



## **Alert: *Elsinoë fawcetti*, causal organism of citrus scab, listed as a regulated pest in the European Union**

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On 21 March 2019, the European Commission published Commission Implementing Directive (EU) 2019/523, which amended Annexures I to V of Council Directive 2000/29/EC. In this amendment *Elsinoë fawcetti*, the causal organism of citrus scab in South Africa, is included as a regulated pest. Although no phytosanitary measures are specified, fruit with scab symptoms will be rejected upon arrival in the EU. High levels of interceptions in the EU could lead to specific control measures for scab being stipulated that would have to be applied in future to fruit destined for the EU.

Scab distribution is limited to the coastal and adjacent areas of southern Africa, where suitable rainfall conditions occur during spring. However, under favourable climatic conditions, such as wet rainy periods with high humidity, it can also occur in other areas. Citrus types reported to be susceptible include oranges, lemons, grapefruit and mandarins.

Leaves are most susceptible to infection just as they emerge from the bud, however they become immune before reaching full size. Leaf symptoms appear at first as a protuberance (bump or wart) on the infected side of the leaf with a corresponding indentation or hollow on the opposite side. When leaves approach maturity, the scab pustules are smaller and little or no leaf distortion occurs. At times lesions on the leaves may merge and cover large areas to form corky spots (Fig. 1 and 2).

Infection of young fruit promotes the formation of warty outgrowths on the rind. With infection on more mature fruit, the rind on all cultivars responds by producing pustules raised only slightly above the normal contour of the fruit surface. If heavily infected, these pustules can join to form extensive scabby areas which may crack into platelets as the fruit expands. **The scaly type of scab symptom may be confused with wind scar symptoms.** However, in scab infections, some discrete round pustules are present on the outside of the merged scaly area. On the outside of the affected area, some minute islands of scar tissue may also occur. Fruit remain susceptible to infection for about 3 months after petal fall (Fig. 3 and 4).

Scab lesions on twigs start as small translucent spots that become raised, occurring singly or in groups. With age the lesions become dark olive, due to the growth of saprophytic fungi on the scab surfaces. Twigs may eventually die-back.

Scab overwinters in the tree canopy. Its survival depends on the ability of existing scab pustules to retain their inoculum producing capability until new susceptible **young shoots or fruit appear**. **Young vegetative flush and fruit** should be inspected after rainy periods for the presence of lesions. Given the regulated status of this pest in the EU, growers in all areas are urged to be on the lookout for abovementioned fruit symptoms in their orchards. It is of the utmost importance that no fruit with scab symptoms be packed for export to the EU.



**Fig 1.** Scab lesions as seen on upper leaf surfaces.



**Fig 2.** Scab lesions as seen on lower leaf surface.



**Fig 3.** Severe scab symptoms seen on the fruit surface.



**Fig 4.** Localised scab symptoms on fruit surface.

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## Waarskuwing: *Elsinoë fawcetti*, veroorsakende organisme van sitrus skurf, word in die Europese Unie as 'n gereguleerde pes gelys

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Die Europese Kommissie het op 21 Maart 2019, Implementerings direktief (EU) 2019/523 gepubliseer waarin veranderinge aan Aanhangsels I tot V van die Kommissie direktief 2000/29/EC vervat is. Hierdie veranderinge sluit die lys van *Elsinoë fawcetti*, veroorsakende organisme van sitrus skurf in Suid-Afrika, as 'n gereguleerde pes in. Geen fitosanitêre maatreëls word aangedui nie, maar vrugte met skurf simptome sal wel met aankoms in die EU afgekeur word. Hoë vlakke van onderskeppings in die EU kan aanleiding gee tot die stipulering van spesifieke beheermaatreëls vir skurf wat in toekoms toegepas sal moet word op vrugte wat vir die EU bestem is.

Voorkoms van skurf is beperk tot die kusgebiede en aangrensende binneland van suider-Afrika waar gunstige reënvaltoestande in die lente voorkom. Dit kan egter ook in ander areas voorkom onder gunstige toestande soos nat, reënerige periodes met gepaardgaande hoë humiditeit. Sitrustipes wat aangedui word as vatbaar sluit lemoene, suurlemoene, pomelos en, mandaryne in.

Blare is meer vatbaar vir infeksie as hulle by die blaarknop uitkom en word weerstandbiedend voordat hulle volgroeid is. Blaarsimptome verskyn eerstens as uitgroeisels of knoppe op die besmette kant van die blaar met 'n ooreenstemmende induiking op die ander kant van die blaar. Op verouderende blare is die vrugstrukture van skurf klein en min of geen misvorming van die blare kan voorkom nie. Die letsels op die blare mag soms saamsmelt en groot areas dek om kurkagtige kolle te vorm (Fig. 1 en 2).

Infeksie van jong vrugte bevorder die vorming van vratagtige uitgroeisels op die skil. Met infeksie van meer volwasse vrugte reageer die skil van alle kultivars deur die vorming van vrugstrukture wat effe verheve bokant die vrugoppervlak is. Met swaar besmettings kan hierdie strukture saamsmelt om groot skurfagtige areas te vorm wat kan kraak soos die vrug groei. **Hierdie skubagtige simptome kan met windskade verwar word.** Met skurf-infeksies kan individuele vrugstrukture egter aan die buitekant van die skurfagtige area waargeneem word. Baie klein areas wat

letselweefsel bevat kan om die skurfagtige area voorkom. Vrugte bly vatbaar vir infeksie tot 3 maande na blomblaarval (Fig. 3 en 4).

Skurfletsels op lootjies ontwikkel as klein, deurskynende vlekke wat verheve raak en enkel of in groepe kan voorkom. Met veroudering raak die letsels donker/-olyfkleurig as gevolg van die groei van saprofitiese swamme op die skurfletsels. Die lootjies kan eindelik terugsterf.

Skurf oorwinter in die boom se blaredak. Oorlewing van die patoog hang af van die vermoë van bestaande vrugstrukture om hulle inokulumproduserende vermoë te behou totdat nuwe, vatbare **jong lootjies of vrugte verskyn. Jong vegetatiewe groei en vrugte** moet vir letsels na periodes van reën ondersoek word.

Gegewe die gereguleerde status van die pes in die EU, word produsente in alle areas aangemoedig om op die uitkyk in hulle boorde vir bogenoemde vrugsimptome te wees. Dit is uiters belangrik dat vrugte met skurfsimptome nie vir uitvoer na die EU gepak moet word nie.



**Fig 1.** Skurfletsels soos waargeneem op die bokant van blare.



**Fig 2.** Skurfletsels soos waargeneem op die onderkant van blare.



**Fig 3.** Erge skurfsimptome soos waargeneem op die vrugoppervlak.

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**Fig 4.** Gelokaliseerde skurfsimptome op die vrugoppervlak.