Innovative stored plant products (soy) in Germany and the potential threat by native and invasive pest insects

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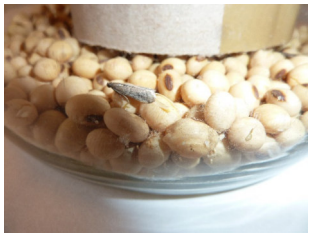
Warehouse moth
Ephestia elutella

Indianmeal moth
Plodia interpunctella

Confused flour beetle
Tribolium confusum

Adzuki bean weevil
Callosobruchus chinensis

Granary weevil
Sitophilus granarius



Tab. 2 Overview of results of different experiments studying the potential risk of common stored product pests to infest **soy** by analyzing the cabability of different moth and beetle species to develop on whole beans, grist and flour of the soy variety (*Sultana*) and measuring the developmental time from egg to adult (F1) compared to standard control substrates.

PEST SON SOY (Sultana)	Development time compared to control (weeks)			Mean n° of hatched adults compared to control (%)			Damage pattern	Risk of infestation
	beans	*grist*	*flour*	*beans*	*grist*	*flour*		green levels: low risk red levels: potential risk
Moths								
P. interpunctella (at 25°C)	>	>	>	**22.1**	**75.7**	**80.1**	Feces Webbing Larvae	High potential to infest soy, especially the processed forms grist and flour. Loss of quality due to moth webs and larvae. Moth develop well.
E elutella (at 25°C)	>>	>>	>>	**20.2**	**57.1**	**54.8**	Living individuals Feces Webbing Larvae	High potential to infest soy, especially the processed forms grist and flour. Moth develop well. Loss of quality due to moth webs and larvae.
Beetles								
T. confusum (at 24°C)	>>>	>>>	>>>	**0.3**	**8.2**	**6.3**	Living individuals Typical smell	Higher risk of infestation on soy grist and flour at warmer temperatures.
C. chinensis (at 25°C)	>>	>>	*X*	**3.1**	**5.0**	*X*	Living individuals Laid eggs No drill holes	Risk of infestation on soy beans and grist increases with increasing temperatres.
C. chinensis (at 22°C)	>>	*X*	*X*	**0.5**	*X*	*X*	"	Very little risk of infestation and only on soy beans.
S. granarius (at 20°C)	*X*	*X*	*X*	*X*	*X*	*X*	None	No expected infestation since beans are too big and without the necessary endosperm.

>: Development time slightly longer than on control substrate (shift ca. 2 weeks)
>>: Development time longer than on control substrate (shift ca. 3 weeks)
>>>: Development time much longer than on control substrate (shift > 5 weeks)
***X*:** No development (no adult individuals hatched)

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