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FUNGUS EVALUATION FROM SEEDS GERMPLASM BEFORE MEDIUM AND LONG TERM STORAGE

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ABSTRACT. During 2000-2016, 213 entries from 29 plant species from different crop groups (cereals, legumes, industrial crops, perennial grasses, vegetables, cucurbits, aromatic and medicinal plants) from core collection of the Suceava Genebank were evaluated from phytosanitary status point of view, before the storing. The seeds testing to the micromycetes incidence in the laboratory by incubating of them on blotting paper substrate and agar medium was performed. Fungal saprophytes from genus as: *Alternaria* spp., *Stemphylium* spp., *Cladosporium* sp., *Rhyzopus* sp., *Epicocum* sp., *Aspergillus* sp., *Penicillium* sp., *Botrytis* sp. occurred frequently in seeds samples of the tested crops. Also, 12 fungal parasite were isolated: *Sclerospora* sp., *Diplodia* sp., *Nigrospora* sp. on maize; *Drechslera* spp. on wheat, barley, rye and flax; *Septoria* sp. on barley; *Fusarium* spp. on maize, barley, rye, millet, bean, pea, flax, hemp, peppers, cucumbers; *Colletotrichum* spp. on maize, bean and faba bean; *Sclerotinia* sp., *Isariopsis* sp. and *Rhyzoctonia* sp. on bean; *Verticillium* sp. on peppers and okra, *Ascochyta* sp. on pea. The obtained results were expressed as percentage of the number of fungal isolated from tested samples species, highlighting the existing microflora and need to seed health testing with major importance in maintaing of high quality germplasm avoiding the pathogens preservation and dissemination.

Keywords: germplasm; micromycetes; micoflora; parasite; saprophyte.

REZUMAT. Evaluarea fungilor din germoplasma seminţei înainte de depozitare pe termen mediu şi lung. În perioada 2000-2016, 213 intrări de la 29 de specii de plante s-au evaluat privind starea fitosanitară înainte de conservare. Materialul genetic studiat a fost reprezentat de genotipuri din grupe fito-horticole, ca: cereale, leguminoase pentru boabe, plante textile, graminee perene, legumicole (solano-fructoase, bostănoase, verdeţuri, aromatice şi codimentare), medicinale, din colecția activă a Băncii de Resurse Genetice Vegetale Suceava. Testarea seminţelor la incidenţa micromicetelor s-a efectuat în laborator prin incubarea acestora pe substrat de sugativă şi mediu agarizat. Micromicetele saprofite din genurile *Alternaria* spp., *Stemphylium* spp.,

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Cladosporium sp., *Rhyzopus* sp., *Epicoccum* sp., *Aspergillus* sp., *Penicillium* sp., *Botrytis* sp. s-au manifestat frecvent în probele de seminţe ale speciilor testate. De asemenea, s-au izolat 12 genuri de micromicete parazite, ca: *Sclerospora* sp., *Diplodia* sp., *Nigrospora* sp. pe porumb, *Drechslera* spp. pe grâu, orz, secară şi in, *Septoria* sp. pe orz, *Fusarium* spp. pe porumb, orz, secară, mei, fasole, mazăre, in, cânepă, ardei, castraveţi, *Colletotrichum* ssp. pe porumb, fasole şi bob, *Sclerotinia* sp., *Isariopsis* sp., *Rhyzoctonia* sp. pe fasole, *Verticillium* sp. pe ardei şi bame, *Ascochyta* sp. pe mazăre. Rezultatele obţinute s-au exprimat procentual din numărul de colonii de micromicete izolate, din probele speciilor testate, evidenţiind micoflora existentă şi necesitatea efectuării testelor de sănătate a seminţei, cu importanţă majoră în păstrarea unei germoplasme de calitate înaltă, evitând conservarea şi diseminarea patogenilor.

Cuvinte cheie: germoplasmă; micromicete; micofloră; parazit; saprofit.

INTRODUCTION

Seed collections preservation in genebanks is an important strategy to save them from physical destruction, genetic damage and to ensure to external users genetic material for commercial development of cultivated species (FAO, 1989).

