WEED VEGETATION OF A VINEYARD ON SANDY SOIL

VOJNICH VIKTOR JÓZSEF*[1], PÖLÖS ENDRE[1], BAGLYAS FERENC[1]
[1]Pallas Athena University, Faculty of Horticulture and Rural Development, Kecskemét, Hungary
*Corresponding author's e-mail: vojnich.viktor@kfk.kefo.hu

Abstract: *Weeds are particularly competitive with grapes on sandy soil. They extract water and nutrients from the crops besides they shade plants. A weed survey was carried out in the demonstration vineyard of the Faculty of Horticulture and Rural Development of Pallas Athena University, in Kecskemét, in Hungary. The coenological survey was in 10th September 2015. The recordings were made in 5 x 2 m plots with Braun-Blanquet methods. Factors affecting of weed communities: Grown in culture; Climatic factors; Soil type; Soil cultivation; Methods of weed control; Allelopathy*
We found four types of weed communities: 1. Puncture vine (Tribulus terrestris); 2. Common purslane (Portulaca oleracea); 3. White goosefoot (Chenopodium album); 4. Bindweed (Convolvulus arvensis)

Key words*: weed control, soil cover, allelopathy, vineyard, Braun-Blanquet methods*

INTRODUCTION

It is well known that the field and horticultural crop production have among the primary factors reducing crop of weed plants. The weeds in the early stages of cultivation, when people of different wild plants were placed in culture, mass appeared in the sowing of crops such as pests. Since then the ecologically better adapted to characterize weeds and cultivated plants are less adaptable ceaseless struggle between them. The soil cultivation, plant care, in general, is that modern agricultural technology to, determines how much damage caused by weeds. The loss is estimated to reach 25-30% respectively.

Factors affecting weed associations:
- Cultivated culture
- Climatic factors
- Soil type
- Soil cultivation
- Weed control methods
- Allelopathy

Weed associations characterized by
- influenced by human activity
- varied in appearance, often a result of random events occur
- high degree of adaptation, tolerance
- low stability in
- a large proportion of invasive adventive species
- due to anthropogenic influence is difficult to organize
- are spreading due to the natural environment disturbance

The aim of the experiment was to examine how the above mentioned factors affect the composition of the weed flora in the investigated territory.

MATERIALS AND METHODS

A weed survey was carried out in the demonstration vineyard of the Faculty of Horticulture and Rural Development of Pallas Athena University, in Kecskemét, in Hungary. The area was added to coenological comment carried out on 10 September 2015. The survey was weighed and phytosociological survey was carried out 5 x 2 meter area. The quadrates were evaluated Braun-Blanquet's method [1].

The definition of weed:

- Ujvárosi [5] The natural vegetation does not occur only in the areas of culture, or members of the ancient vegetation, but cultivated areas conquered space.
- Lehoczky [4] Weed is any plant which there occurs where undesirable.
- Holzner [3] A man weeds growing plants best adapted to the activities that significantly affect agricultural cultivation.
- Bunting [2] The weeds are pioneer species in secondary succession.

The emergence of the weed plant of vegetation adaptation to the environment formed by man. Any weed plant can be considered harmful to us under the circumstances.
According of habitats:

1. field, pasture;
2. cutting areas;
3. disturbance areas, around of human domiciles

The damages caused by pests weeds forms:

- The habitat occupation
- The use of soil water reserves
- The use of nutrient stocks
- Parasitism
- Intermediate hosts of diseases, of pests propagation
- Increasing the cost of production
- Value of the downgrading
- Toxic weeds [5].

We found four types of weed communities:

1. Puncture vine (*Tribulus terrestris*)
2. Common purslane (*Portulaca oleracea*)
3. White goosefoot (*Chenopodium album*)
4. Bindweed (*Convolvulus arvensis*)

1, **Puncture vine** (*Tribulus terrestris*)

T. terrestris is an annual plant. The plant is slim, 60 cm height. Time of flowering was from July till late autumn. Spread through the tropical and subtropical areas. Nowadays is a cosmopolitan species. In Hungary of the Great Plains hacked in the loose, dry, wind blew, sandy soil was very common. Puncture vine was one of the most unpleasant weeds in Hungary. Life forms: T_4 (annual plant, germination of spring, flowering of late summer).

