





We believe that with intelligent and efficient farming systems we contribute to sustainable agriculture, serving the world's growing population.

Farmer challenges

The costs for fertiliser have risen exponentially and **resources are limited**. Still, **healthy plant growth** is the basis for our customers' yield and profit, as well as for a safe food production. At the same time, the protection of the **environment** has become a key topic of today's agriculture. Due to the risk of contaminated **groundwater** and local over-fertilisation with organic fertilisers, recent **European regulations**, rules and policies have defined new standards and reduced the kinds of components allowed. Moreover, **society's acceptance** for fertiliser and crop care products has decreased.

We care with utmost precision and efficiency

Apply fertiliser more precisely, efficiently at the right time and only where the plant can reach it and only as much as needed. Synchronised with the seed application at high speeds, a cloud of fertiliser is placed under each maize corn to give **young plants the best start conditions for optimum root development, rapid growth and good plant health**. Every seed has an optimal fertiliser depot at its disposal, **no fertiliser is wasted** or washed out.

Kverneland PUDAMA system

The PUDAMA system **ensures the reduction of at least 25% of fertiliser** compared with the continuous application of fertiliser - whilst **maintaining 100% yield**. The PUDAMA system has been incorporated in the Optima TFprofi with SX high speed row, offering reliability by high expertise in precision drills and proven machinery - proven by independent results from Universities.

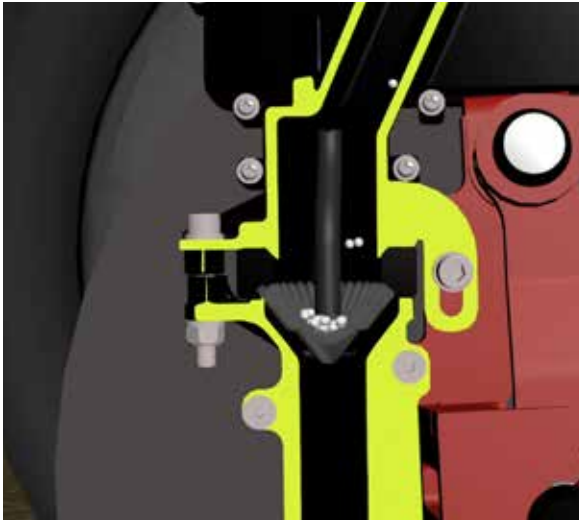
TECHNOLOGY

Fertilisation ensures the supply of nutrients to the crop, but over-fertilisation often has undesirable effects on the environment and the ecosystem of the land. Conventional band application places a continuous band of fertiliser also between the plants where the roots cannot reach it. This is the amount simply wasted and washed out.

With PUDAMA the amount and location of the fertiliser is precisely defined. The nutrients are only deposited where the roots of the grain can reach it and only as much as needed. Synchronised with the seed application at high speeds, a cloud of fertiliser is placed under each maize corn during maize seeding. Every seed has an optimal fertiliser depot at its disposal. The full amount of fertiliser is absorbed by the plants. In this way, loss and leaching is avoided and the production of fertiliser raw materials can also be reduced.

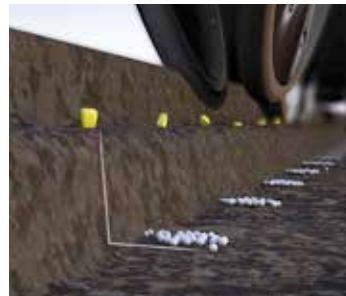
The PUDAMA Technology is based on a three-year study on the precise application of fertiliser whilst maize sowing. Kverneland Group Soest in close co-operation with researchers of the University of Cology show-proved that the precise application of fertiliser at sowing allows the reduction of at least 25% without any loss in yield (Bouten et al., 2020)!





PRECISE METERING AND SYNCHRONIZED DEPOSIT

- A defined fertiliser depot is produced and deposited analogous to the driving speed and seed distance in the furrow.
- The fertiliser is placed by an air stream 5cm below and sideways to the seed.
- The PUDAMA system has been incorporated in the Optima TFprofi with SX high speed row.





1. PUDAMA Application

2. Maize without Fertiliser Starter

3. Conventional Band Fertiliser

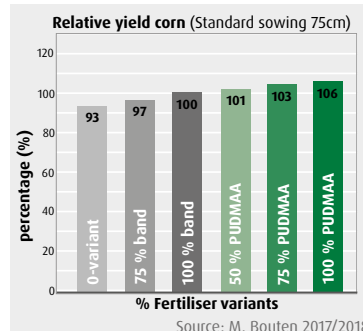
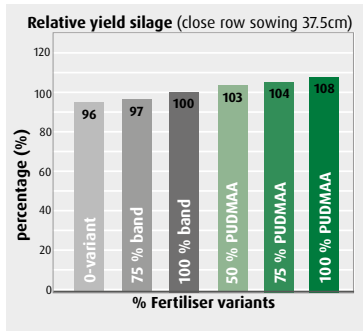
THE RESULTS

The PUDAMA system ensures the reduction of at least 25% of fertiliser compared with the continuous application of fertiliser - whilst maintaining 100% yield.

With technology such as the Kverneland Optima TFprofi SX PUDAMA precision drill, farmers can save a lot by reducing fertiliser, transport and work costs. For example, if a farmer with 300ha of maize uses 150kg/ha DAP 18-46 in the conventional way, he would save 37.5kg/ha of fertiliser with the PUDAMA system. This means a saving of 7,875€* for 300ha.

Root growth starts directly in the direction of the starter fertiliser. No energy is wasted. Strong plants, especially in the youth stadium, with strong roots ensure that the plant is more resistant even under extreme conditions such as prolonged drought.

(*Source: index mundi: Price DAP 700€/t Oct.2021)



Source: M. Bouten 2017/2018





WHEN FARMING MEANS BUSINESS

pl.kverneland.com/PUDAMA