Suceava Genebank keeps two kinds of seed collections (active collection at +4ºC and basic collection at -20ºC) using methodology agreed by IPGRI (International Genetic Resources Institute, Rome, Italy) and FAO (Genebank Standards, 1994). In order to be conserved in both temperature conditions, germplasm must provide a proper health and physiological status because of plant pathogens, which could be source on infection and dissemination from primary inoculum existing in the seed. Also, it can produce seed viability decreases after a period of conservation, as well as the death of the seed before or after germination (Placintă, 2005). Parasite micromycetes can remain viable in different storage conditions, due of organ resistance occurrence or micelles inside of the seeds (Agarwal *et al.,* 1987). The fungus longevity and seed viability are influenced by storage conditions. Various studies carried out on seeds, stored for 14 years at +4ºC and -20ºC (Hewett, 1987; Placintă *et al.,* 2007), reported the absence or even presence of pathogenic fungus. This study aims to determine the associated micoflora to the seed plant species in various crop categories from Suceava Genebank collection before medium and long term storage, in order to avoid or reduce the dissemination of pathogens.

BIOLOGIC MATERIAL AND RESEARCH METHOD

The biologic material, selected during period 2000-2016 for this experimental study, was represented by 213 seed samples belong to 29 plant species, which come from acquisitions, multiplication/regeneration and core collection of the Suceava Genebank. In order to assets seed microflora compozition in each species were established 50 seed samples. The perenial grass, legumes, cucurbits, vegetables, medicinal and aromatic plant were analyzed by blotting paper test. Seed samples were incubated on blotting paper

moistened with distilled water in plastic Petri dishes for 7 days at 20°C ± 2. Cereal species, legumes and industrial crops were tested using the Ulster method (Malone Musket, 1964) on potato-glucose-agar (CGA) substrate. Petri dishes with sterilized nutritive substrate were seeded and incubated for 7 days at a temperature of 20°C ± 2. In both methods the incubated seeds were exposed to alternative cycle on 12 hours UV light and 12 hours dark. The fungal colonies types grown on the seeds were determined macroscopic under the binocular microscope, and conidian types by performing of the microscopic lame. Micoflora assessment was performed by colonies counting whose frequency was expressed as a percentage.

RESULTS AND DISSCUSION

The results presented in this study have a statistical character, showing the isolated fungus genus, proportion between them on each species of studied crops. The most tests were conducted on important crop species, such as: cereals, legumes, vegetables and industrial plants (*Table 1*).

The biologic material tested in this study, by the two methods (Ulster and blotter test) shows different characteristics of the seed associated micoflora (*Table 1*) highlighting some crop species with increased frequency of fungus:

- wheat (*Triticum aestivum*) with 12 analysed samples, 600 isolates, 852 fungus colonies, 9,3% parasite micromycetes, 89,6% saprophyte micromycetes;

- rye (*Secale cereale*) with 14 analysed samples, 700 isolates, 396 fungus colonies, 11,8% parasite micromycetes, 77,1 % saprophyte micromycetes;

- bean (*Phaseolus vulgaris*) with 17 analysed samples, 850 isolates, 592 colonies, 4,9 % parasite micromycetes, 18,4 % saprophyte micromycetes;

- flax (*Linum usitatissimum*) with 35 analysed samples, 1750 isolates, 325 colonies, 4% parasite micromycetes, 15,4% saprophyte micromycetes;

- pepper (*Capsicum* sp.) with 12 analysed samples, 600 isolates, 214 colonies, 3,4% parasite micromycetes, 3.6% saprophyte micromycetes.

Referring to two categories of determined fungus on majority of species it was noticed o high frequency of the saprophyte fungus, in comparison with parasite fungus. The saprophyte fungus were occurred in high percentage on crops, as: wheat, bean, flax and rye (*Fig.1*).

Concerning the parasite micromycetes were identify 12 fungus genus on cereals, grain legumes, industrial plants, cucurbits and solanus, such as: *Fusarium* spp., *Drechslera* spp., *Colletotrichum* spp., *Sclerospora* sp., *Diplodia* sp., *Nigrospora* sp., *Septoria* sp., *Sclerotinia* sp., *Ascochyta* sp., *Rhyzoctonia* sp., *Isariopsis* sp., *Verticillium* sp. (*Table 2*).