2, **Bindweed** (*Convolvulus arvensis*)

C. arvensis is a perennial plant; bindweed was one of the most common arable weeds. The underground stems and roots can also go down to a depth of 2-3 m of soil. Time of flowering was from early June till the first autumn frost. Throughout the world was spread and is one of the most pernicious weeds. In Hungary of the Great Plains Plain high levelled in the hot, dry regions of strongly bound soils, especially clay of meadow. Life forms: G_3 (in soil for wintering perennials).

3, **White goosefoot** (*Chenopodium album*)

C. album is a most common annual weed. White goosefoot was not only in the open fields, but all the nutrient-rich cultures occur. The plant height was 20-150 cm. Time

of flowering was from mid June till autumn (frosts onset). Life forms: T_4 (annual plant, germination of spring, flowering of late summer).

4, **Common purslane** (*Portulaca oleracea*)

P. oleracea is an annual plant, 15-30 cm height, succulent's plant. The sandy soil was of most burdensome weeds. Time of flowering was from July till frosts. Today almost on the Earth carried into temperate zone and warm zone, cosmopolitan species. The heat of summer was incredible to grown rapidly. Life forms: T_4 (annual plant, germination of spring, flowering of late summer).

RESEARCH RESULTS

The area we were able to isolate four weed territories:

1, **Puncture vine** (*Tribulus terrestris*) (Table 1)
2, **Bindweed** (*Convolvulus arvensis*) (Table 2)
3, **White goosefoot** (*Chenopodium album*) (Table 3)
4, **Common purslane** (*Portulaca oleracea*) (Table 4)

Table 1.

Puncture vine (*Tribulus terrestris*) area

Plant species	Casing (%)	A-D value
Tribulus terrestris	50	3-4
Portulaca oleracea	10	2
Digitaria sanguinalis	10	2
Setaris viridis	5	1-2
Amaranthus retroflexus	5	1-2
Melandrium album	0.5	+

Table 2.

Bindweed (*Convolvulus arvensis*) area

Plant species	Casing (%)	A-D value
Convolvulus arvensis	60	4
Portulaca oleracea	10	2
Eragrostis poaeoides	5	1
Setaria viridis	3	+-1
Amaranthus retroflexus	5	1

Table 3.

White goosefoot (*Chenopodium album*) area

Plant species	Casing (%)	A-D value
Chenopodium album	30	2-3
Portulaca oleracea	10	1-2
Chenopodium aristatum	5	1
Amaranthus retroflexus	5	1
Eragrostis poaeoides	5	1
Agropyron repens	3	+-1
Ailanthus altissima	0.5	+

Table 4.

Common purslane (*Portulaca oleracea*) area

Plant species	Casing (%)	A-D value
Portulaca oleracea	70	4-5
Eragrostis poaeoides	10	2
Chenopodium aristatum	5	1-2

All four examined areas can be found in common purslane (*Portulaca oleracea*). Three places were found in *Amaranthus retroflexus* and *Eragrostis poaeoides.* Two study areas there are *Setaria viridis* and *Chenopodium aristatum.*

CONCLUSIONS

On the sandy soil has a low humus content of extreme dryness tolerant weeds typically: *Tribulus terrestris, Portulaca oleracea.*

On the sandy soil warm up quickly accumulating weeds: *Chenopodium aristatum, Chenopodium album, Amaranthus retroflexus, Convolvulus arvensis.*

Mechanical weed control (hoeing) forced back as a result of the perennial plant species.

Weed species has been area with allelopathy: *Chenopodium album, Portulaca oleracea, Tribulus terrestris.*

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