Using the trials results and through consultation with science and agronomists, AMAZONE has developed, in conjunction with farmers and contractors, user-optimised concepts for differing farm structures. Individual farm managers – who have expert knowledge of their own farm – take from this work a personalised system that offers the best solution for their farm.

The guide for all arable farmers

At Agritechnica 2013, AMAZONEN-WERKE will introduce a plough, the Cayron, for the first time. And, simultaneously, AMAZONE have now included a strip cultivator, the XTill, into their product programme and so enter into a new era in the world of modern mulch sowing. The 3C arable farming concept here acts as a guide to the actual trends and systems – based also on their own trials results.

AMAZONE's trials work originated at Huntlosen, a site not far from the Hude factory near Oldenburg, where, since 1994, inversion soil tillage has been compared with mulch and direct sowing systems in a long-term crop rotation trial.

In addition to the many other trial sites, above all the 40 ha trials site in Leipzig became an important pillar in their comprehensive experimentation. Here, after a 12 year long-term crop rotation trial, mulch sowing with medium-deep loosening has produced the best yields. Here the intensive economic research that supports the trials in Leipzig, has shown that, for this location, mulch sowing offers the most benefit with regard to the cost structure.

The plough will always be of importance

Even though soil tillage without the plough is in principle possible everywhere, many farms go on using the plough, in total or just partly, for a multitude of reasons: the need to do without the benefits of conservation soil tillage gets easier the lower the cost pressure is, the more difficult the soils are to manage and, at the same time, the better the rainfall is distributed.

Above all the cultivation of fusarium susceptible crops grown in close crop rotations makes the use of the plough preferable. Quite apart from the relative yield security, the plough offers a simple remedy against weeds and volunteer grains and leaves a residue-free seed horizon without the risk of disease carryover for the following crop.

Especially in the high yielding regions of Western Europe, the close time period between maize or root crop harvesting and the following sowing of winter cereals is a challenge. Instead of accepting the risk of poor field emergence and difficult crop management with decreased yields, the use of the plough is an important option for many farms.

As the comprehensive introduction of non-inversion soil tillage usually requires a specific and in many cases more costly technical equipment, it is just easier for developing farms to use the cultivator and the plough, whereby the cultivators carry out the stubble turning prior to operation with the plough and can also be used for mulch sowing, depending on crop rotation and climatic conditions. Sowing is then often connected with a modern mounted sowing combination which is equipped with a PTO-driven 'active' soil tillage implement and disc coulters.

Strip Till on the move

For some years the Strip Till system has been on its way from the USA to Europe. In the development of site-matched mulch sowing systems for European conditions, strip tillage offers enormous potential: energy input is dramatically reduced as the soil is loosened only where the plants are and the fertiliser is applied efficiently to the area of maximum effect. So the Strip Till system combines the economic benefit of cost reduction with many environmental targets, such as, for example protection against erosion, soil saving, soil organic matter formation and CO_2 reduction.

However, in close crop rotations, which are based on a greater economic return, the widespread introduction of Strip Till systems still is a challenge. Any investment in new system chains makes sense only for larger farming units where a high proportion of row crops are in the rotation.