Table 1 Crop species tested to the micromycetes infection, during 2000-2016

Crop category	Host species	No. of Acesses	Parasite micromycets (% colonies)	Saprophyte micromycets (% colonies)
Cereals	*Zea mays*	11	12.9	15.4
	Triticum aestivum	12	9.3	89.6
	Hordeum vulgare	23	9	42.2
	Avena sativa	14	4.1	20.7
	Secale cereale	14	11.8	77.1
	Sorghum bicolor	4	0	1.5
	Panicum miliaceum	2	1.8	4.7
Grain legumes	*Phaseolus sp.*	17	4.9	18.4
	Pisum sativum	12	0.8	10.4
	Vicia faba	8	1.6	7.2
Fibre crops	*Linum usitatissimum*	35	4	15.4
	Cannabis sativa	6	1.6	6.1
Forages	*Setaria italica*	1	0	1.5
	Lolium perene	1	0	3.9
	Dactylis glomerata	1	0	2.5
	Trifolium pratense	1	0	7.3
Solanaceae	*Solanum lycopersicum*	14	0	7.4
	Capsicum sp.	12	3.4	3.6
	Solanum melongena	7	0	0.7
	Hibiscus esculentum	2	0.2	0.8
Cucurbits	*Luffa cylindrica*	1	0	3.8
Leafy vegetables	*Atriplex hortensis*	2	0	6.5
Aromatic plants	*Levisticum officinale*	1	0	1.3
	Satureja hortensis	1	0	4.5
	Nigella sativa	1	0	1.8
Medicinal plants	*Sinapis arvensis*	4	0	1,2
	Calendula officinalis	2	0	3.4

In *Fusarium* (Link), genus, the most frequently is meet the species *Fusarium oxysporium* (Schlecht) Sn. and H. on flax, pepper, egg plant, hemp seed samples, in percentage of 1.2-1.9%, follow by *Fusarium roseum f.graminearum* (Schawab) Sn. and H. on barley, rye, millet seed samples (1.4 – 3.2%), *Fusarium moniliforme* (Sheld.) Sn. and H. on maize seed samples (3.9%) and *Fusarium solani* (Mart.) (Appel and Wr.) Sn. and H. on pea and bean seed samples (0,5-0,8%). *Fusarium oxysporium* is a parasite micromycete on flax plants being a species with vascular infection very rarely transmitted by seed, and in field produce the vascular browning, leaves yellowing and plants wilting. Also, *Fusarium oxysporium,* frequently is transmitted on seeds and to the other crops species, producing non vascular infection, being responsible by roots

rot, coleoptile browning, germination diminishing (Champion, 1997). *Fusarium rosem f. gramin*earum and *Fusarium moniliforme* appear on barley, rye, millet, maize seed samples, producing the embryo death, seedling coleoptile browning, weight diminishing, grain discoloration and shrivelled, plants wilting during vegetation period, destroying different parts of plants until harvesting. *Fusarium solani* shows a low frequency on peas and beans seed samples but can manifest different symptoms on seedlings causing germs rot (Champion, 1997).

