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**ESA PRODUCT SPECIFICATIONS FOR VEGETABLE PRECISION SEEDS –**

These product specifications for germination of precision seeds, varietal purity of precision seeds and seed health requirements are based upon ESA recommended standards.

These product specifications are not meant to be absolute minimum standards for delivery. If the quality tests of *company X* indicate a lower quality-level than given in these specifications, *company X* will inform prospective seed users. This communication is aimed at informing professional seed users about the quality they can expect, so they can make their own assessment and decide if these seeds meet their requirements.

**ESA VEGETABLE SEED PRODUCT SPECIFICATIONS**

Vegetable growing has become a highly specialized and intensive activity. As a result of the ever increasing demand for better quality, vegetable growers and plant raisers require an improved quality of the basic material.

The demand for specific seed forms and more information about seed quality has strongly increased to better influence emergence and required number of plants.

Seed is a natural product. The often varying environmental conditions thus influence final results. It is therefore often not possible to give detailed information about emergence and other physical seed characteristics. To meet the wishes of clients as much as possible *company X* has made up quality standards for the various seed categories.

The germination percentages mentioned are *company X* minimum required figures and made up according to ISTA methods and tolerances.

**GENERAL DEFINITIONS****Normal Seed**

In general, normal seed has not been subjected to special processes. It is sold by weight and/or by count, depending on the product. Normal seed complies with EC standards.

**Precision Seed**

Precision seed has been subjected to additional processes. It has a uniform size and high germination. Precision seed is sold by count.

**Priming**

Priming is defined as an activation of the germination process with the purpose to obtain faster or more uniform emergence after sowing. Primed seed is sold by count.

**Pelleting**

Pelleting is defined as the process of changing the seed form by covering it with a material, the main purpose being to improve uniformity of size and shape resulting in improved sowing ability. Also additional ingredients may be added. Pelleted seed is sold by count.

**Film coating**

Film coating is a full covering, usually pigmented layer, around the seed. The original seed form remains intact. Additional ingredients may be added. Film coating treatments that contain insecticides are normally identifiable by colour coding. Film coated seed is sold by count.

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**Glue coating**

Glue coating is a process which fixes the applied crop protection products in an almost dust free manner to the seed. A pigment may be added.

**Germination**

Germination figures relate to ISTA procedures and are valid at the time of despatch.

**Varietal purity**

Varietal purity rate is defined as: the percentage of plants from a seed lot that meets the variety description.

**ESA PRODUCT SPECIFICATIONS FOR VARIETAL PURITY OF PRECISION SEEDS**

<b>Crop</b>	<b>Minimum % varietal purity for precision seeds</b>
Brassica (Cabbage, Brussels Sprouts, Broccoli, Kohlrabi, Curly Kale, Chinese Cabbage)	93
Cauliflower	90
Cucumber indoor	99
Cucumber outdoor	(excluding pollinators) 98
Cucumber indoor pickling	(excluding pollinators) 98
Cucumber outdoor pickling	(excluding pollinators) 98
Eggplant	98
Lettuce (Butter head, Batavia, Iceberg, Cos)	98
Lettuce (other types)	95
Melon	98
Watermelon	98
Pepper	97
Squash	97
Tomato fresh	98
Tomato processing	95

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**ESA PRODUCT SPECIFICATIONS OF PRECISION SEED AND PELLETS**

<b>Crop</b>		<b>Precision seed</b>	<b>Pellets</b>
<b>Asparagus</b>	germination	85%	
<b>Brassica</b> (Cabbage, Brussels Sprouts, Broccoli, Kohlrabi, Curly Kale, Chinese Cabbage)	germination	90%	
<b>Cauliflower</b>	germination seed size gradation	90% 0,20/0,25 mm	
<b>Dwarf bean</b>	germination 1 unit	85% 100.000 seeds	
<b>Climbing Bean</b>	germination	95%	
<b>Broad Bean</b>	germination 1 unit	85% 25.000 seeds	
<b>Beetroot (monogerm)</b>	germination	80%	
<b>Beetroot (multigerm)</b>	germination seed size gradation	90% 0,50 mm	
<b>Carrot</b>	germination seed size gradation	85% 0,20/0,25 mm	
<b>Celery/Celeriac</b>	germination	90%	90%
<b>Chicory Witloof</b>	germination seed size gradation	85% 0,20/0,25 mm	85%
<b>Corn Salad</b>	germination seed size gradation	85% 0,20/0,25 mm	
<b>Cucumber</b>	indoor, germination outdoor, germination indoor pickling, germination outdoor pickling, germination	92% 92% 92% 88 %	
<b>Eggplant</b>	germination	98%	
<b>Endive</b>	germination	90%	92%

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<b>Fennel</b>	germination seed size gradation	90% 0,20/0,50 mm	90%
<b>Leek</b>	OP germination F1 germination seed size gradation	90% 85% 0,20/0,25 mm	90% 85%
<b>Lettuce</b> Butter head, Batavia, Iceberg, Cos	germination	93%	95%
other types	germination	93%	95%
<b>Melon</b> <b>Charentais type</b>	germination	95%	
<b>Other types</b>	germination	90%	
<b>Onion</b>	Germination seed size gradation 1 unit	90% 2,00-2,75mm 250.000 seeds	
<b>Parsley</b>	germination seed size gradation	87% 0,20/0,25 mm	
<b>Pea</b>	germination	85% - 88%	
<b>Radicchio/Sugarloaf</b>	germination	88%	88%
<b>Radish</b>	germination seed size gradation	92% 0,20/0,25 mm	
<b>Scorzonera</b>	germination	80%	
<b>Spinach</b>	germination seed size gradation	85% 0,75 mm	
<b>Sweet corn</b>	normal sugary germination super sweet germination	90% 85%	
<b>Sweet/Hot pepper</b>	germination	90%	
<b>Squash</b>	germination	92%	
<b>Tomato</b>	germination	92%	
<b>Watermelon</b>	normal type germination seedless type germination	90% 85%	

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**ESA RECOMMENDATION ON SEED HEALTH REQUIREMENTS**

In order to supply sufficiently healthy vegetable seeds and in order to meet the requirements of EU Council Directive 2002/55/EC, *company X* uses various disease risk management strategies to prevent and control seed transmitted diseases. These may include and are not limited to seed health testing programs, protected seed production, field inspections, seed treatments and other effective seed disinfection methods.

ISHI-VEG has developed the Manual of Seed Health Testing Methods, which includes state of the art seed health testing protocols. *Company X* follows the ISHI-VEG recommended minimum sizes of a representative sample for seed health testing.

Information regarding the ISHI-VEG seed health test protocols and recommended minimum sample sizes can be found at:

[http://www.worldseed.org/isf/ishi\\_vegetable.html](http://www.worldseed.org/isf/ishi_vegetable.html)

*(ESA Member companies using this document, are requested to fill in their own company name where in the text "company X" is stated.)*