

to establish their morphological characters (plant size, inflorescence length, number of flowers / spikelet etc.).

3. Results and Discussion

Rapeseed culture was established by direct seeding in all 3 areas.

On the lands of Dâmbovița and Argeș County rapeseed culture has followed after cereal crops. Pictures taken in October on these lands show the degree of invasion by *Vulpia myuros* plants (Figure 1, 2).



Figure 1. Overview of rape field



Figure 2. The invasion of *Vulpia myuros* plants in rape crops

The infestation degree was not reduced by herbicides applied, e.g. Prosper or Agil 100 EC, the last in a dose of 2,5 l/ha.

In the Mihăilești town the rapeseed crop was established on a land which was fallow until 2013. Data resulted from soil analyses (Tab. 1) have led to the following scheme of fertilization: fall – 400 kg/ha NPK and 200kg/ha NAC; spring: 200 kg/ha urea. Rape culture establishment was made by using 60 germinable seeds/m². Post emergence herbicide Cleranda was applied.

Soil features correspond to the ecological requirements of the species.

As in the previous cases, *Vulpia myuros* infestation was observed early as autumn. Spring the herbicide Pulsar 40 application have no effect on *Vulpia* plants. The appearance of the rapeseed crop in June can be seen in Fig.3 and 4.



Figure 3. Rapeseed field in June in Mihăilești town



Figure 4. *Vulpia myuros* and rape plants

Table 1. The main characteristics of Mihăilești soil

pH (0-20 cm)	Humus %	N %	K mg/kg	P mg/kg	V %	IN	T m.e./100g soil	C/N
5,356	2,46	0,143	170	32,50	77.04	1,90	20,93	9,99
moderately acid	medium	medium	good	medium	medium	low nitrogen supply	medium	high fertility

pH - soil reaction; N - total nitrogen content; K – potassium content; P - phosphorus content; V% - the degree of base saturation; IN - nitrogen index; T - cation exchange capacity; C/N – cellulosic substances/protein substances

Morphometric data of *Vulpia* plants harvested from Mihăilești rapeseed culture were compared with existing data in the literature of our country [9] (Table 2).

Table 2. Morphometric data of *Vulpia myuros* plants from field observation and literature

The main morphometric data	Plant size (cm)	Inflorescence length (cm)	Spikelet length (mm)	Upper glume length (mm)	Lower glume length (mm)	Lemmas length (mm)	Awn length (mm)	Flower number/spikelet
Plants from field observations	130	38,66	15,97	5,01	1,92	4,61	10	4-8
Literature data (Flora RSR, Vol. XI)	25-50	20-40	8-11	5	-	-	10-15	4-5



Figure 5. *Vulpia myuros* - spikelet with eight flowers



Figure 7. Silique at the end of growing season



Figure 6. Mihăilești rape field in July

It is obvious, by comparing the data in the table, the morphometric values of field plants are exceeding data recorded in the literature. Causes of this phenomenon may be multiple and we cannot pronounce until they have made several observations on the behavior of *Vulpia myuros* plants in rape crops. A spikelet with eight flowers from *Vulpia myuros* Mihăilești plants can be observed in Figure. 5.

An assessment made at the end of the growing season indicated that the density of rapeseed plants was about five/m² (Figure. 6, 7).

4. Conclusions

Our study reveals a new situation, unprecedented in the literature of our country, about the behavior of *V.myuros* as weed species in winter rape culture.

Comparing literature data with our field observations the establishment by direct seeding of rapeseed crops was the precondition for the severe harvest decrease.

Bare spots in the field have allowed the installation and then propagation of *Vulpia myuros* plants though the rapeseed crops are dense.

This observation leads us to expand our research in the future; issues that will be pursued are: area and cultures in our country where the species is present; existence of

allopathic effects on rape plants; control options of *V.myuros* species populations through various methods etc.

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