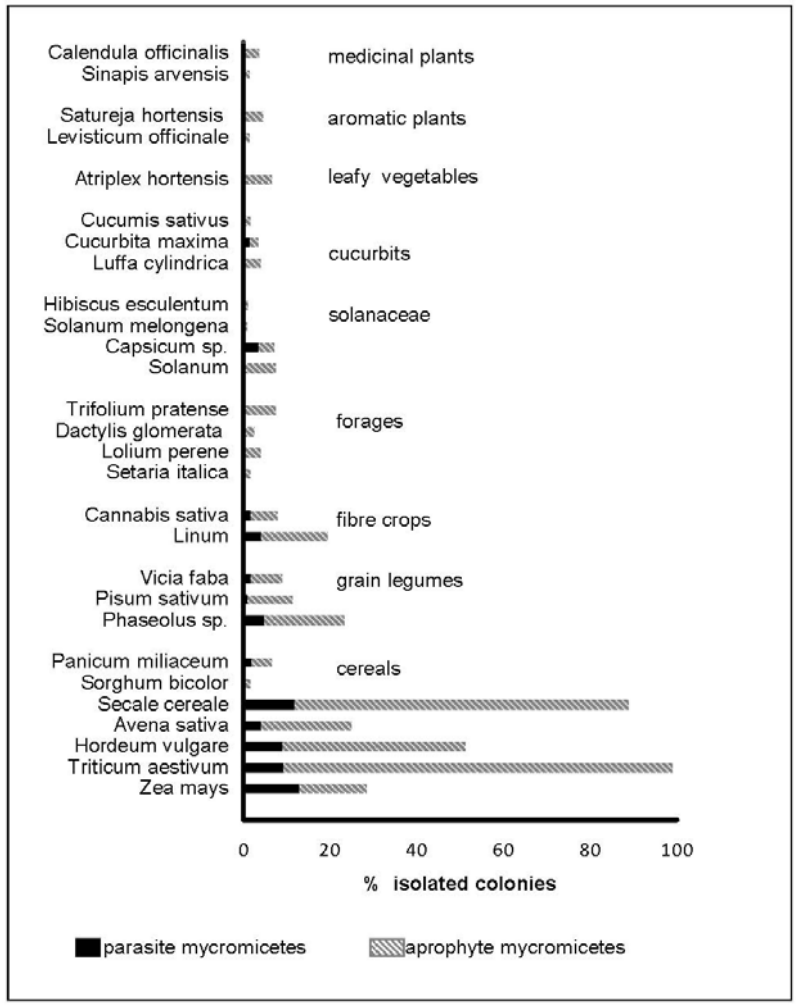

Figure 1 - The frequency of parasite and saprophyte micromycetes on different plant species

Table 2 - Parasite micromycetes identified on cereals, grain legumes, industrial plants, solanaceae and cucurbits seeds, during 2000-2016

Parasite micromycetes / Host species	Cereals (% of colonies)						
	Zea mays	*Triticum aestivum*	*Hordeum vulgare*	*Avena sativa*	*Secale cereale*	*Sorghum bicolor*	*Panicum miliaceum*
Sclerospora maydis	4.5	0	0	0	0	0	0
Fusarium moniliforme	3.9	0	0	0	0	0	0
Nigrospora oryzae	2.8	0	0	0	0	0	0
Diplodia maydis	1.2	0	0	0	0	0	0
Colletotrichum graminicola	0.5	0	0	0	0	0	0
Drechslera teres	0	8	2.7	0	0	0	0
Drechslera sorokiniana	0	1.3	2.2	4.1	4	0	0
Drechslera gramineea	0	0	2.2	0	0	0	0
Drechslera secalis	0	0	0	0	6.4	0	0
Fusarium roseum f.graminearum	0	0	3.2	0	1.4	0	1.8
Septoria nodorum	0	0	0.9	0	0	0	0

Parasite micromycetes / Host species	Grain legumes (% of colonies)			Fibre crops (% of colonies)	
	Phaseolus sp.	*Pisum sativum*	*Vicia faba*	*Linum usitatissimum*	*Cannabis sativa*
Colletotrichum lindemuthianum	2.1	0	1.6	0	0
Ascochyta pinodes	0	0.3	0	0	0
Isariopsis griseola	1.2	0	0	0	0
Sclerotinia sclerotiorum	0.7	0	0	0	0
Fusarium solani	0,8	0.5	0	0	0
Fusarium oxysporium	0	0	0	1.5	1.6
Rhyzoctonia solani	0.1	0	0	0	0
Drechslera linicola	0	0	0	2.5	0

Parasite micromycetes / Host species	Solanaceae (% of colonies)			Cucurbits (% of colonies)
	Capsicum sp.	*Solanum melongena*	*Hibiscus esculentum*	*Cucurbita maxima*
Fusarium oxysporium	1,9	1,2	0	0
Verticillium dahlie	1.5	0	0,2	0
Fusarium solani	0	0	0	1,5

