Radish Deeptill – The living "soil drill"

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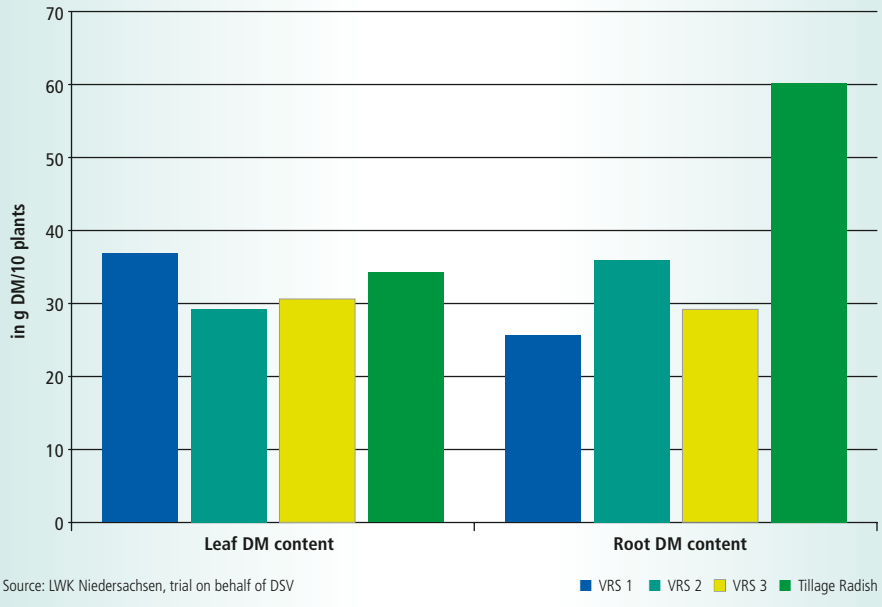
Radish Deeptill (Raphanus sativus), also known as "melioration radish" is a plant breeding innovation. The focus was on a strong rooting performance to combat soil compaction during the crucifera selection process.

The aim of the breeding was to select a strong, aggressively downwards growing root. It should have properties similar to those of lupin roots: downwards vertical soil penetration, if possible even through compacted areas, such as tillage pans. This breeding goal has been achieved to a large extent (Figure 1).
Today, Deeptill (DT) is also known to offer many other positive properties such as a later generative phase, lower winter hardness compared with common oil radish varieties and faster soil warming in spring. The considerably

Figure 1: Root of radish Deeptill perforates the tillage pan

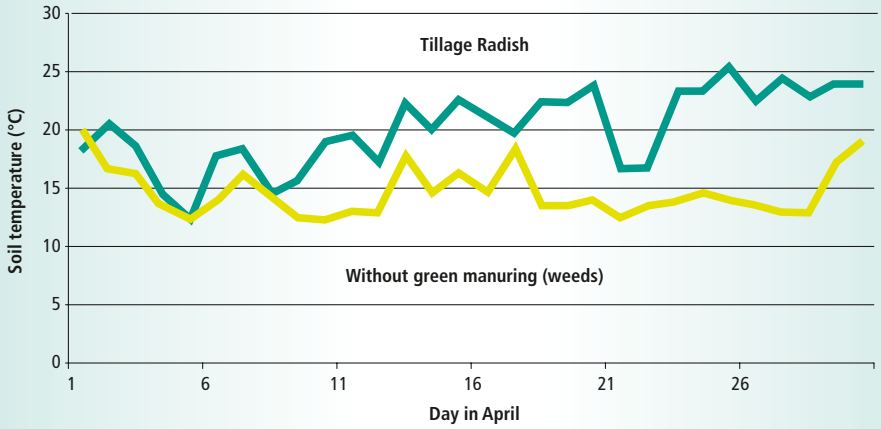
Figure 2: Radish Deeptill (left), oil radish "Reset" (centre), oil radish "Black Jack" (right).

Graph 1: Average dry matter yield (roots and foliage) of the sites Wehnen and Dasselbruch



Source: LWK Niedersachsen, trial on behalf of DSV

Graph 2: Soil warming in a depth of 5 cm with or without tillage radish, USDA, Beltsville 2006



Source: Beltsville 2006

later generative phase also makes it possible for the farmer to sow earlier (end of July / beginning of August). The radish Deeptill biomass formation was tested in comparison with three common oil radish varieties in 2010 by the Chamber of Agriculture Lower Saxony, on behalf of DSV, at the Wehnen and Dasselbruchon sites. The result is very impressive, with the root formation of the radish Deeptill being clearly superior to that of the oil radish varieties (Figure 2). Due to its late generative phase, the formation of aerial biomass is slightly below average. However, the intercrop programme "TerraLife", as its name suggests, places emphasis specifically on good rooting in the soil.

Warming the soil faster

A further point with regard to radish Deeptill is its ability to break up possible soil compaction and open the soil, allowing faster soil warming in spring. Experiments by the U.S. Department of Agriculture (USDA) (Graph 2), were able to demonstrate the advantage of a faster soil warming by radish Deeptill in spring. It allows the farmer for instance to sow maize earlier without deep working

Figure 3: Radish Deeptill freezes off well

the soil. Prerequisite for this is the relatively guaranteed freezing off of the radish (Fig. 3). Very shallow tilling or mulching in autumn can help to secure freezing off particularly on sites with a mild winter.

TerraLife DT

For the new intercrop season, DSV is offer-ing mixes including radish Deeptill. These are marked with the abbreviation "DT". These mixes are particularly well suited to limy sites, where lupins don't grow well or possibly not at all, and combine the advantages of the other mix components with those of the radish.

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