



Fig. 2. The Systematic collection of the Agrobotanical Garden situated on Dealul Craiului (King's Hill) Cluj-Napoca. I - XVI = systematic plots with plant families and economic groups; A = experimental field; B = forest plants; C = Gymnospermae; D = rock; E, L, M = buildings F, J = experimental plots; G = main path; H = basin; K = courtyard.

RESULTS REGARDING THE STUDY OF AN ESPARCET (*ONOBRYCHIS*)
 COLLECTION

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Abstract:

ROMAN A., PERSECĂ E., KAIN I. 1979, Results regarding the study of an esparcet (*Onobrychis*) collection. Not. Bot. Hort. Agr. Cluj., 1979, X, 53-58. The results of the studies done between the years 1974-1975 on a number of 101 samples of esparcet (*Onobrychis* spp.) under the conditions of Cluj-Napoca are being recorded. There have been remarked for higher DM production and very significant growth 5 samples, other 6 varieties achieved a significantly higher growth. The quality of fodder was appreciated according to protein and cellulose contents and leaf percentage. A number of 5 samples displayed significantly higher protein contents and that of cellulose lower than the control. All the 23 samples remarked for their precocity, resistance to diseases, production and quality, are worth being used as genitors in the breeding of cultivated varieties.

Index words: *Onobrychis* spp., variability, resistance, DM production, breeding.

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Esparcet is characterised by very valuable features under fodder and melliferous aspects, resistance to wintering and drought and a high biological capacity of synthesizing the fertilizing elements from the eroded, poor, stony and calcareous soils. Being cultivated with perennial herbs or alone, it lets a high quantity of roots in soil, which contribute to the increasing of the supplies of organic

substance by decomposition, thus, being a good precursory species for other cultures as well.

In order to increase the economic efficiency of the culture of this plant, it is necessary to introduce, in the culture, assortments more productive than those already existing and to establish a proper technology of seed production. In order to create new assortments there have been collected species, varieties and populations of esparcet from abroad. The biological material gathered, was studied in comparison with the ICA 6 variety during the years 1974-1975. Comparative studies have been conducted in Cluj-Napoca, Sapca Verde experimental field.

The experiments were done on an alluvial soil, well fallow, medium fertile, with a pH between 7-8. The winters were generally mild, and the summers with abundant precipitations (238-320 mm). The medium temperature oscillated between 14-18 °C during the summers, being very favourable for esparcet culture. These conditions greatly favoured the growing of plants having been obtained three crops of fodder with some variations in the second year of vegetation, or one crop of fodder and one of seed.

Material and Method

We present in our paper a number of 23 variants out of 101 studied, which were especially remarked under the aspect of physiological production and quality features.

The plants were studied individually, at a distance of 70x70 cm. There were studied, for each individual, the number of stems and floral thins, the production of DM., the percentage of leaves, the quantity of protein and cellulose, the resistance to diseases, drought and to frost, the capacity of regeneration after mowing and the vegetation period.

The interpretation of the results was obtained according to the index of variation method. The production was expressed in DM kg/ha having been calculated the index of significance of the "t" difference.

Results

The species, varieties, as well as the local populations studied, were grouped on the basis of flowering in the first or second year of vegetation.

Esparcet forms which blossomed in the first year of vegetation have obtained two crops of fodder or one of seed; and in the second year of vegetation, three crops of fodder or one crop of fodder and one of seed. These forms have also been grouped by other researchers (1, 7) in Onobrychis sativa var. bifera.

Ecotypes which blossomed only in the second year of vegetation had generally attained a significantly smaller production than the assortment used for comparison. These forms were grouped in Onobrychis sativa var. communis. This is the reason why we present in this paper only the variants which blossomed in the first year of vegetation and which were remarked by increasing productivity as compared with the variant ICA-6, having been considered as control variant.

