

New slurry injector for use in heavy stubble fields

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SAMSON AGRO is launching a new slurry injector, SD, which has been developed specifically for the optimal injection of slurry using disc harrow techniques. So it is not just a disc harrow for soil tillage, which is fitted with slurry equipment. The new injector will be on the market for the 2016 slurry season.

In the effort to protect the environment and to get the full use out of the nutrients in slurry, slurry injection has been shown to be an excellent solution for when: 1) the weather is not suitable for using trailing hoses, 2) slurry application takes place close to naturally sensitive areas, or 3) an application with trailing hoses close to built-up areas would cause problems with odour. SAMSON AGRO has developed injectors for injection both into grass and into cereal stubble. Injection of slurry into stubble with much plant material on the surface, such as from maize or rape, challenges the construction and technique of the injector. SAMSON AGRO has therefore in partnership with Aarhus University been working to optimize the construction and functionality of a slurry injector for this type of work.

So far, SAMSON AGRO has built 10 SD disc harrow injectors that have been sold on special conditions in Denmark, Germany and other foreign markets that have an interest in this type of injector.

The new disc harrow injector, SD, from SAMSON AGRO has the following distinguishing features:

- Easily injects slurry into maize and oilseed rape stubble
- Leaves the surface even and ready for sowing
- Stays clean and dry during slurry application
- Places the slurry in slits, resulting in less evaporation of nutrients
- Very precise dosing – no blockage of hoses and nozzles
- Has overload protection to protect the injector in stony ground, increasing its lifespan

Not like the others

Because the SAMSON AGRO SD slurry injector has been developed with a view to optimizing slurry injection particularly in fields with a lot of plant materials or residues and is not simply a modified disc harrow for soil tillage, it sets itself apart from other similar machines. The slurry nozzles, for example, are placed behind the front row of discs. The slurry is therefore injected directly into the slits created by the front row of discs. The rear row of discs immediately covers the slits – and the slurry – with soil. This minimizes evaporation, the nutrients remain in the soil for the benefit of the following crop. Also, odours are significantly reduced as is the total cost of slurry application since the application and ploughing in of the slurry are done in one operation rather than two.

The SD injector also has the advantage that the slurry is placed directly into the soil and is not flung around with the other material. The injector can therefore work with relatively dry material and stays clean and dry. This minimizes problems with moisture penetrating into bearings and linkages, increasing the lifespan of the machinery.

Because the slurry nozzles are cut slantwise, an even and controlled flow of liquid is achieved right to the bottom of the slit. This also means that the nozzles are not blocked as nozzle openings are facing away from the direction of travel and in the same direction as the flow of material. This prevents soil and plant material from entering the nozzle. The slurry hoses are also mounted inside the nozzles, giving free flow through the hose and nozzle – with no blockages.

Active and effective hydraulic system

The hydraulics of the SD injector enables rapid changes between working position and transport position, resulting in increased capacity. The hydraulic cylinders are fitted with a hydraulic damper which ensures smooth and balanced movements. There is also an integrated overload function that allows individual implement sections to swerve when passing larger obstacles or driving over large stones, for example. If one of the sections swerves, it will automatically return to the original position after passing the obstacle. This protects the injector and extends its lifespan.

Suitable for fields with a lot of plant residues

The notched 510 mm discs work aggressively into the soil even under difficult conditions. The shape of the disc allows it to work through large amounts of plant material during slurry injection. Because slurry injection and soil tillage are performed in the one operation, the number of drives across the field can be reduced and therefore also the total cost of field operations.

All the discs are individually mounted on the frame with flexible rubber elements. This means that the equipment stays level with the soil surface, since each disc can follow the contours, and that wheel tracks and other depressions can also be treated. An uneven soil surface will be uniformly treated. The flexibility of the rubber elements not only gives a good adjustment to soil contours, but also reduces stress loads when driving on stony ground where discs are able to swerve at contact with large stones. The individual mounting of the discs also means that large amounts of plant material can pass through the machine.

Large-diameter packer roller

The SD disc harrow injector from SAMSON AGRO is fitted with a packer roller with a 630 mm diameter. The large diameter of the roller gives effective compaction and ensures maximum carrying capacity. A large roller with a good carrying capacity gives a precise control of the working depth, which can be adjusted to between 3 and 12 cm.

The large diameter also means that less power is needed to pull the implement.

For slurry injection practices, the packer roller is often the preferred choice since the risk of building up a 'bow wave' of soil is minimised.

Several new types of packer rollers are being designed for the new SD injector, giving a range of available options in the future.

Large capacity

As with other tools from SAMSON AGRO, the SD disc harrow injector has a vertical distributor with rotating chopper. The output is 7000 litres per minute depending on pressure and flow, which ensures a high driving speed of up to 18 km/hr.

The rapid unfolding and folding function also helps to increase the SD injector's capacity.

Source: SAMSON AGRO A/S