

## EFFECT OF Zn AND B ON SEED YIELD, OIL CONTENT, AND MORPHOLOGICAL TRAITS OF SUNFLOWER

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Research objective was to assess the effect of microelements B and Zn on the morphological traits, yield, and quality of sunflower seed. A field experiment after the system of random blocks in four replications was conducted in 1986 and 1987. The experiment was established on limeless smonitza soil which had acid reaction (pH 5.10) and was rich in humus, poor in phosphorus, and medium provided with potassium, available B (35 ppm) and available Zn (2.8 ppm).

We used in the experiment the sunflower hybrid NS-H-33-RM and three variants of fertilization: (1) the control with N-84, P-90, K-60 kg/ha; (2) N-84, P-90, K-60, + B-10 kg/ha, and (3) N-84, P-90, K-60, + Zn-10 kg/ha. NPK fertilizers were applied during plowing and seedbed preparation, B and Zn were top-dressed at the beginning of the stage of budding.

The experimental years were different climatically. 1986 was favorable for sunflower growing and the seed yields obtained were relatively high; 1987 was unfavorable and the yields were considerably lower than the long-term average.

The application of B and Zn did not affect the dynamics of development of sunflower plants but it did bring increases in head diameter, plant height, and 1000-seed mass. It was found that B application reduced the number of empty seeds by 5% in relation to the control. The effect of Zn application on the number of empty seeds less pronounced.

Both microelements brought increases in seed yield (Table 1, Graph 1). The contribution of B was much higher than that of Zn - 12.4% and 6.9% yield increases, respectively, in relation to the control.

The microelements did not bring appreciable increases in oil content in seed (Table 2). However, the application of B and Zn did bring increases in the contents of these elements in sunflower seed - by 5.2 ppm and 4.2 ppm, respectively, in relation to the control.

TAB. 1 - Effect of B and Zn on sunflower seed yield

No.	VARIANT	Seed yield (kg/ha)			%
		1986	1987	Average	
1.	Control	4.060	1.937	2.985	100,0
2.	B	4.315	2.198	3.256	112,4
3.	Zn	4.231	1.955	3.093	106,9

TAB. 2 - Effect of B and Zn on oil content in sunflower seed

No.	VARIANT	% of oil			%
		1986	1987	Average	
1.	Control	49.24	47.20	48.22	100.00
2.	B	49.16	47.34	48.25	100.39
3.	Zn	49.62	47.27	48.44	100.06

GRAPH 1 - Effect of B and Zn on sunflower seed yield