The species of genus *Helminthosporium* (Link)=*Drechslera* Ito.: *Drechslera sorokiniana* (Sacc.) Subram. Et Jain appeared on cereals (wheat, barley, oat and rye) seeds in percentage on 1.3 - 4%; *Drechslera teres* (Sacc.) Shoem. appear only on wheat and barley seeds in high proportion (2.7-8%); *Drechslera secalis* (Whit.and Dick.) on rye seeds (6.4 %), *Drechslera graminea* (Rab and Schlecht) Shoem on barley seeds (6.4%) and *Drechslera linicola* (Kletsh) Ondrej on flax seeds (2.5%). *Drechslera sorokiniana* is transmitted frequently on cereals and perennial grasses seeds, producing the roots rot, black spots on young plant leaves being very virulent in seedling stage through germs destroying before reaching 5 mm (Champion, 1997). Also, this fungus produces a black pigmentation of kernel in embryo area (black point) during milk or waxy ripening besides of saprophytes, as: *Alternaria alternata, Cladosporium herbarum* on wheat and barley seeds (Raicu and Baciu, 1978). *Drechslera teres and Drechslera graminea* are preserve on barley seeds for many years in pericarp, produce an intern fading at the base of grains and in good climatic conditions can cause coleoptile rot during emergence or produce different symptoms on leaves (longitudinal streaks or patches network) and on spikes and grains (spots brown), during vegetation period (Placintă and Murariu, 2008).

Sclerospora genus with fungal species *Sclerospora maydis* (Racib.) Butler appears on maize seeds at a rate of 4.5%. This pathogen is transmitted by seeds and is destructive, causing yieald losses of 40%. In Indonesia, the attack of this fungus, during year 1964, caused crop losses of 80 - 90% in districts Tjiandjur, West Java (Purakusumah, 1965).

Diplodia maydis (Berk.) Sacc. from genus *Diplodia,* was detected in maize seed samples in percentage of 1.2%. It is a main parasite in many countries with seed inocul, what causes the infected ears rot during silking period, rot of strains at joint nodes level and rot of plantlet, during emergence period. The detected pathogens on barley and wheat seeds as: *Drechslera sorokiniana, Drechslera teres* and *Diplodia maydis* detected on maize seeds are reported as responsible for seeds deterioration and plantlets death in pre or postemergence (Lucca Filho, 1985).

Nigrospora oryzae (Berk. and Broome) Petch from the genus *Nigrospora* was identify in percentage of 2.8% on maize seeds tested on agar substrate. The micromycete was reported in fields, in Romania in 1929 by Săvulescu şi Rayss on maize plants or ears and in storehouses attacking frequently the ears of flint category and rarely on stems in the joint nodes (Petrescu, 1969).

From genus *Colletotrichum* (Corda), the fungus species: *Colletotrichum lindemuthianum* (Sacc. and Magn.) Briosi and Cav. occurred on bean seeds (2.1%) and *Colletotrichum graminicola* (Ces) Wilson occurred on tested maize

seeds (0.5%). The micromycete *Colletotrichum lindemuthianum* appear in field on the seed hypocotyl, like gray spots, which sporulates only in wet weather resulting the root rot of young plants, 4% infection level in a seeds lot determines 50% attack, during vegetation period in field crops (Menten, 1991). The micromycete *Sclerotinia sclerotiorum* (Lib.) de Bary, which belong to genus *Sclerotinia* (Fuckel), has been sporadically reported on bean seeds at the rate of 0.7%. The epidemics of white rot at beans crop, occur at flowering, ascosporous being the primary source of infection, frequently manifested in fields at crop species with slow vegetative growth and in poorly aerated areas (Abawi and Grogan, 1975). In our country it mentioned sporadic attacks by 6% to 50% in Cluj area, Someşeni village, in 1966 (Seşan and Crişan, 1998).

Verticillium dahlie (Klebahn) occurred on peppers seeds in percentage of 1.5% and on okra seeds of 0.5%. This fungus is a parasite species of genus *Verticilium* detected with help of blotter paper test, widespread in soil and on seeds. *Verticillium dahlie* can be localized to the skin seeds from diseased plants and in soil on plant debris from greenhouse, infected with epiphytes in percent of 40-50%, and in some years, causing serious damages in the field too (Gheorghieş and Geamăn, 2003).

