

Trial Report 2003	Nitrogen Efficiency of Different Fertilizers in Spring Barley	Organic and Inorganic N- Fertilizers, Yield, Spring Barley
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SUMMARY

The nitrogen efficiency does not only depend on the nutrient quantity, but also on the type of fertilizer. The example of spring barley shows that nitrogen carriers of organic origin achieve results that are comparable to calcium ammonium nitrate, however with changed yield components.

TRIAL QUESTION

Is the effect of organic fertilizers with regard to nitrogen efficiency comparable to calcium ammonium nitrate?

RESULTS

On a conventional plot, spring barley (Pasadena, 320 seeds/m²) was sown after oat (2002) and fertilized at the end of the tillering phase.

Table 1: Crop development and yield

PG	Fertilization May 9, 2003 (EC 29)	N- content %	Appli- cation rate kg N/ha	Crop density heads/m ² June 25, 03	Grain yield dt/ha July 23, 03	Straw yield dt/ha	Thou- sand seed weight g	Grain count/ head
1	without		0	490	45.1	40.1	51.8	17.8
2	CAN	27.0	60	641	50.1	46.5	52.5	14.9
3	vinasse	3.4	60	594	49.7	41.3	54.0	15.5
4	castor-oil meal	4.7	60	481	49.9	40.5	54.2	19.1
5	Agro-Biosol	4.2	60	508	52.5	40.1	54.0	19.1

Spring barley showed a differentiated reaction to the treatment. Whereas the crop density was hardly affected by castor-oil meal and Agro-Biosol, vinasse produced a crop density that was higher up to 100 heads. The highest value was obtained when treating with CAN. This resulted in the highest straw yield, but not in a considerably higher grain yield. It is obvious that spring barley did not receive sufficient nitrogen during the reduction phase, and consequently fewer grains/head were established. Spring barley showed a similar result after treatment with vinasse. In variants 4 and 5, nitrogen mineralized over a longer period of time so that yields were obtained that are comparable to CAN treatment with lower crop density, higher count per head and thousand seed weight.

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