

FOBRO Rotor STRIP TILL

Tips and tricks from 25 years of experience

Rotor STRIP TILL - especially for corn in meadows - is a unique Swiss specialty.

It occupies one niche in the border area of agriculture, where corn ideally complements the feed rations of meadows. In these locations it proves the ecological advantages of the rotor STRIP TILL especially because of the high rainfall. The benefits of soil structure support also pay off in subsequent crops.

Economic advantages

- Low labor requirements by combining several operations
- Safe early development of corn
- Equal yield to plow
- Good soil structure simplifies ordering the aftercultures

Ecological benefits

- Best protection against soil erosion
- Reduces nutrient runoff into waters
- Long greening = good nitrate protection
- Land cover stimulates earthworms and other soil life
- Fewer passes protect the ground
- Soil structure is improved
- Good carrying capacity at harvest reduces soil compaction

Requirements

- Rotor STRIP TILL needs a good soil structure
- Heavy and light soils are equally suitable
- Does not treat wet floors



Soil conditions and technology

Attention: Avoid working in wet soils (loss of yield)!

The prerequisite for a successful rotor STRIP TILL usage is a good soil structure! Avoid driving in wet conditions (slurry and dung), reduce tire pressure, use large-volume tires and allow wet floors to dry.

Variant 1: Wait until the soil has dried off
Variant 2: Through a shallow cultivation work (10 cm)

To promote drying, use "Rotor STRIP TILL light".

Cultivator lubricates less than a plow.

Set the strip cutter in the targeted manner

Excavation depth of 20-25 cm achieves safe yields in practice. Cultivators avoid the formation of a smear layer through the router and improve root penetration. Set flat with good soil structure. Tilling depth = 5-8 cm; Rotor speed about 250 rpm at 3 km / h. Power requirement from 120 hp. More horsepower allows faster work.

Sowing technology is an important element

Heavy disc coulters are required. A cutting disc in front of double disc coulters prevents grains from lying in tufts of grass and dying due to contact with glyphosate.

Proven herbicide strategies

Combine sowing and spraying

Soil herbicide on strips (mandatory) and glyphosate between the strips should be applied conditionally (two spray tanks). Applying both as a tank mix works well.

Pre-emergence glyphosate with a little water

Spraying before sowing: Small amounts of water <100 l / ha and water softening (about 5 kg ammonium sulfate/100 l water), significantly improves the effect. It affects fresh stubbles that have not been scarred, otherwise wait for about 10cm of grassy height.

Specific treatment of weeds

Aftercare of weeds: 15gr of Harmony and 0,5l of Exell (Attention: note variety compatibility). The addition of Mg foliar fertilizer (eg. Epsa Combitop 5kg /100 l water) reduces stress for corn (high in wet and cold conditions).

Fertilization

Subsoil fertilization with N with 30-50 kg of N /ha (urea, Mg ammonium saltpeter), Mg supports corn in cool weather. The addition of P (mixed fertilizer) is not necessary in well-fed soils. P-fertilization can bring about improvements. In case of uncertainty a comparison clarify things: one fertilizer box with P fertilizer, one without P fertilizer

Add top-dressing to the row; beneficial with 2 doses per row and do not spread over a wide area. Do not use urea (due to evaporation).

Mist and manure well possible

Well-fermented manure can be spread (about 30t / ha) before sowing. Spend badly-fermented manure after sowing (blockage, N-blockade) or let it ferment even better. Manure can be applied before or after sowing or on standing-out corn (6-leaf) (avoid soil compaction).

Pests

Snails, earth snakes and wireworms

Grass between the corn rows acts as an obstacle to feeding. Problems are rare and occur at early spraying term when it is necessary (there is no obstacle). In case of high wireworm concentration, insecticide-stained seed may be used.

Mice are occasionally a problem

In case of strong mice infestation, caution is advised, as mice are only decimated at approx. 15 cm in depth, full-surface tillage (cultivator, plow)..

Stubble processing

For the incorporation of e.g. corn stubble after harvesting, a special tool has been developed for the chip milling.

It successfully shreds up to 95% of all stubble and works reliably into the soil. European corn borers will not remain overwintered and its number will be greatly reduced.

The advantage of this is that the soil is processed only in the planted strips and the stable soil structure is maintained between the rows.

Herbicide-free strategies

Caution: When switching to herbicide-free and biological procedures, yield loss could be expected in the first few years. In the long term, however, costs can be reduced and higher profitability can be achieved.



The use of herbicide-free processes requires a combination of plant-based and technical solutions. The basis for this is healthy, fertile soil with the highest possible humus content.

In addition, it should be tried to have the area as overgrown as possible with living plants throughout the year. This can be implemented through the use of catch crops and undercrops. By creating a "green bridge", soil life can be supplied with root exudates throughout the year. This provides the plants with otherwise unattainable nutrients from the soil. By having as many varieties of plants as possible in the field, a diverse soil flora can be created, which creates a healthy and balanced soil crumb.

Any intervention in the soil thus affects the soil life. Unwanted weeds are, among other things, the consequence of too intensive soil use. Every weed in the field has a special task and is the result of the prevailing soil conditions.

So-called pointer plants always try to bring the soil balance back in order. Some plants like to grow in places with soil compaction, excess nutrients or water-logging. These are absolutely to be avoided.

