

TREATMENT & SILICON EXPERIMENT WITH WINTER CORN

1976/77

Since 1962 annual work concerning all sorts of problems has been carried out using the bio-dynamic spray preparations. Yet not all questions have been answered. For example we could simply not accept the statement that with corn only minimal yield increases have occurred with the use of the silicon preparation, whilst other plant varieties have produced increases of up to 30%. At first we supposed that it was connected with the greater leaf area since the greater increases occurred with clover, potatoes, cucumbers, beans and other plants, but carrot also with its very slender leaf produced a large increase of yield. Now the question arose; have we with corn taken into account sufficiently the vegetative stage of the plant. So far we had tried to find out how often it is advisable to spray the preparations or under which cosmic influence does the plant react positively to the spray preparations, and what seed quality and baking quality is produced by the different treatments.

Since the plant breeders ascribe a certain significance to the time of the second leaf in corn, we decided to take this vegetative stage as the point of departure for our trials. They were to be carried out with Rye and Wheat. In the rotations both plant types followed potatoes grown in the 1976 season. In the autumn of 1975 the area had been manured with 30 tons per hectare of F.Y.M.

For the test with Rye the variety Karsten was used which we had grown for 10 years. At sowing time preparation 500 was sprayed three times on all plots so that the control plot differs only in regard to the treatment with the silica preparation. The trial was made on schist type soil class 12-15 and a pH of 5.1.

In earlier trials it had been repeatedly shown that when hoeing had been carried out simultaneously with the use of the spray preparations the effect was increased. Therefore, both possibilities had to be examined.

First the hoeing trial was set out in which under the four known impulses -

Leaf days = A

Fruit days = W

Root days = E

Flower days = L

hoeing was to be carried out on each type of plot (which was triplicated). The sowing was done on a fruit day for all variations. With the development of the second leaf hoeing commenced for the first time and was followed in each successive triangulated constellation for a second and again for a third time each after nine days under the same influence. The soil was thus loosened to a depth of $2\frac{1}{2}$ - 3 cms.

The whole thing was repeated to balance out the variables using in addition the silica preparations.

Hoeing plus silica on Leaf days = AK

Fruit days = WK

Root days = EK

Flower days =LK

Weeded on fruit days (once in autumn, once in spring). Hoed three times plus silica on fruit days (in spring) = WK11

The whole trial has ten variations with rye, each in triplicate with a plot size of 15 sq. metres.

With the wheat we chose the variety Hessische Landweizen. We have multiplied this up from five ears of corn over six years and the yield has nearly equalled the wheat variety Jubliar to which it is superior in gluten. The trial is only carried out as a silica one and not as a separate hoeing comparison, so it has six variations of treatment each in triplicate.

Let us look first at the hoeing trial. The rye has germinated uniformly. At the second leaf stage hoeing commenced on the three A plots. After two days the W plots are hoed and successively E & L plots. After nine days it is again leaf day and the A plots are hoed again. The whole thing is repeated three times.

Already in autumn differences are visible. The A treatments have a stronger leaf, treatments W show more tillering. Treatments E have darker colour as if they have more nitrogen available, treatments L have light very tender leaf with rather poor plants. The plots get through the winter well. The warm period in March brings increasing growth which is great enough to cause concern. The following cold period with night frosts of - 15°C harms plots A and L most. They needed a long time before they recovered from the shock to their growth.

With the rye trial with the silica treatment we have a slightly different picture. The plots AK, WK and EK show similar symptoms as the merely hoed plots but are on the whole somewhat stronger. The plot LK differed strongly from plot L, already in the autumn and came through the winter better in each of the triplicated plots. The plot O was weeded once in the autumn on a fruit day and once in the spring on a fruit day but was not hoed. The plot WK11 remained behind the other plots in the spring at first. They are only superior to plots L. Already soon after the hoeing the WK11 plots overtook the O plots. But the real growth stimulus was given with the silica treatment yet there was no enhancement of tillering. The best tillering could be found on plots W and even more on plots WK, moreover with plots WK one found on balance a change in the ears of four layers.

The observations with wheat agree with those of rye and need not therefore be reported. In contrast to the other years the rye yields are higher than the wheat yields.

This experience was general in corn growing in 1977. Variations of yield within the single plots of the same treatment were minimal and show on average the following values:

Plot Treatment	Rye Hoeing Trial (dz/ha)	Plot Treatment	Rye Hoeing & Silica (dz/ha)	Wheat (Silica + hoeing) (dz/ha)
A	32.2	AK	33.8	30.8
W	38.3	WK	47.8	46.7
E	32.7	EK	39.5	34.5
L	26.8	LK	35.4	31.8
		0	30.25	27.15
		WK11	40.1	37.8

It is obvious from the table that the fruit day plots have a greater yield than any other plots and than has hitherto been experienced with corn. The autumn treatment and silica spray in autumn appears as especially recommendable to the grower. It is known that the differences in practice are not so marked as in trials, yet the timing of the treatment which concerned us were beginning with the development of the second leaf will be of significance in practice.

In the treatment experiments as so often observed before the problem of the flower days becomes strongly apparent which we have ever again ascertained with summer sprays. Obviously the silica treatment in the autumn is not quite so problematic owing to the diminishing light forces.

In later work it will have to be clarified how the early sprays affect spring corn.

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Lebendige Erde

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