



Now even stronger contains the only two EU approved hygiene condition enhancers!

According to FAO reports, by 2025 about 84% of the world's oilseed production will be crushed. This leads to a huge protein rich resource, which is prone to bacterial contamination. In Canada, canola meal exports dropped from 160,000 tonnes monthly to only 60,000, a reduction of more than 60%, because of salmonella contamination. In Germany, in 2017, 4 million tonnes of rapeseed meal were produced, but at the same time reports of Salmonella contamination more than doubled.

HYGIENE IS KEY

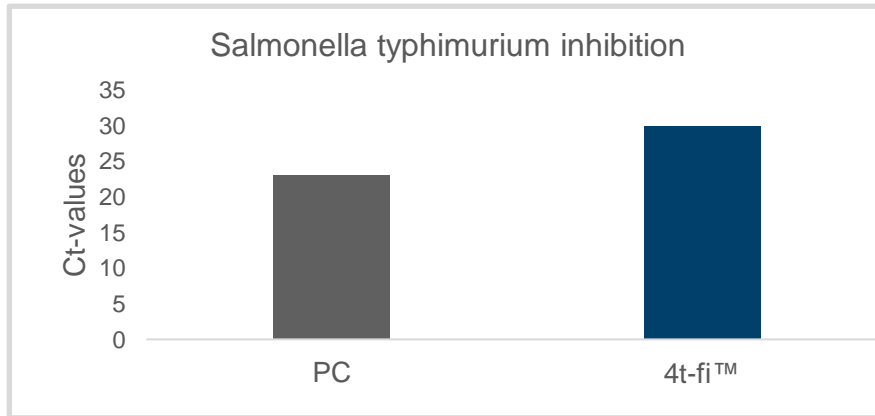
4t-fi is produced in our manufacturer's diformate reactor. Due to the special production process, it is more effective than straight acids and easier in handling as well as safer in application. Its advantages lie in decontamination due to:-

- ✓ Its volatility – part of the product will evaporate through the meal.
- ✓ Its composition and stability – a significant part of the product will remain intact and stable, even after pelleting, for an extended period.
- ✓ **4t-fi** is a liquid premixture of formic acid and sodium formate both are hygiene condition enhancers and preservatives. Both ingredients are approved as bacterial decontaminating agents and are used to improve feed hygiene resulting in a much better animal performance.

APPLICATION OIL-CAKES

Recent trials with plant-protein meals in Germany (rapeseed meal) have shown a significant impact against Salmonella typhimurium under challenged conditions. The addition of **4t-fi**, according to Real-Time PCR results, inhibits recontamination, as shown by 35% better Ct-values.





APPLICATION FEATHER MEAL

Trials with 4t-fi under tropical conditions in feather meal before packing for storage, at dosages ranging from 0.3 to 0.6%, resulted in a significant reduction of the Salmonella count.

| Feather meal | Salmonella (Million CFU g ⁻¹) | Reduction (%) |
|--------------|----------------------------------------------|------------------|
| Control | 4.00 | |
| 0.3% 4t-fi™ | 2.00 | 50 |
| 0.6% 4t-fi™ | 0.02 | 99.5 |



Recommended 4t-fi application rates:

- ✓ For bacterial inhibition and decontamination of protein meals.
- ✓ In low risk materials (coarse meals and plant-origin) a rate of 0.3-0.6%.
- ✓ In high risk material, like fish and feather meals the rate should be 0.5-0.6%
- ✓ A lower pH value (3.8) should be set in liquid feeding systems to combat Salmonella