By identifying of saprophytic flora in samples tested on agar medium and blotting paper were found the following genus of fungus: *Alternaria* spp., *Cladosporium* sp., *Stemphylium* spp., *Cephalosporium* sp., *Acremoniella* spp., *Trichoderma* sp., *Epicocum* sp., *Gonatobotrys* sp., *Papularia* sp., *Torula* sp., *Rhyzopus* sp., *Chaetomium* sp., *Trichotecium* sp., *Penicillium* sp., *Aspergillus* sp., *Stachybotrys* sp. (*Tables 3 and 4).*

The fungus species from genus *Alternaria* have a opportunistic character being meet on leaves, fruits or seeds as black spots with concentric area manifested as weak parasite during vegetation period and saprophyte to the plant maturity.

Species *Alternaria alternata* (Fr.) Keissl. frequently manifested in all tested samples of different crops category, the high percentages noticed in rye (26.4%), barley (16.4%), flax (7.5%), peas (7%) and thyme (4.5%) etc. This micromycete is wide spread on seed skin as saprophyte or weak parasite, when the mycelium destroying the brown germ (Raicu, 1978). *Alternaria solani* (Ell. & Mart.), Jones and Grout reported a rate of 3.5% on the tested tomato seeds, causing damage of 40-50% in field and greenhouses in the alternative conditions of high temperature and humidity (Geamăn, 2004).

Cladosporium herbarum (Pers.) Link.& Gray S.F. is emphasized with high frequency in seeds samples of most cereals species (2.2 to 7%) and leaf vegetables (3.5%).

Table 3 – Saprophyte micromycetes identified on cereals, grain legumes and industrial plants, during 2000 - 2016

Saprophyte micromycetes / Host species	Cereals (% of colonies)						
	Zea mays	*Triticum aestivum*	*Hordeum vulgare*	*Avena sativa*	*Secale cereale*	*Sorghum bicolor*	*Panicum miliaceum*
Cladosporium herbarum	3.9	6.6	2.2	7	4.6	0	0
Alternaria alternata	4.5	12.3	16.4	12.2	26.4	1.5	3.5
Cephalosporium acremonium	1.3	0	2.7	0	0	0	0
Stemphylium botryosum	2.3	10.7	7.8	0	17.3	0	0
Acremoniella verucosa	1.5	0	0	0	0	0	0
Epicocum nigrum	1.9	5.9	3.6	1.5	5.3	0	0
Trichoderma viride	0	9.1	2.9	0	10.8	0	0
Gonatobotrys atra	0	4.4	2.6	0	7.1	0	0
Papularia arundinis	0	3	0	0	0.8	0	0
Torula herbarum	0	4.7	0	0	0	0	0
Rhyzopus nigricans	0	2.5	0.3	0	4.8	0	1.2
Chaetomium globulosum	0	2.4	0	0	0	0	0
Acremoniella atra	0	0	2.2	0	0	0	0
Trichotecium roseum	0	0	1.5	0	0	0	0

Saprophyte micromycetes / Host species	Grain legumes (% of colonies)			Fibre crops (% of colonies)	
	Phaseolus sp.	*Pisum sativum*	*Vicia faba*	*Linum usitatissimum*	*Cannabis sativa*
Cladosporium herbarum	0.4	0.7	0	0	0
Alternaria alternata	5.8	7	3.5	7.5	2.5
Stemphylium botryosum	1.1	0.5	1.9	1.5	0
Epicoccum nigrum	1.2	0.7	0	0	0
Acremoniella verucosa	4.5	0	0	0	0
Acremoniella atra	0.3	0	0	0	0
Rhyzopus nigricans	1.8	1.3	1.8	5.2	2.3
Trichotecium roseum	1.4	0	0	0	0

Saprophyte micromycets / Host species	Grain legumes (% of colonies)			Fibre crops (% of colonies)	
	Phaseolus sp.	*Pisum sativum*	*Vicia faba*	*Linum usitatissimum*	*Cannabis sativa*
Penicillium commune	0.1	0.1	0	0.7	0
Aspergillus flavus	0	0	0	0.3	0
Stachybotrys atra	0.1	0.1	0	0	0
Papularia arundinis	0.4	0	0	0	0
Chaetomium globulosum	0.1	0	0	0.2	0

Table 4 - Saprophyte micromycetes identified on vegetables, perennial grasses, aromatic and medicinal plants, during 2000-2016

