

# Field test „F16“

## 1. The frame

Since the start of our **EXTREME carbide line™** we have been trying to improve the applied materials and geometries, to be able to provide a longer lasting product. This includes practical tests in the field, because only a thoroughly tested product can be improved properly. Consequently, we are continuously testing our products under *extreme* conditions.

## 2. The conditions

### 2.1 The location

The farms on which this test was conducted are located about 25km north of Hannover, bordering the county of Celle.

Mostly loose, sandy grounds are prevailing. They are quite abrasive and so it is almost ideal for our long-term tests. Only the lack of stones is a slight disadvantage.

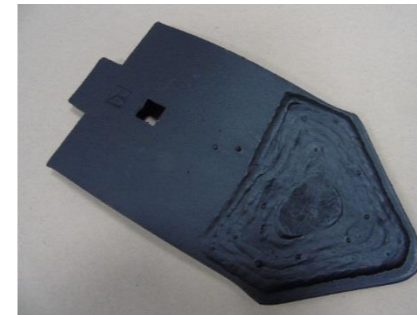
### 2.2 The machines used in the test

The cultivator has a working width of 4.70 m. It is shared among several farms, working on an area of about 700 hectares. The performance of the employed tractors varies between 200 hp and 240 hp, with average working depth being around 20cm. Average speed is around 12 kph.

## 3. The test procedure

The start of the test was in the summer of 2016 right before the stubble processing began. We then dismantled the relevant points in several phases to weigh and document the different states during their use. The following pictures should give you an overview about the abrasive wear. To have a comparison, we

also mounted a “standard” point with reinforcements welded underneath.



Both of our points in original condition – our “F16” here left. We will get to the wear of standard point later.



After about 255 hectares, the first abrasion was clearly visible. The edges of the front tip were already ground and there were slight extractions on top of the point. The loss of weight was about 420 g which was nearly 13% of the total mass.



At the end of the year, the points had worked an area of about 360 hectares. While the „F16“ showed almost no further abrasion, the „standard tip was worn out to the half way point of the reinforcement. The loss of weight of the “F16” was about 510 g which was nearly 16.3% of the total mass. The “standard” point had lost around 950 g. That is almost 43% of its total mass. We decided not to use this point any further, because it had some beginning cracks which would have caused it to break soon after.



In 2017, we continued the test with the „F16“ until it reached its current condition. It would have been able to achieve more ground coverage, but the possible loss of the point without notice would have made it impossible to evaluate the test completely. We decided to keep it in this state as an example to conduct an examination.

## 4. The result

The tested point has more than fulfilled our expectations.

After the evaluation of the test, we came to a total ground coverage of around 1186 hectares. *Of course, this is not a general value.* It depends on soil condition, working depth and speed. But it clearly shows in which direction the further development is going.

## 5. The further development

With different materials and maybe changes in the geometry, it should be possible to reach an even higher ground coverage. Therefore we are trying out new and innovative materials. These show an enormous durability and wear resistance without any further heat treatment. This is especially important, because the application of the carbide plates causes a loss of durability on boron steel, which is commonly used for the body of the point.