

## INFLUENCE OF DEFOLIATION METHODS AND STANDING DENSITY OF PLANTS ON THE ACCUMULATION OF DRY MASS OF SOYBEAN VARIETIES

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### Abstract:

This article presents the results of an experiment on the effect of seedling thickness and defoliation rates on the accumulation of dry mass of soybean varieties sown as a repeated crop.

**Keywords:** soybean, defoliation, dry matter , pod, root, stem, leaf, bean pod , Oyjamol variety, Tomaris MAN variety, bean formation.

In Uzbekistan, the country has relatively recently begun to cultivate soybean, which belongs to a number of industrial crops with very valuable nutritional and fodder value. More than 300 types of food and technical products can be obtained from soybeans. In addition, soy contains various medicines and minerals that are important in our daily lives [1,2].

In recent years, soybean cultivation areas have been expanded to meet the needs of the population for food, especially protein-rich foods, and to increase oil production. Also, in order to effectively use irrigated lands, the areas under soybeans were increased as a secondary crop on the areas vacated for wheat.

Due to the richness of various organic substances in soybean grain among repeated crops, this allows it to be used for several purposes. In addition, it has a positive effect on the agrophysical properties of the soil.

Due to the lack of knowledge of the newly created soybean varieties, it is necessary to conduct a large research work to study the agricultural technology of obtaining high and high-quality yields from them, in particular, such factors as the norms and timing of defoliation require. Consequently, From this , the influence of seedling thickness and defoliation rate on the accumulation of dry mass of soybean varieties sown by repeated crops in the field of the State Unitary Enterprise Information and Consulting Center "Extension Center" at the Andijan Institute of Agriculture and Agrotechnologies was determined. we did a study to study the effect. Soybean varieties "Oyjamol " and " Tomaris MAN 60" were studied in the experiment As you know, the dry matter of plants consists mainly of cell walls, which include three main components: cellulose, hemicellulose and lignin. The first two of them are polysaccharides, and the third component is usually referred to as compounds of the aromatic series.

The accumulation of dry mass of soybean varieties was studied at the end of the season. When studying the dry mass of one plant, a regularity was observed associated with the growth and development of the plant and the feeding area.

**Table 1**

**Accumulation of dry mass of soybean varieties depending on plant density and application of defoliation (in grams per plant)**