Crop category	Host species	Saprophyte micromycets	% colonies /species
Solanaceae	*Solanum lycopersicum*	*Alternaria solani*	3.5
		Botrytis cinerea	2.7
		Rhyzopus nigricans	1.2
		Alternaria alternata f.sp.lycopersici	1.5
	Solanum melongena	*Alternaria solani*	0.7
	Hibiscus esculentum	*Alternaria alternata*	0.8
Cucurbits	*Luffa cylindrica*	*Alternaria alternata f.sp. cucurbitae*	1.7
		Stemphylium cucurbitacearum	2.1
	Cucurbita maxima	*Alternaria alternata f.sp. cucurbitae*	1.8
	Cucumis sativus	*Rhyzopus nigricans*	1.5
Leafy vegetables	*Atriplex hortensis*	*Alternaria alternata*	1.5
		Cladosporium herbarum	3.5
Aromatics plants	*Levisticum officinale*	*Alternaria alternata*	1.3
	Satureja hortensis	*Alternaria alternata*	4.5
	Nigella sativa	*Alternaria alternata*	1.8
Medicinal plants	*Sinapis arvensis*	*Alternaria alternata*	1.2
	Calendula officinalis	*Alternaria alternata*	1.9
		Epicoccum nigrum	1.5
Forages	*Setaria italica*	*Alternaria alternata*	1.5
	Lolium perene	*Alternaria alternata*	2.3
		Rhyzopus nigricans	1.6
	Dactylis glomerata	*Alternaria alternata*	2.5
	Trifolium pretense	*Alternaria alternata*	3.5
		Stemphylium sarciniforme	3.8

Being an opportunistic species especially saprophytic with weak parasite character on some crop species, installing especially in years with heavy rainfall on crop cereals, causing qualitative depreciation of spikes and seeds (blackening of the embryo area and the grain top) to late harvesting (Iacob, 2002). In this study, this fungal detected on oats seeds, in percentage of 7%, is highly resistant and long-lived noticed on seeds preserved for 7 years at + 4ºC with significant implications in seed viability loss (Plăcintă and Murariu, 1999).

Stemphylium botryosum (Wallr.), manifested on majority of tested species, the high percentages, highlinting on rye samples (17.3%), wheat (10.7 %), barley (7.8%) and faba bean (1.9%). This saprophytic micromycete being a secundar contaminant sometimes become parasite, especially at the end of growing season, by setting on spikes of cereals, on grain legumes pods, etc., causing the appearance of abnormal germs with low germination power in the field. *Stemphylium sarciniforme* (Cav.) detected on seed clover (3.8%, *Table 4*) show, during vegetation period, the lesions on stems and stalks and the stains on 1-6 mm, with concentric zones, on leaves.

Rhyzopus nigricans (Ehrenberg) is a saprophytic fungal, component of field micoflora, which is invasive in some development conditions on plants or fruits tissues, causing destructive rot during crops transit (Champion, 1997). In the test on agar substrate, on the rye and flax seeds the significant percentages on 4,8% and, respectively, 5,2%, were identify, noticing blackened and rotting germs.

CONCLUSIONS

Parasite and saprophyte micromycetes on incubated seeds of different species stocked in Suceava Genebank, on agar substrate and on blotting paper were determined. These micromycetes are components of field and intermediate micoflora, which are installed after harvesting. The infection frequency of the different genus of micromycetes emphasized in the accomplished health testing the growing of the plantlets numbers with lesions in the coleoptile, the weakened plumule and slim, short and rotten roots. These aspects can be correlated with presence of pathogen fungus from genus: *Fusarium* spp., *Drechslera* spp., *Colletotrichum* spp., *Diplodia* sp. and saprophytes *Alternaria* spp., *Cladosporium* sp., sometimes with low percentages in the germination tests, often being the expression of the seeds health conditions. Longevity and the effect of fungal pathogens in seed germplasm stored on medium and long term should be studied because they can be the source of primary inoculum in seed germination lowering after a period of seed stored, as required the repetitive seed regeneration process, financial losses and genetic erosion. In this regard, to avoid dissemination and losses of genetic material it is necessary the seed health monitoring and control

measures by identifying of heavily contaminated entries, which come from multiplication and regeneration plots, collecting and acquisition sources.

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