The observations of the vegetation period, remarked 5-11 days earlier flowering by the following samples: Onobrychis arenaria (Tescianfi 3274); O.iberica; O.petraea; O.persica; (Estonia) O.tanaitica (Grasnodarschi Crai); O.transcaucasica (1238); O.transcaucasica (Ahalcalovschi); O.viciifolia (Ucraina) and O.viciifolia (Poltavski 553).

The field observation and the laboratory analyses had identified an attack of Stemphylium onobrychidis; Ascochyta onobrychidis. Puccinia onobrychidis and viroses. Among the studied variants a good resistance to the attack of Stemphylium onobrychidis had been displayed by Onobrychis arenaria (Cazastan) and O.sibirica (Estonia). A good resistance to the attack of Ascochyta and Puccinia onobrychidis had been displayed by Onobrychis arenaria O.inermis and O.viciifolia cv. Mestiob.

All the variants proved a good resistance to the wintering conditions.

It was determined the DM production of three crops of the second year of vegetation. We mention some variants which had shown remarkable increasing of 40-60 % of production, such as: Onobrychis arenaria; O.arenaria (Cruscaia oblasti); O.hostojana; O.petraea Azerbaidjan and O.transcaucasica (Ahalcalovschi Gruzia). The O.inermis (Crasnodarschi Crai) O.arenaria (Cazastan) O.sibirica (Estonia). O.viciifolia (Severocaucazchi), O.viciifolia (Postaliev) cultivated varieties and the Chiendu Mare populations had exceeded the production of check sample significantly with 27-35 per cent growth and a number of 13 variants had achieved significant growth of 16-24 per cent higher. (Fig.1.)

The protein content had varied between 13.84 and 19.68 per cent. We mention some variants which were remarkable in their aspect of DM.

production, such as: O.arenaria; O.arenaria (Tescianfi 3274); O.perseca; O.sibirica (Estonia) and O.viciifolia (Mestiob.).

The cellulose content had varied between 23.3 and 30.04, the variants with low cellulose content had an increased content of protein (Table 1).

The quality of fodder is greatly influenced by the relation between leaves and stems. The results obtained show the fact that the relative proportion of leaves had widely oscillated (36.8 - 48.7%).

The highest percentage of leaves was obtained by Onobrychis tanaitica (Crasnodarschi Crai); O.transcaucasica (Ucraina 1238); O.viciifolia (Poltavschi 554); O.viciifolia (5/4); and O.viciifolia (Postaliev).

The quality of fodder for each variant was established in relation to the percentage of protein, cellulose and leaves.

Some of variants were marked in respect of DM production and had comprised very good quality features such as: O.persica and O.arenaria 3274, which had the protein content comprised between 16.70 - 19.65 %; cellulose 26.9 - 28.70 % and leaves 39.0 - 48.5 %.

Conclusions

1. Onobrychis arenaria (Cruscaia Oblasti); O.hastajana (Armenia), Onobrychis petraea (Dicorostugii Azerbaidjan) and Onobrychis transcaucasica (Ahalcalovschi Gruzia), had high DM production and very significant (40-60 %) overgrowth. A number of six samples had achieved very significant growth, of 27 - 35 % and 15 samples had significant growth of 16 - 24 %, as compared with check sample ICA 6.

2. All the 23 variants which had been superior in their precocity, resistance to diseases, production and quality, are worth being used as genitors in the process of amelioration.

Table 1.

Precocity, resistance and productivity of the best Onobrychis samples on the experimental field Sapca Verde (Cluj).

