

Effect of Origin, Moisture Content, Maturity, and Mechanical Damage on Seed and Seedling Vigor of Beans¹

Soesarsano Wijandi and L. O. Copeland²

Each year a substantial portion of the dry edible bean (*Phaseolus vulgaris* L.) acreage in the Upper Great Lakes region of Michigan, New York and Ontario, Canada is planted with seed produced in the western United States, particularly Idaho and California. Most of the seed brought from the West is that of large-seeded, colored bean cultivars although there is interest in increasing the use of western-produced navy bean seed.

These studies compared the laboratory and field performance of hand-threshed Michigan and Idaho-grown seed of field beans (navy type), cultivar 'Seafarer,' following mechanical impaction at various moisture levels. Michigan-produced seed exhibited less reduction in germination and seedling vigor than Idaho-grown seed after impaction at comparable moisture levels.

The level of injury increased as the seed moisture content decreased, but was significant at all moisture levels. Planting injury to seed was reduced by pretreating with talc, graphite, and diesel fuel; however, diesel fuel adversely affected seed germination.

Significant reductions in germination and seedling vigor were observed in seed harvested prior to complete maturity.

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² Respectively, former graduate student (now Instructor, Faculty of Agricultural Product Technology, Bogor Agricultural University, Bogor, Indonesia) and Associate Professor, Department of Crop and Soil Sciences, Michigan State University, East Lansing, MI 48824.

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