

PI 574638 **origin:** United States. **cultivar:** PLH1. **pedigree:** Resistant wild H. annuus plants X HA 89. F1 plants resistant to downy mildew race 4 backcrossed to cms HA 89. Resistant male-fertile BC1F1 plants backcrossed to HA 89. Resistant BC2F1 and BC2F2 plants self-pollinated. **remarks:** Most plants single-headed and self-compatible. Plant height 1.5m. Seeds either black or black with white stripes, 1,000 seed weight of 37g. 87.5% cultivated H. annuus and 12.5% wild H. annuus nuclear genes in HA 89 cytoplasm. BC2F3 generation has dominant sunflower downy mildew race 4 resistance genes at approximately 50%. Also has dominant fertility restoration gene(s), for the cms PET-1 cytoplasm, derived from respective wild H. annuus accessions at an approximate frequency of 25%. Spring Annual. Breeding Material. Seed.

PI 574639 **origin:** United States. **cultivar:** PLH2. **pedigree:** Resistant wild H. annuus plants X HA 89. F1 plants resistant to downy mildew race 4 backcrossed to cms HA 89. Resistant male-fertile BC1F1 plants backcrossed to HA 89. Resistant BC2F1 and BC2F2 plants self-pollinated. **remarks:** Most plants single-headed and self-compatible. Plant height 1.5m. Seeds either black or black with white stripes, 1,000 seed weight of 37g. 87.5% cultivated H. annuus and 12.5% wild H. annuus nuclear genes in HA 89 cytoplasm. BC2F3 generation has dominant sunflower downy mildew race 4 resistance genes at approximately 50%. Also has dominant fertility restoration gene(s), for the cms PET-1 cytoplasm, derived from respective wild H. annuus accessions at an approximate frequency of 25%. Spring Annual. Breeding Material. Seed.

PI 574640 **origin:** United States. **cultivar:** PLH3. **pedigree:** Resistant wild H. annuus plants X HA 89. F1 plants resistant to downy mildew race 4 backcrossed to cms HA 89. Resistant male-fertile BC1F1 plants backcrossed to HA 89. Resistant BC2F1 and BC2F2 plants self-pollinated. **remarks:** Most plants single-headed and self-compatible. Plant height 1.5m. Seeds either black or black with white stripes, 1,000 seed weight of 37g. 87.5% cultivated H. annuus and 12.5% wild H. annuus nuclear genes in HA 89 cytoplasm. BC2F3 generation has dominant sunflower downy mildew race 4 resistance genes at approximately 50%. Also has dominant fertility restoration gene(s), for the cms PET-1 cytoplasm, derived from respective wild H. annuus accessions at an approximate frequency of 25%. Spring Annual. Breeding Material. Seed.