N A M E	Precocity (days)	Resistance Disease	Winter ing	DM production %
<u>Onobrychis viciifolia</u> ICA 6	0	8	9	100%
<u>O.arenaria</u>	5	8	9	116%
<u>O.arenaria</u> (Cruscaia Oblasti)	4	7	9	143%
<u>O.</u> " (Uluceni Cazastan)	3	8	9	132%
<u>O.</u> " (Tescianfi 3274)	5	8	10	116%
<u>O.biebersteinii</u>	3	7	9	121%
<u>O.hastajana</u> (Armenia)	3	8	9	140%
<u>O.inermis</u> (Crasnodarschi Crai)	6	9	9	127%
<u>O.ibirica</u> (Dicorostugii Gruzia)	6	8	9	124%
<u>O.petraea</u> (" Azerb.)	7	9	10	154%
<u>O.persica</u>	11	8	9	119%
<u>O.sibirica</u> (Estonia)	7	9	9	135%
<u>O.tanaitica</u> (Crasnodarschi Crai)	6	7	9	119%
<u>O.tanaitica</u>	5	8	9	124%
<u>O.transcaucasica</u> (Ucraina 1238)	6	7	9	124%
<u>O.</u> " (Ahalcalovschi)	10	8	9	162%
<u>O.viciifolia</u> (Ucraina)	6	8	9	124%
<u>O.</u> " (Poltavschi)	6	8	9	121%
<u>O.</u> " (Ucraina 5/4)	6	7	9	127%
<u>O.</u> " (Severocaucaschi)	4	8	9	130%
<u>O.</u> " (Mestiob)	4	8	9	124%
<u>O.</u> " (Postaliev)	3	7	9	138%
<u>O.viciifolia</u> (Chiendu Mare; pop)	3	8	9	130%
<u>O.</u> " (Batog; pop.)	4	8	9	124%

R E F E R E N C E S

1. ALLISON, D.W., ASBOURN, D.F., 1970, *J. Agric. Sci. Cambridge*, 74, 1, 23 - 26.
2. BACIU, T., 1977, Contribuții ale cercetării științifice la dezvoltarea agriculturii, București, 199 - 205.
3. KELLNER, E., VARGA, P., 1964, *Analele I.C.C.P.T. Fundulea*, vol. XXXII, seria C, 419 - 422.
4. KNIPE, W.J., and CARLETON, A.E., 1972, *Crop Science*, 4, 520-522.
5. MARGINEANU, T., BRETH, H., 1965, *Analele I.C.C.P.T. Fundulea*, vol. XXXII, seria B, 579.
6. MOGA, I., 1963, *Probleme Agricole*, 11, 36.
7. ROCHOIX, M., 1965, *Station Federales d'Essais Agricoles, Lusanne*, 742, 111.
8. RUSU, E., 1965, *Probleme Agricole*, 64.
9. VARGA, P., SLUȘANSCHI, H., 1960, *Analele I.C.A.R.*, vol. XXVII, 227.

SELTENE PILZE AUS RUMÄNIEN II.^{x)}

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Abstract:

PÁZMÁNY D., LÁSZLÓ K., 1979, Seltene Pilze aus Rumänien II. (Rare Macromycetes of Roumania II.). *Not. Bot. Hort. Agrobot. Cluj.*, 1979, X, 59-67. The paper gathers data on Macromycetes new to the mycoflora of Roumania and some new sites of rare species as well. The 55 species mentioned in the paper belong mainly to the class of Basidiomycetes and within this to the Agaricales. The data refer to fungi collected in Transylvania and mostly to those from around Cluj-Napoca.

Index words: Basidiomycetes, Agaricales, Roumania.

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Die Belege von Grosspilzen die von Verfassern hauptsächlich in den letzten Jahren gesammelt wurden, haben zur Identifizierung unbekannter Arten der Mykoflora Rumäniens und Beweise neuer Fundorte einiger seltener Pilze gebracht.

Die in dem Artikel erwähnten Pilze sind auf Klassen und Ordnungen gruppiert, in denen die Arten nach ihrer alphabetischen Reihenfolge aufgezählt sind. Sie wurden von uns in dem nördlichen Teil Rumäniens (Transsilvanien), hauptsächlich in der Nähe von Cluj-Napoca, gesammelt. Die Präparate der Pilze befinden sich in den Herbarien der Verfassern.

x) Die erste Mitteilung ist in der Zeitschrift für Pilzkunde (7) erschienen.

- Abkürzungen: L = K. László, P = D. Pázmány.