

TECHNICAL BULLETIN

IRON AMINO ACID CHELATE

ORAL PIGLET IRON DOSER

WHY IS THERE A NEED FOR IRON SUPPLEMENTATION FOR PIGLETS

FACTS

MODERN genetics/fast growing piglets are born practically deficient of iron

NEWBORN PIGLETS have less than 50mg iron as reserve (placental barrier limitation), with the iron reserve exhausted within the first 3 days of life

IN THE FIRST 10 DAYS OF LIFE , piglets can gain over 3 times their birthweight (>1.3kg to 4kg)

IRON CONTENT OF SOW MILK IS DICTATED/FIXED BY EVOLUTION & GENETICS -

no amount of iron supplementation can increase sow milk iron content

THE IRON CONTENT of sow colostrum (<2ppm) and sow milk (>1ppm) are insufficient to support blood iron requirement of fast growing piglet

PIGLETS ARE BASICALLY ANEMIC ON THE FIRST 8 DAYS OF LIFE

THUS THE NEED TO SUPPLEMENT IRON TO PIGLETS

(Ashmead, 1993; Chiba, 2004; Hanl 2014)

TRADITIONAL AND PRESENT IRON SUPPLEMENTATION

Iron dextran injection (100mg-200mg) at birth/within few days of birth and repeated 10-12 days after

RECENT STUDIES ON BLOOD IRON PROFILE OF IRON DEXTRAN INJECTED PIGLETS REVEAL

PIGLET BLOOD VALUES* IRON DEXTRAN INJECTED

	7 DAY old**	14 DAY day old	Normal Values
RBC	3.30	4.005	$4 - 7 \times 10^{12}$ g/l
hemoglobin, gm/l	72.73	87.93	adequate >80gm/l, anemia <75gm/l
hematocrit, %	22.86	28.55	25-35%
Iron content, mg/l	186.77	246.62	220 - 250 mg/l

**Values at 7 day old considered anemic

*Clemente, C., Mangalindan J., 2016

Data shows that iron dextran injected piglets are still **anemic at 7 days** but become **normal at 14 days**

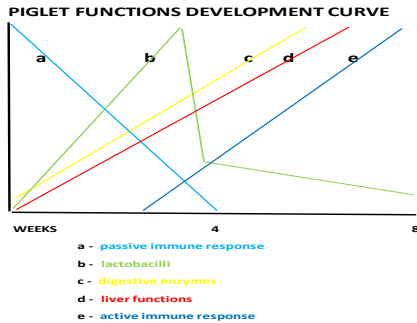
- INDICATES THAT THE **INJECTED IRON DEXTRAN IS NOT IMMEDIATELY AVAILABLE TO THE PIGLET**, AT LEAST WITHIN 8 DAYS FROM INJECTION , **CREATING AN ANEMIC WINDOW UP TO 10 DAYS OF LIFE**

REASONS FOR THE PHENOMENON

Recent findings indicate that the blood transport form of iron (in hemoglobin) is a metal-amino acid complex – **an iron amino acid (glycine) chelate. Not iron dextran.**

Thus, following biologic process, iron dextran is not identified by the cells. It then is transported to the liver, where it is stored for later processing with the appropriate aminoacid (glycine) ligand.

But as the liver functions are not fully developed until the 14th day from birth, the liver is unable to convert the iron dextran into the appropriate iron amino acid chelate (iron glycine).



Liver digestive function start functioning between 7 to 10 days from birth.

Thus, evidently, it takes sometime (beyond 7 days old) before the iron in iron dextran can be processed by the liver, attached to the right ligand (glycine) and becomes bioavailable to the piglet

SCIENCE BASED SOLUTION

IRON-AMINO ACID CHELATE soluble powder
newborn piglet **IRON GLYCINE** oral doser

NON-INVASIVE, EASY TO ADMINISTER, NO STRESS,

HIGHLY BIOAVAILABLE iron blood transport form
Prevents Day 3-10 piglet anemia
COMPLETELY EASY TO ADMINISTER, ORAL BASED
NO PAINFUL INJECTIONS, NO STRESS AND NO
CHANCE OF INFECTION AND SCARRING OF INJECTION
SITES (as occurs in >6% of injected iron)

COMPLETELY PIGLET PURPOSEFUL CARRIERS

lactose as prebiotic – supports lactobacilli growth necessary for piglets to digest and utilize milk
whey globulins – supplies globulins as passive immunity

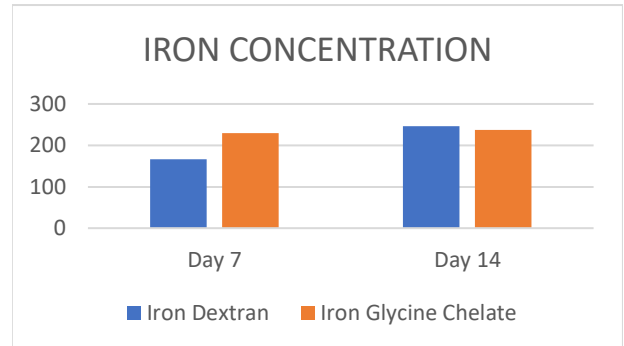
CAN REPEATED AS DESIRED no overdosing
COST EFFECTIVE – costs less/piglet compared to iron dextran injections

An Innovative Nutritional Product of:
AGRIaccess, Bothell WA USA
For: **BV1 Nutritional**, San Juan City Phil.

PACKAGING
100 dose pump bottle

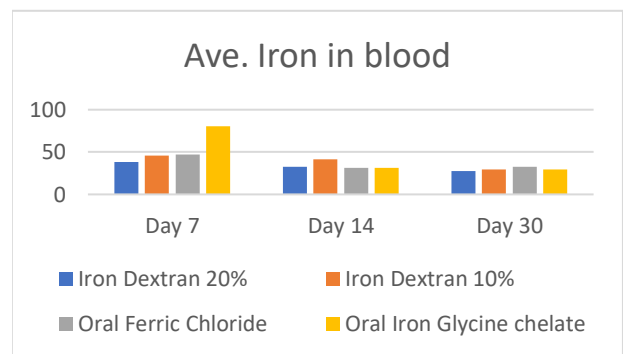
RECENT 2 FIELD STUDIES REVEAL THE FOLLOWING

STUDY 1 2016 16 LITTERS COMPARING ORAL IRON GLYCINE WITH INJECTABLE IRON DEXTRAN



At DAY 7, Iron glycine shows consistent adequate blood values in all parameters while Iron dextran showed all anemic values. At Day 14, all groups showed normal values

STUDY 2 2017 16 LITTERS COMPARING ORAL IRON GLYCINE(QS), INJECTABLE IRON DEXTRAN (ID), IRON DEXTRAN (JC) AND ORAL IRON (ND)*



Mangalindan J.F., Clemente C. 2016 and 2017

At Day 7, Iron glycine consistent showed almost 75% more blood iron than Iron Dextran ID, Iron dextran JC and Oral iron ND. At Day 14 and 30, all showed more or less similar values.

Iron Amino acid Chelate (iron glycine)

NO STRESS, NO FUSS, NO SCAR,
NO ANEMIA !