

## **Experience report Kelly disc chain harrow by Marcus Glitz, Grünlichtenberg Agricultural Association (Agrargenossenschaft Grünlichtenberg)**

Interview conducted on 16/08/2019

### **What are your basic requirements for tillage in your region and which of these do you consider problematic?**

Marcus Glitz: On our fields we work with the Mzuri-system for planting. Therefore, it is crucial for us to work the ground as shallow as possible. If we work the stubble too deeply, the strip-till machine will not work anymore, it will start to bulldoze. Additionally, we are asking ourselves how we will manage without glyphosate. Under this premise, we purchased a Kelly disc chain harrow in May 2019 with a 12 metre working width. From our point of view, this machine is still the only one in the world that cuts across the full width of the machine and has an optimal ground following ability. There is absolutely no alternative to this machine and is universal in its applications. Other machines have either a problem with ground following capabilities or shallow cutting across the full width. Especially after canola we do not want to use glyphosate anymore. Therefore, long-term, we aim to reduce the weed seed potential in the upper 5 centimetres of soil, with three to four field passes.

### **Did the Kelly disc chain harrow fully meet your expectations?**

Marcus Glitz: Yes, all of them.

### **In your opinion, what distinguishes the Kelly disc chain harrow from other tillage equipment used for shallow stubble management?**

Marcus Glitz: And which one would that be? If you ask me, there is no other machine apart from the Kelly disc chain harrow that is truly able to perform shallow tillage. I definitely don't know any other machine that actually does cut shallow and more importantly across the whole machine width. Momentarily, we are using another disc harrow from a south German manufacturer, with a 12 metre working width, which we will now get rid of. If we try to cut really shallow with this machine we do not get any lower than ten to twelve centimetres, and as soon as there is a slight ditch or undulation, it leaves the volunteers and weeds behind.

## **Were there things that the Kelly disc chain harrow has done beyond your expectations, as a side effect, such as its effectiveness with the control of the maize borer?**

Marcus Glitz: before we bought our own machine, we had done extensive tests with a neighbours nine metre version, therefore, we were already familiar with this effect. We have also received a confirmation of this maize borer effect from our crop consultancy company. Especially in locations like ours, where there is a lot of wild boar damage and stones, a mulcher can not achieve much. The wear and associated maintenance of a mulcher, compared to a Kelly disc chain harrow are incredible for a farm our size. I work over wild boar damage with the Kelly harrow two or three times and destroy everything from the stubble to the stalk, enough to be effective in regards to the maize borer.

Another advantage of the Kelly disc chain harrow is, it completely reams off the crown of the corn roots, this provides perfect conditions for our Mzuri-system when planting. The seeding units of the Mzuri are pivoting independently, this is so they can track in the strip-till. We have found through experience, if we do not use a Kelly harrow for corn stubble management, we have very poor seed placement. The seeding units get thrown off track by the root crowns and start to jump.

We found out by chance, that the Kelly disc chain harrow is very, very good at levelling our fields. Therefore, it fits perfectly into our post potato harvest management. Where possible, we want to avoid a deep mixing of the soil, therefore leave the screening potatoes near the surface. This works wonderfully with the Kelly harrow, two passes and everything is levelled.

## **So you do use the Kelly disc chain harrow for potatoes as well?**

Marcus Glitz: Yes, absolutely. In spring we want to preserve as much soil moisture as possible. We work the potato field twice with the Kelly harrow and afterwards plant the potatoes in one pass with an all-in-one-system. We live on the winter moisture (rain and snow) so to speak, we do not waste it. The potato harvest yield proves that this system works for our conditions, which was this year as well as last year about four tonnes per hectare.

## **How long have you been using the Kelly disc chain harrow as a fixed part of your cultivation system?**

Marcus Glitz: We have been using the Kelly harrow for two years on a regular basis. We bought our own 12 metre Kelly harrow in May 2019. Previously we worked intensively with a 9 metre machine, which we borrowed from a neighbouring farm.

## **How many hectares do you expect to cover in one year and what disc setup do you currently use?**

Marcus Glitz: Because we are using it universally, the machine is very well utilized across all of our cropping systems. We cover between five and six thousand hectares per year. We use the normal CL1 disc. However, we will now exchange the front set from CL1 to CL2 discs, with this CL2 option we expect an even better cutting performance, especially in dry conditions. We are setting up our Kelly harrow as a multifunction machine. In the future we will probably only have two tillage machines. On the one hand the Mzuri-System and on the other the Kelly tillage system.