THE APIARIAN IMPORTANCE OF CERTAIN RUDERAL AND SEGETAL WEEDS GROWING ON THE ROMANIAN TERRITORY

IMPORTANȚA APICOLĂ A UNOR SPECII DE BURUIENI RUDERALE ŞI SEGETALE DE PE TERITORIUL ROMÂNIEI

Daciana SAVA, Liliana PANAITESCU

Faculty of Natural and Agricultural Sciences, "Ovidius "University, Constanța, Romania
Corresponding author: Daciana Sava, email: dacianas@yahoo.com

Abstract: *In this paper we showed that certain species or ruderal and segetal species of weed have importance in apiculture, being a source of honey, nectar and pollen. So, some species can be of economic importance, instead of being eliminated from the agricultural cultures.*

Rezumat: *În această lucrare sunt prezentate, ca urmare a consultării literaturii de specialitate, câteva specii de buruieni cu importanță apicolă. Astfel în cazurile în care acest lucru este posibil este studiată posibilitatea utilizării şi valorificării lor, îndeosebi la cele cu pragul de dăunare mic şi când se poate menține îmburuienarea în cultură la un nivel la care plantele de cultură să nu aibă de suferit.*

Key words**:** *ruderal weeds, segetal weeds, apiarian importance*
Cuvinte cheie: *buruieni segetale, buruieni ruderale, importanța apicolă*

INTRODUCTION

The great Romanian agronomist Gh. Ionescu Siseşti said that weeds are "wild plants adapted to live together with cultivated plants, which they disturb in their development, destroy or eliminate from the field." Berca M, (1996) indicated that: "From a biological point of view, weeds are plants that have entered spontaneously or have been introduced involuntarily into cultivated biotopes – unwanted, disturbing or harmful plants when they exceed a certain level of density, and which generate several prejudices such as the diminishing of quality and reduction of production quantity.

At present, certain researchers believe that not all weeds are harmful. Some of them even have economical importance. Several of them can be utilized as food for humans (*Achillea millefolium, Alisma paltago-aquatica, Arthemisia absinthium, Capsella bursa pastoris, Cardaria draba, Chenopodium album, Malva silvestris, Rumex crispus, Taraxacum officinale*, etc).

Others are used in medicine to prepare different drugs or teas (*Consolida regalis, Centaurea cyanus, Datura stramonium, Melitothus officinalis, Mentha aquatica, Papaver rhoeas, Senecio vulgaris, Viola tricolor*). Also, some weeds are used to dye textile materials (*Arctium lappa, Chelidonium majus, Consolida regalis*, etc), while others can be used for ecological pest control (*Arthemisia absinthium, Consolida regalis, Pirethrum* sp., *Rumex* sp., *Solanum nigrum*, etc).

A less utilized characteristic of weeds is that they are sought by bees.

MATERIAL AND METHOD

The present paper, realized as a result of consulting specialized literature, has the purpose of drawing the attention towards the fact that weeds can have important characteristics that may be rendered valuable in various fields, even though they are mostly regarded as unwanted, harmful species growing in agricultural cultures. In this regard, the weed species

have been grouped on botanical families, according to their apiarian importance.

RESULTS AND DISCUSSION

It is considered that weeds appeared the moment man created the first cultivated field. Since they found there much better conditions for their development, they adapted and became undesirable trough the damages caused to the cultures.

In spite of this, certain positive aspects of their presence in the cultivated fields are also mentioned: the improvement of the soil with organic matter as a result of tilling, the stabilization of sandy soils, forage for the livestock in the absence of other species (Berca, 1996) and last but not least, their role alongside the other plants in enriching the air with oxygen resulted from their photosynthesis processes.

In the latest years, modern opinions have emerged regarding the integrated management of weeds, on the one hand reconsidering the idea that they have no economical value, and on the other, accepting the idea that, in order to maintain the biodiversity, the presence of weeds must be accepted in the cultures up to the economical level of pests (Ciocârlan et.al., 2004; Muntean L.I. et. al., 2003).

Man can also benefit from those weed species of alimentary importance (*Alliaria petiolata* – salad and condiment, *Chenopodium album* – broth, *Urtica dioica* – broth, stew), with medicinal characteristics (*Geum urbanum, Polygonum aviculare, Potentilla anserina*), or used in the cosmetics industry (*Matricharia chamomilla, Chelidonium majus*, etc)) (Budoi, 1996)

Many weeds are visited by bees, having thus apiarian importance. Some species have great apiarian economical weight, others moderate or more reduced, according to species and their geographical distribution. Also, the nectar concentration and production vary (sometimes significantly from one species to the other) according to the structure of the nectarial glands. (Ifteni, 1964) (Table 1, Table 2).