Var	seeding rate thous . units/ ha	Defoliant rate l/ha	Terms of application of defoliants	Root	culm	leaves	pods	grain	Only for 1 plant
Variety Oyjamol									
1.	400-500	Control	When the beans ripen, 50–55%.	9.76	14.08	2.00 _	11.3	7.39	44.53
2.		UzDEF 3 l/ha		9.48	13.67	1.94	10.97	7.17	43.23
3.		UzDEF 4 l/ha		9.20	13.27	1.89	10.65	6.97	41.97
4.		UzDEF 5 l/ha		8.93	12.89	1.83	10.34	6.76	40.75
5.	600-700	Control		9.72	13.88	1.96	11.23	7.35	44.14
6.		UzDEF 3 l/ha		9.44	13.47	1.90	10.90	7.13	42.84
7.		UzDEF 4 l/ha		9.16	13.07	1.85	10.58	6.93	41.59
8.		UzDEF 5 l/ha		8.89	12.69	1.79	10.27	6.72	40.36
9.	400-500	Control	When the beans ripen, 50–55%.	7.22	13.22	1.68	9.17	6.41	37.70
10.		UzDEF 3 l/ha		7.00	12.85	1.64	8.90	6.23	36.62
11.		UzDEF 4 l/ha		6.80	12.47	1.59	8.64	6.05	35.55
12.		UzDEF 5 l/ha		6.61	12.11	1.55	8.39	5.88	34.54
13.	600-700	Control		8.47	13.55	1.82	10.2	6.88	40.92
14.		UzDEF 3 l/ha		8.22	13.16	1.77	9.90	6.68	39.73
15.		UzDEF 4 l/ha		7.98	12.77	1.72	9.61	6.49	38.57
16.		UzDEF 5 l/ha		7.75	12.40	1.67	9.33	6.30	37.45
Variety Tomaris MAN 60									
17.	400-500	Control	When the beans ripen, 50–55%.	9.38	13.54	1.87	10.6	6.92	42.31
18.		UzDEF 3 l/ha		9.11	13.15	1.82	10.29	6.72	41.08
19.		UzDEF 4 l/ha		8.84	12.76	1.76	9.99	6.52	39.88
20.		UzDEF 5 l/ha		8.58	12.39	1.71	9.70	6.33	38.72
21.	600-700	Control		9.34	13.34	1.83	10.53	6.88	41.92
22.		UzDEF 3 l/ha		9.07	12.95	1.78	10.22	6.68	40.70
23.		UzDEF 4 l/ha		8.8	12.56	1.72	9.92	6.48	39.48
24.		UzDEF 5 l/ha		8.54	12.19	1.67	9.63	6.29	38.32
25.	400-500	Control	When the beans ripen, 50–55%.	7.51	11.08	1.52	8.07	5.80	33.98
26.		UzDEF 3 l/ha		7.28	10.77	1.48	7.83	5.64	33.00
27.		UzDEF 4 l/ha		7.08	10.46	1.43	7.61	5.47	32.05
28.		UzDEF 5 l/ha		6.88	10.15	1.40	7.39	5.32	31.14
29.	600-700	Control		8.76	11.41	1.66	9.1	6.27	37.2
30.		UzDEF 3 l/ha		8.50	11.08	1.61	8.83	6.09	36.12
31.		UzDEF 4 l/ha		8.26	10.76	1.56	8.58	5.91	35.06
32.		UzDEF 5 l/ha		8.02	10.44	1.52	8.33	5.74	34.04

With row crops , soybean seeds of the Oyjamol variety, with a seeding rate of 400-500 thousand pieces / ha, in the used version of the defoliant UzDEF at a dose of 3, 4, 5 l / ha,



when the beans ripened 50-55% , the dry matter decreased as the rate increased defoliant. It was noted that in the root of one plant the dry matter was 8.93-9.48 g, in the stem 12.89-13.67 g, in the leaves 1.82-1.94 g, in the grain 10.2-10.97 g, in bean pods 6.76-7.17 g. It was found that dry residues changed in the whole plant from 40.92 to 43.23 g. (Table 1)

In two- row crops , soybean seeds of the Oyjamol variety, at a seeding rate of 600-700 thousand pieces / ha, in the used version of the defoliant UzDEF at a dose of 3, 4, 5 l / ha, when the beans ripen, 60-65% of the mass of dry matter in the roots was 8.93-9.48 g, in the stem up to 12.40-13.16 g, in the leaves up to 1.67-1.77 g, in the grain up to 9.33-9.90 g, pods to 6.30-6.88 g per plant, it was found that dry matter changed in total by 37.45-39.73 grams. Soybean variety Tomaris MAN-60 with row crops at a seeding rate of 400-500 thousand units/ha, in the used version of the defoliant UzDEF at a dose of 3, 4, 5 l/ha, when the beans ripened 50-55% , the dry matter also decreased as the defoliant rate increased. Since in the root of one plant the dry matter was 8.58-9.11 g, in the stem 12.76-13.15 g, in the leaves up to 1.71-1.82 g, in the grain 9.70-10.29 g, in bean pods 6.33-6.72 g. It was found that the total amount of dry matter in one plant changed by 37.45-39.73 g.

In two- row crops in both varieties, the mass of dry matter is inferior to ordinary crops.

From the foregoing, it can be concluded that an increase in plant density per hectare does not provide an increase in the dry matter content of the soybean plant. But an increase in the number of bushes causes an increase in dry matter per hectare. Also, the use of defoliants causes a decrease in the dry matter content in the soybean plant. However, as a result of a sharp decrease in humidity in defoliated areas, conditions are created for the maturation of plants, and the amount of substances in the chemical composition of the grain increases due to the fact that plants use a sufficient amount of heat and light.

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