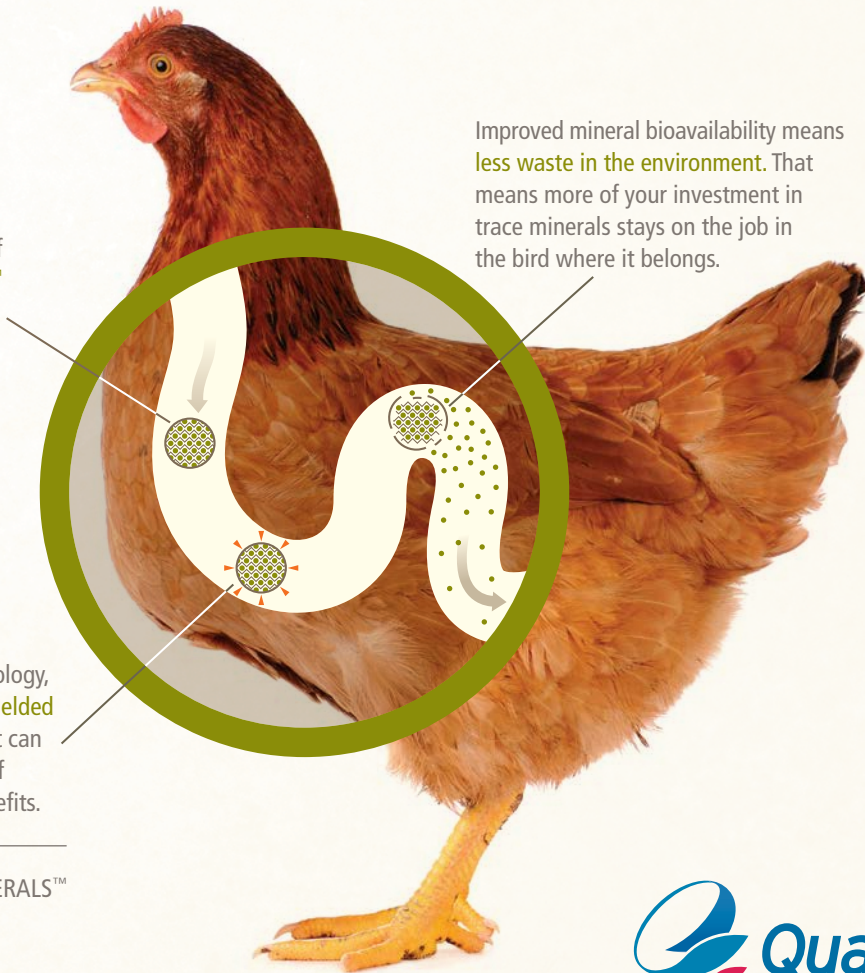
The minerals are absorbed to the bloodstream and transferred to **physiologically relevant action sites**, while the polysaccharide (carbohydrate) complex can be used by the animal for energy.




## HERE’S HOW SQM’S™ POLYTRANSPORT™ TECHNOLOGY WORKS:

Created from a custom blend of polysaccharides, PolyTransport™ technology forms a protective escort around SQM™ minerals. This escort shields the minerals from digestive damage until they can be absorbed and used by the bird.

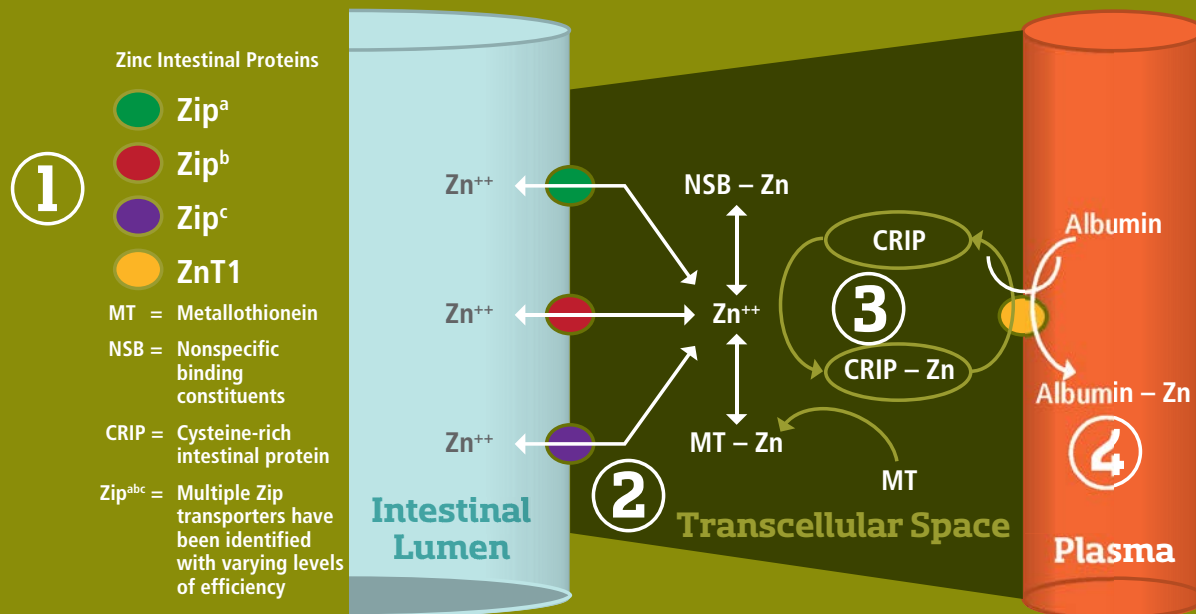
Thanks to PolyTransport™ technology, SQM protected minerals™ are shielded from damaging antagonists that can prevent or hamper absorption of minerals and diminish their benefits.

