

## **Diversification of feed protein sources for food security – domestic sources vs. soya meal**

**Wojciech Świącicki**

Plant protein is a strategic stock in meat production. Its significance drastically increased as a result of the BSE disease and prohibition for using meat flour in animal feeding. Today the main source is a post-extraction soy meal. Its global production increased from 88 mln t in 1995 to 179 mln t in 2013 with about 60 mld € value. Main exporters of the soya meal (77%) are Argentina, Brazil, USA and the main importer of the global soya seed production is China (over 66%). An increased world population as well as meat consumption *per capita* resulted in the increased soya meal demand. In some countries with a large population meat consumption *per capita* in 2000-2013 increased: for pork +40-100% and for poultry +40-180%. For meat producers the above-mentioned facts could be a sufficient reason to look for alternative sources of feed protein.

Grain legume advantages are well known – high protein content in seeds, N-fixation (no N-fertilizing – savings and environment protection), an advantageous influence on soil fertility and yield of successive crops (legumes should be grown every 4-5 years on a given field = 20-25% in a crop rotation).

Thanks to a decreased content of anti-nutritional compounds legume seeds can be directly used in animals feeding (trypsin inhibitors must be removed from soya seeds) and results in pigs and poultry feeding are comparable or even better.

In countries with a large animal production for maintaining the so called protein safety the  $\pm 50\%$  of domestic protein should be used. Decreased soya meal import by 1 mln t per year gives above 300 mln € of savings. In the meantime in many countries a share of own protein sources is about 25% but grain legumes in crop rotation 2-3%. Which scientific disciplines can help to solve above paradoxes – genetics/breeding, growing and animal feeding technologies or economy/business?