



APPLICATIONS UNDER EXAMINATION

LUPIN

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(*Lupinus angustifolius*)

Proposed denomination: 'Lunabor'
Application number: 22-10863
Application date: 2022/03/24
Applicant: Saatzucht Steinach GmbH & Co KG, Straubing, Germany
Agent in Canada: Lupin Platform Inc., Calgary, Alberta
Breeder: Regine Dieterich, Saatzucht Steinach GmbH & Co KG, Ankershagen, Germany

Varieties used for comparison: 'Boregine' and 'Probor'

Summary: *Prior to bud emergence, the stem of 'Lunabor' has a very weak to weak intensity of anthocyanin colouration while the stem of 'Boregine' has a medium intensity of anthocyanin colouration and that of 'Probor' has a strong to very strong intensity of anthocyanin colouration. The central leaflet of 'Lunabor' is longer and narrower than that of 'Probor'. The flower wings of 'Lunabor' are violet while the wings of 'Boregine' are white and those of 'Probor' are blue. The tip of the carina on the flower of 'Lunabor' is yellow while it is blue-black for 'Probor'. At green ripening, the height of insertion of the first inflorescence is higher for 'Lunabor' than that of 'Probor'. The plants of 'Lunabor' are taller than those of 'Probor'. The pods of 'Lunabor' are longer than those of 'Probor'. The seed of 'Lunabor' has no ornamentation while the seed of 'Probor' has sparse brown ornamentation. The seed weight of 'Lunabor' is less than that of 'Boregine'.*

Description:

PLANT: indeterminate growth type, mid-season flowering, mid-season green ripening, mid-season ripening

STEM: very weak to weak anthocyanin colouration prior to bud emergence and at flower bud stage

LEAF: medium green prior to bud emergence

FLOWER: violet wings (lateral petals), yellow tip of carina

SEED: non-bitter, white ground colour, ornamentation absent

Origin and Breeding: 'Lunabor' (experimental designation BO 143449/17) originated from the initial cross between the varieties 'Tanjil' and 'Borlu' with two subsequent crosses to the variety 'Haagena' conducted in the winter of 2008 in a glasshouse at the Saatzucht Steinach GmbH & Co KG breeding site in Pomerania, Germany. Using a pedigree breeding method, the variety was advanced from the F1 to F4 generation with rapid early development, plant health, ripening characteristics and resistance to bursting used as selection criteria. Kernel yield testing was conducted on the F5 and F6 generations in 2013 and 2014. The F6 generation was multiplied for the production of breeder seed in 2015.

Tests and Trials: The comparative trial for 'Lunabor' was conducted in Fort Saskatchewan, Alberta, Canada during the 2022 growing season. The trial consisted of 4 replications per variety arranged in a RCB design. Each plot consisted of 6 rows, 4.28 metres in length and spaced 20 cm apart. The planting density was 108 seeds per square metre resulting in a minimum of 2958 plants per variety. Measured characteristics were based on a minimum of 30 measurements per variety except for seed weight which was based on 12 measurements per variety. Mean differences were significant at the 5% probability level based on a paired Student's T-test. Results were supported by the official technical examination report LUB 243, purchased from the Bundessortenamt in Hannover, Germany. The trials were conducted by the Bundessortenamt in Scharnhorst, Germany in 2018 and 2019.

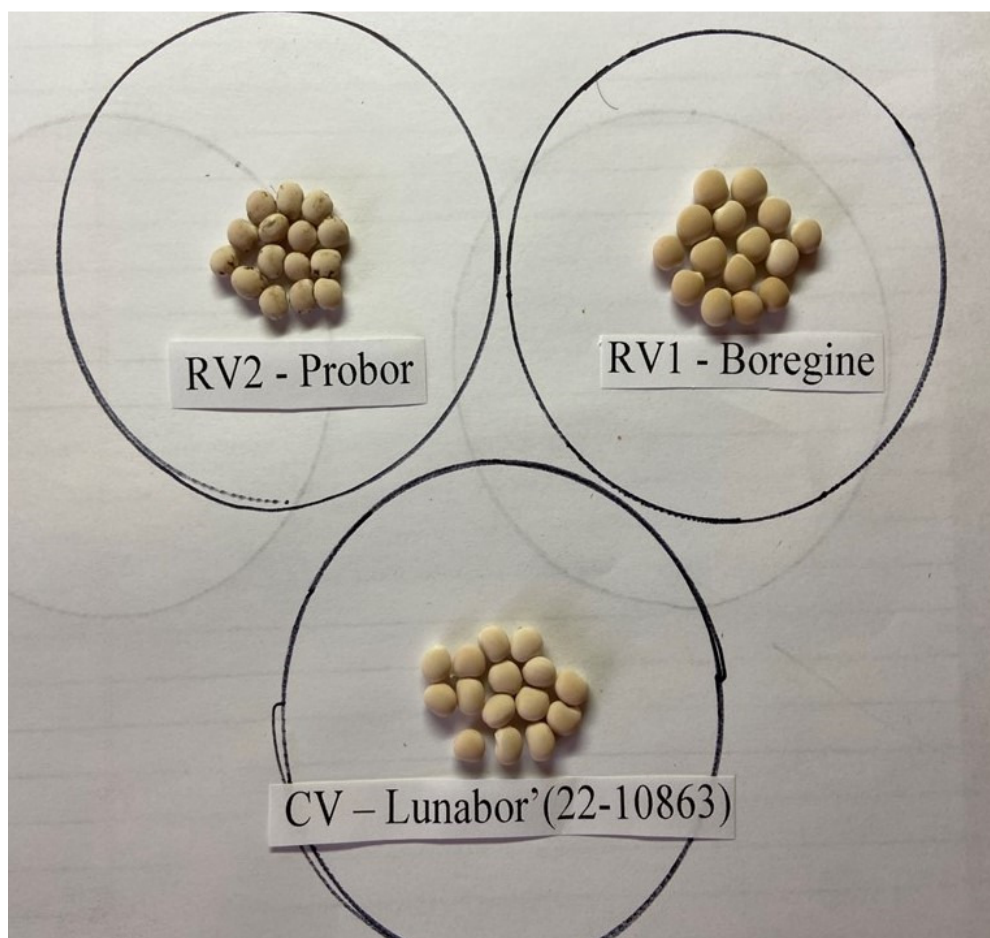
Comparison table for 'Lunabor'

	'Lunabor'	'Boregine'*	'Probor**'
<i>Central leaf length (cm)</i>			
mean	4.14	4.09	3.74
std. deviation	0.40	0.30	0.40
<i>Central leaf width (cm)</i>			
mean	0.43	0.44	0.48
std. deviation	0.07	0.05	0.08
<i>Height of insertion of first inflorescence (at green ripening) (cm)</i>			
mean	41.04	42.09	37.64
std. deviation	6.10	6.50	5.19
<i>Plant height (at green ripening) (cm)</i>			
mean	58.13	60.13	51.47
std. deviation	6.62	6.16	7.47
<i>Pod length (cm)</i>			
mean	6.2	6.2	6.0
std. deviation	0.27	0.42	0.43
<i>Seed weight (grams per 100 seeds) (g)</i>			
mean	154	177	151
std. deviation	9.0	7.4	5.9

*reference varieties



Lupin: 'Lunabor' (left) with reference varieties 'Boregine' (centre) and 'Probor' (right)



Lupin: 'Lunabor' (bottom) with reference varieties 'Probor' (top left) and 'Boregine' (top right)