CONCLUSIONS

Considering the information given, with the intention of realizing a preliminary, theoretical study, it can be observed that numerous species (among the most common ruderal or segetal weeds) are not harmful, but may constitute in certain cases, considerable reserves of nectar and pollen, which indicate their apiarian importance.

What must also be taken into account is the fact that sometimes, pest control by means of herbicides can have unexpected effects, leading to situations in which the biodiversity is seriously affected. In certain European countries, there are endangered segetal species (Ciocârlan et al., 2004).

Thus, whenever possible, it is recommended to use and render them valuable, especially those with a low pest level and when weeds can be maintained in a culture at a level that does not affect cultivated plants.

LITERATURE

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Table 1

Weeds with high and medium apiarian importance

Scientific name	Romanian popular name	Importance
Familia Labiatae		
Mentha aquatica	Izma broaştei	220 kg/ha honey; nectar, pollen
Familia Papaveraceae		
Papaver rhoeas	Macul roşu	Pollen
Familia Boraginaceae		
Echium vulgare	Iarba şarpelui	10 kg/ha honey; pollen,
Symphytum officinale	Tătăneasă	130-220 kg/ha Honey; nectar, pollen, nectar with 0,7-1,8 mg sugar/flower
Familia Compositae		
Helianthus tuberosus	Nap porcesc	30-60 kg/ha honey; pollen, nectar, 0,09-0,3 mg sugar/flower
Taraxacum officinale	Păpădie	200 kg/ha honey; nectar, pollen
Familia Fabaceae		
Melilotus officinalis	Sulfină	130-300 kg/ha honey; nectar, pollen
Familia Labiatae		
Lamium album	Urzică moartă	50-150 kg/ha honey; nectar, pollen
Lamium purpureum	Sugel	50-90 kg/ha; nectar 0,2-0,6 mg/flower; nectar concentration 21%
Leonurus cardiaca	Talpa gâştii	230-400 kg/ha honey; pollen, nectar 0,26-1,3 mg/fl. with 32% concentration
Lycopus europaeus	Cervană	50-200 kg/ha honey; nectar, pollen
Marubium vulgare	Unguraş	50-60 kg/ha honey; nectar, pollen
Mentha pulegium	Busuiocul cerbilor	100 kg/ha miere; nectar, pollen
Prunella vulgaris	Busuioc sălbatic	90-200 kg/ha honey; nectar, pollen 0,38-0,086 mg/fl. with 20-25% concentration
Familia Lythraceae		
Lythrum salicaria	Răchitan	200 kg/ha honey; nectar, pollen, nectar 0,2-1,2 mg/flower, with 11-62% cu o concentration
Familia Polygonaceae		
Polygonum aviculare	Troscot	40 kg/ha honey; nectar, pollen
Familia Rosaceae		
Rubus caesius	Mur de mireşte	30-50 kg/ha miere; nectar, pollen
Familia Umbelliferae		
Eryngium campestre	Scaiul dracului	100 kg/ha miere; nectar, pollen

Table 2

Weeds with low apiarian importance

Scientific name	Romanian popular name	Importance
Familia Caprifoliaceae		
Sambucus ebulus	Boz	30-40 kg/ha honey; nectar, pollen
Familia Compositae		
Arctium lappa	Brusture	300 kg/ha honey ; nectar, pollen
Centaurea cyanus	Albăstriță	50-60 kg/ha honey ; nectar, pollen
Familia Cruciferae		
Brassica rapa	Rapiță sălbatică	30-100 kg/ha honey ; nectar, pollen
Barbarea vulgaris	Cruşățea	30-40 kr/ha honey nectar 0,6mg/fl.
Familia Resedaceae		
Reseda lutea	Rechie	50-60 kg/ha honey nectar, pollen
Familia Labiatae		
Ballota nigra	Cătuşe	20-60kg/ha honey ; nectar, pollen
Familia Onagraceae		
Epilobium hirsutum	Pufuliță	40-60 kg/ha honey ; nectar, pollen, nectar 0,3-0,5 mg/flower
Familia Malvaceae		
Althaea officinalis	Nalbă mare	50-100 kg/ha honey ; nectar, pollen