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Specialized Section on Standardization of Seed Potatoes

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SILVER SCURF

Submitted by the delegation of the United States

This is a discussion paper on how silver scurf might be reflected in the Standard.

Discussion on UNECE Grade Standards for Silver Scurf.

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There is a request to have a grade standard for silver scurf included in the UNECE Seed Potato Standard.

"The cause of silver scurf is the fungus, *Helminthosporium solani*, which is spread by infected seed pieces and potato debris in soil. The disease can worsen in storage, particularly following 3-4 months of storage and when humidity is above 90%. The symptoms are small, light brown circular spots that tend to grow together and cover large areas of tubers. Sometimes scurf is an olive color from the fungal spores. When lesions are wet, they take on a silvery color that gives the disease its name. Symptoms frequently are found on or near the tuber's stem end. The disease frequently found along with Rhizoctonia (black scurf) disease on tubers. This disease is only a surface problem but never-the-less can cause substantial losses by disfiguring the tuber surface. " (Oregon State University Extension)

The fact that the epidermis is separated from the tuber causes excess moisture loss, resulting in shriveled tubers during and at the end of the storage period.

As with all certification programs a grade standard for silver scurf has to take into consideration the feasibility and concerns of buyer as well as seller. Tubers are infected with silver scurf in the field as well as in storage. When moving seed potatoes out of storage spread of spores is optimal. Chemical treatments are limited. Below are some standards as I have found them.

UNECE Standard: Shrivelled tubers: Tubers which have become excessively dehydrated and wrinkled.

- Pre-basic TC : 0 per cent by weight
- Pre-basic: 0.5 per cent by weight
- Basic and Certified: 1 per cent by weight

Netherlands 3.6 Silver Scurf: Tubers that have become spongy or flabby or are severely wrinkled, because of contamination with silver scurf are not permitted in a seed lot. For seed lots that look suspicious or have a bad appearance in the fall because of contamination with silver scurf, certification may be postponed till **spring**. (Knollen, die slap zijn geworden of sterk zijn gerimpeld ten gevolge van een aantasting door zilverschorft, mogen niet in de partij voorkomen. Bij partijen, die in de herfst al een onooglijke of onbetrouwbare indruk maken ten gevolge van aantasting door zilverschorft, kan de certificering worden uitgesteld tot het voorjaar.)

USA: (d) "Shriveling" -- Damage by shriveling means that the individual potato is more than moderately shriveled, spongy or flabby.

Silver Scurf is countable, when affecting more than 25 percent of the surface at a tolerance of not more than 6 percent for external defects. However in the state

regulations of e.g. North Dakota: **USA/ND**: (d) Potatoes affected by silver scurf are not grade factors.

Canada: (7) In any lot, the number of tubers in the aggregate that are affected by disease and defects, not including light scab, light Rhizoctonia and stem-end discolouration, shall not exceed 5 per cent of the total number of tubers in the lot.
(10) In any lot, at least 98 per cent of tubers shall be firm and well shaped.

England: no provision for silver scurf

Scotland: no provision for silver scurf

France: no provision for silver scurf.

It seems that silver scurf is not part of all grade standards. In the USA silver scurf is part of the federal standard. When researchers indicated that there is no correlation between the percentage of the surface of the tuber affected and the potential contamination towards the rest of the tubers and/or the next crop, the industry in some states pressured to have the tolerance removed from their standards.

Discussion: It is difficult to establish a tolerance that is economically feasible for the seed potato producer since it is a soil borne disease and chemical treatments are limited.

It may be possible to measure the effect of the silver scurf on tubers and accept the tolerance of the UNECE Standard for shrivelled tubers i.e. tubers which have become excessively dehydrated and wrinkled.

Picture1: Symptoms of Silver Scurf (SASA)



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