This must be the most frequent question asked. We all know the traditional values of 0.1% available phosphorus and 0.1% calcium usually assigned to most phytase products; these values are frequently used as reference when doing price comparisons between different phytases. They are well-established figures that have faithfully served the industry for many years, corresponding to the minimal dosage of phytase products as recommended by their manufacturers. But, it is a bit like the computer industry. Nobody would compare today two computers based only on their memory capacity of 1 MB. That’s an old trick from over 20 years ago.

The high cost of inorganic phosphate salts, such as monocalcium and dicalcium phosphates, has renewed efforts to replace even more dietary phosphorus with higher levels of phytase, as a means of controlling overall feed cost. For example, in a typical corn-soybean meal-based diet for broilers there is about 0.22% phytate phosphorus; thus, substantial room exists to remove some more phosphorus beyond the traditional 0.1% target. Indeed, earlier research work in Brazil (Vieira et al., 2009) and the U.S. (Waldroup et al., 2008) has shown that higher phytase levels can replace increased amounts of dietary phosphate. More recently the possibility was shown to take out all dicalcium phosphate from the broiler feed after 21 days of age (Maiorka et al., 2012). In fact, it has been known in the industry for quite some time that with a mega dose of phytase, phytate hydrolysis can be nearly complete. Nevertheless, in the past, such levels were clearly neither practical nor economical.

A feasible alternative to mega-doses has been the evolution of a phytase with a much higher efficiency for releasing phosphorus, without the need for over-supplementation. Such is the product marketed by DSM under the commercial name of RONOZYME® HiPhos.

From Figure 1, it is apparent that a traditional phytase (P5000) or an improved phytase (NP) can reduce the need for inorganic phosphorus additions by as much as two thirds, by releasing 0.1 and 0.12% phytate phosphorus, respectively. RONOZYME® HiPhos, can virtually eliminate the need for any phosphate addition, by releasing as much as 0.15% phytate phosphorus (and even more at a higher dose), which is at least 50% more than that released by a traditional phytase.

This increased phytate releasing efficiency translates to greater savings in feed cost. Thus, when in the case of a traditional phytase we saw savings of 4.62 €/MT, this increases to 5.72 €/MT when the newest phytase is used. This is a reduction in feed cost of 1.12 €/MT or almost 24% more. Feed savings will of course be greater when the price for phosphates increases during market spike periods (and less when prices drop).

In conclusion, we can safely say that practice is focusing more and more on modern high-efficiency phytases that can greatly reduce and in some cases eliminate the need for phosphates offering substantial feed cost savings!