Location and soil conditions

The ideal corn floor is deep, well-structured, rich in nutrients and regularly supplied with water. Corn grows best with neutral to slightly acidic soil reaction - pHs from 5.5 to 7.5.

Sowing and variety selection

The important factor in the choice of a variety is its rapid early development and an early row closure, in order to achieve a fast shading and thus suppress weeds. It is important that the variety is adapted to the location.

In locations with good water supply, narrow or double row sowing can increase yields.

The optimal sowing time of corn is from mid-April to late May. The soil temperature should be at least 8 ° C. The storage depth is optimally 4-6cm. Late sowed corn (mid-May) quickly grows away from the weeds. On the other hand, early-sowed corn occurs as a result of temperatures below 10 ° C, when corn overgrowth frequently occurs, and the adapted weeds continue to grow during this time, leading to higher inter-species competition. Increasing the seed rate, on the other hand, has no significant impact on weed suppression and yield.



The cultivator avoids the formation of a smear layer during the milling and improves the rooting.



To avoid compact and soil conserving, tires are important!

Catch crops mix

A key role in the establishing herbicide-free process with the Strip till plays the cultivation of mixtures of the catch crops.

The corn cultivation can be very well combined with winter intercrops, which can be harvested in the spring and used as feed for biogas plants and animals. Also, catch crop mixtures can be used particularly well as green manure and mulch padding for weed suppression and erosion control.

Green rye and clover grass mixtures have proven particularly useful.

Possible catch crops with good results before corn:

- TerraLife MaizePro (DSV)
- TerraLife N-Fix (DSV)
- Landsberger mixture

Green rye mixtures (for example with celandine clover)

- Camena Special Mix 16039/1 Wintergreen (Wickroggen mixture)
- Bio-Max (DSV)
- HumusPlus (DSV)
- Winter pea EFB33 and green rye

Subsoil seeding

Through the use of subsoil seeds, weeds can be deliberately suppressed. The subsistence should be adapted to the location and corn. In corn cultivation, it is recommended to sow under-grass ryegrass from 15 to 20 kg / ha at the 8-10 leaf stage of the corn. The sowing preferably comprises a slurry tanker, a corn harvester with spreading device or a fertilizer spreader.

Seeding is best done after the second hacking (Fibl, 2008). After harvesting, the sub-sowing can be done as green manure or used as a catch crop by reseeded. A stubble fall is not necessary. Only the remains of the stubble up to 6-8cm high are conducive.

- Possible subspecies in corn:

- clover mixtures
- DSV mixture "M2"
- viterra® SALT SEED (seed union)
- Special mixture 16039 Green Carbon Fix (Manufacturer: Camena)

When using subsoil seeding, crops should be dispensed with the use of harrow, as this can stimulate an undesirable germination of weeds.

Mechanical weed control

variant 1 ("weed cure"):

Before the strip-seed sowing, whole-surface, flat processing of the soil with a tiller or cultivator with goosefoot shares (peel in 3-5cm working depth). Catch crop floors can also be incorporated as a foundation or plant stoppage after forage harvesting. They form at the same time a weed-suppressing mulch layer. Repeat this several times if necessary to prevent re-growth or emergence of unwanted weeds.

Variant 2 (partial peeling):

After the strip mill flat shelling of the unprocessed strip with hacking machine or router. In this case, a working depth of 3 to 5cm should not be exceeded in order not to affect the benefits of strip mill seeding.

Variant 3 (partial mulching / mowing):

In layers with good water supply of the soil, it is possible to let the unprocessed intermediate strip overgrown. For this purpose, a strip mill offers usage of green rye or low-growing clover grass.

Through a partial mulcher or mower, the growth of the intercrossed catch crops can be comprised in order to give the crop a head start and to curb inter-species competition. Corn is very susceptible to competition until the 8-leaf stage. Therefore, until then, it should be treated by hacking.

For weed control in the series, a finger or torsion hoe can be used. With prior weed treatment, a star hoe can also be used to slightly pile up the crop on the last run.

Frequently asked questions

Why not direct sowing?

No-till sowing places the highest demands on weed control and soil structure. Because of the frequent driving over meadows (4-6 cuts) the direct sowing could not prevail. With optimal soil structure, direct sowing in meadows is possible without loss of yields.

Why is not used more in arable farming?

In arable farming, corn can be grown simply with full-surface mulch or by direct sowing, which is cheaper.

Striped seed light, what is it?

Instead of preparing a seedbed conventionally after the usage of a plow or a cultivator, sowing is also possible by means of a strip-seed sowing combination. The coarse floes between the rows provide good protection against erosion and reduce nutrient swum. Depending on the situation, it is a sensible compromise.



Rapeseed cultivation in Switzerland with duo-drill.

Does strip milling not need a lot of water?

No, on the contrary. In comparison with the plowing, the striped seeding reduces the water evaporation. More important than the soil treatment is the water requirement of the preculture. A meadow needs about 500 l of water per kg of dry matter. If the stock continues to grow, then there will be a lack of water.

Does strip milling require a lot of snail grain?

No, green interstitial growth acts as a distraction from feeding. Trickles are the only prematurely sprayed pre-cultures that cause the snails to eat only corn at the corn casserole.



Stubble cultivation with Oekosem

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