Improved mineral bioavailability means **less waste in the environment**. That means more of your investment in trace minerals stays on the job in the bird where it belongs.



-  SQM PROTECTED MINERALS™
-  RELEASED MINERAL
-  ANTAGONISTS

# Theoretical model for transcellular zinc absorption



**1** The zinc intestinal protein (ZIP 4) pulls the zinc ion across the intestinal lumen to the transcellular space of intestinal epithelial cells.

**2** Inside the transcellular space, one of two things can occur: either a nonspecific binding constituent takes hold of the zinc ion; or the metallothionein attaches to it and keeps the zinc ion in the transcellular space.

**3** When there is a demand for it, the zinc from the metallothionein interacts with the cysteine-rich intestinal protein (CRIP), facilitating its transfer into the plasma through the zinc transport protein (ZnT1).

**4** In the plasma, the zinc ion attaches to albumin for delivery to peripheral tissues.

The majority of dietary zinc is absorbed through the active transport system. If there is not a demand for zinc, the mineral is shed or sloughed out of the body.

This model illustrates the critical importance of mineral bioavailability. PolyTransport™ technology ensures that SQM™ minerals are protected from antagonists until they reach the site of absorption. At that point, the protective polysaccharide complex breaks down and the minerals are readily available to the animal, thus helping optimize overall health and performance.

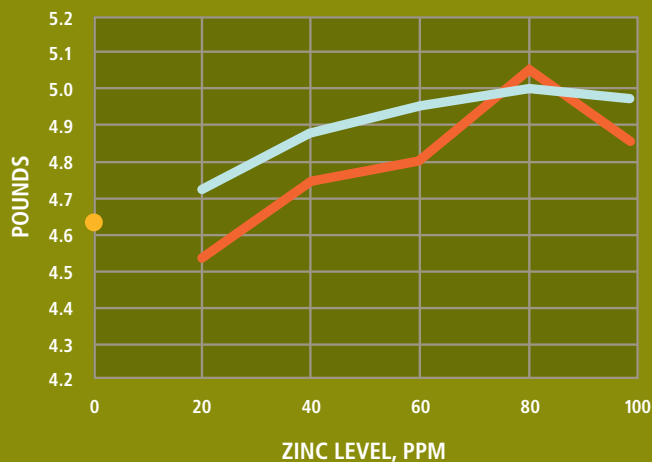
# The proof is in the performance.

A study by Sims and Garrett evaluated inorganic zinc vs. SQM™ zinc at different levels in the diet of broiler chickens. These graphs show the influence of dietary zinc level and source on broiler final weight, broiler feed efficiency and cost/unit of gain.

Influence of dietary zinc level and source on broiler final weight.

CONTROL ●  
SQM™ —  
INORGANIC —

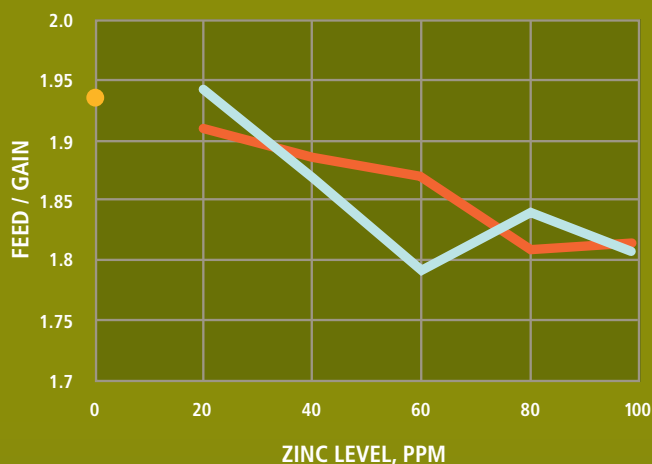
Sims and Garrett, 2010



Influence of dietary zinc level and source on broiler feed efficiency.

CONTROL ●  
SQM™ —  
INORGANIC —

Sims and Garrett, 2010



Influence of dietary zinc level and source on cost / unit of gain.

CONTROL ■  
SQM™ ■  
INORGANIC ■

abcdef MEANS WITH UNLIKE SUPERSSCRIPTS DIFFER P<0.05

Sims and Garrett, 2010

