



## APPLICATIONS UNDER EXAMINATION

BEAN

### BEAN (*Phaseolus vulgaris*)

**Proposed denomination:** 'Eclipse'  
**Application number:** 08-6132  
**Application date:** 2008/01/14  
**Applicant:** NDSU Research Foundation, Fargo, North Dakota, United States of America  
**Agent in Canada:** Duncan Seeds Ltd., Morden, Manitoba  
**Breeder:** Ken Grafton, Fargo, North Dakota, United States of America

**Varieties used for comparison:** 'T39' and 'Black Violet'

**Summary:** 'Eclipse' has stronger more erect stems and branches than the reference varieties. The leaf of 'Eclipse' is a darker green than the reference varieties. 'Eclipse' has a triangular terminal leaflet shape while it is rhombic in 'Black Violet'. The pubescence on the lower side of the secondary leaflets of 'Eclipse' is denser than in 'T39'. 'Eclipse' has a weaker degree of curvature of the pod than 'T39'. The distribution of the pods in the plant of 'Eclipse' are mainly high in the plant while they are located low in the plant in the reference varieties. 'Eclipse' has a duller seed coat lustre than 'Black Violet'.

#### Description:

PLANT: indeterminate growth habit with strong and erect stem and branches

LEAF: dark green, medium rugosity

TERMINAL LEAFLET: triangular shaped, medium acuminate apex

SECONDARY LEAFLET: medium pubescence on lower side

FLOWER: partly in foliage at full flowering, medium sized bracts, violet standard, pale violet wings

POD: green pigmentation, sparse flecks, slight curvature, pointed tip, medium length beak, absent to very weak curvature of beak, medium prominence of grains, smooth surface, absent or very light constrictions at dry stage, distributed mainly high on the plant

SEED: elliptic shape of median longitudinal section, elliptic shape in cross section, single coloured, black, weak veining, white hilar ring, dull lustre

**Origin and Breeding:** 'Eclipse', which was tested as ND9902621-02, is a selection from the cross of Tararagua / Nighthawk // Navigator. The final cross took place in 1996 in a greenhouse in Fargo, North Dakota. The F1 population (97-255) was grown in Erie, North Dakota in 1997. The F2 population was grown near Hatton, North Dakota in 1998. Single plant selections were made in the F2 based on pod load, plant vigour, early maturity and lack of foliar diseases. The F2:3 line was entered in an off-season nursery in Isabela, Puerto Rico during the winter of 1998-1999. Line -05 was selected as an F2:3 row for vigour, productivity, lack of visible foliar pathogens and maturity at this winter nursery site. The row was harvested in bulk and F2:4 seed was planted in three North Dakota sites in a row arrangement in 1999. Single plant selections were made in a row at Hatton, North Dakota based on visual appearance for pod load, maturity, plant growth habit and disease symptoms. Line ND9902621 was then grown as an F4:5 lone in an off season nursery in Isabela, Puerto Rico. Simultaneous evaluation for reaction to Bean Common Mosaic Virus and race 53 and indigenous races of bean rust present in North Dakota were made in a greenhouse in Fargo, North Dakota. Selection of this row was based on visual performance and apparent lack of disease pressure. Selection -02 was bulk harvested in Puerto Rico as an F4:6 and entered into Preliminary Yield Tests in North Dakota in 2000, and in advanced Tests in 2001. In 2001-02, seed from 100 plants (F4:7) were grown near Hatton, North Dakota and evaluated. Uniform rows were identified and 200 plants from 30 rows were selected with the harvested seed (F4:8) bulked to form the breeder seed of ND9902621-02.

**Tests and Trials:** Test and trials were conducted in the summer of 2008 in Morden, Manitoba. Plots consisted of 4 rows with a row spacing of 60 cm and a row length of 5 meters. Plants within a row were spaced about 5 cm apart. There were 3

replicates. The tests and trials for 'Eclipse' were supported by the test report purchased from the Plant Variety Protection Office, Beltsville, Maryland, USA PVPO# 200500293.

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Bean: 'Eclipse'



Bean: Reference variety 'Black Violet'



Bean: Reference variety 'T39'

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