



MG 509: Vipen Sawhney fonds

Dates: 1965-2014

Extent: 3.2 m. of textual records and photographs (prints, slides and negatives) and microscopic slides. – 2.57GB of graphic material

Biography: Vipen Sawhney was born in 1944 and earned a B.Sc (1965) and M.Sc (1967) from the University of Panjab and Ph.D (1972) from the University of Western Ontario. He accepted a postdoctoral fellowship at Simon Fraser University in 1972 before coming to the University of Saskatchewan in 1975. Dr. Sawhney rose through the ranks serving as the Rawson Professor of Biology and Department Head from 2003-2007. In addition to his U of S appointment, he has been a visiting Professor and Fellow several times. Dr. Sawhney maintained a first rate research program throughout his career co-editing a book and authoring more than a hundred refereed papers. He is an internationally recognized plant geneticist focussing on understanding the processes and mechanisms controlling flower and pollen development in angiosperms using floral and male-sterile mutants in tomato, canola (*Brassica napus*) and *Arabidopsis*. By using microscopic, physiological (hormonal and environmental) and proteomic approaches, Dr. Sawhney has investigated the various factors, and their possible interactions, in plant developmental processes. His research on male sterility in tomato has been applied in the hybrid seed industry. He has received many awards and honours including the Master Teacher 2007, Earned Doctor of Science 2010 and the Award of Innovation from the University of Saskatchewan. He served as the President, Canadian Botanical Association, 2004-2006, President, International Association of Sexual Plant Reproduction and Research, 1998-2002 and Vice-President, Canadian Botanical Association, 1998-1999.

Scope and Content: The material in this fonds documents the teaching and research career of Vipen Sawhney. The teaching material includes lecture notes, course outlines, teaching slides and examinations. The research material contains correspondence, notes, articles by Sawhney and others, slides, negatives, photographs and microscope glass slides.

Arrangement: This fonds has been organized in to five series.

- I. Professional activities - general. – 1976-2013.
- II. Collection of Articles. – 1964-2009.
- III. Teaching material. – nd, 1975-2013.
- IV. Research publication. – 1968-2012.
- V. Microscopic slides and research material. – 1968-1981.

Restrictions: Some restrictions apply. Please consult with the archivist.

Box 1**I. Professional activities - general. – 1976-2013.**

Correspondence; editorial work; manuscripts reviewed Grant applications; and CV.

Sawhney CV – June 1, 2013. – **RESTRICTED**

Nomination of Professor Vipen Sawhney for the University of Saskatchewan Master Teacher Award. – 2004.

Nomination package.

NSERC grant applications. – 1979-2010.

Forms and correspondence.

Canola Council of Canada. – 1988-1990.

Correspondence and reports.

Agriculture Development Fund grant. – 189-192.

Forms and correspondence.

Saskatchewan Canola Development Commission. – 2000-2011.

Correspondence and reports.

Manuscripts received by Sawhney. – 1976-1999.

Correspondence and review comments.

Correspondence with colleagues. – 1993-2001.

To and from Sawhney regarding research and letters of recommendation

Canadian Journal of Botany. – 1989-1993.

Sawhney was associate editor 1989-1990. Correspondence regarding submissions and editor matters.

Canadian Botanical Association (CBA). – 2004-2006.

Correspondence, minutes and agenda. Sawhney was President, 2004-2006.

International Association of Sexual Plant Reproduction Research (IASPRR). – 1999-2002.

Correspondence and agenda regarding board and general meetings.

Box 2

Canadian Botanical Association (CBA). – 1998. - 2 folders

Correspondence, invoices and minutes regarding organization, fund raising and annual meeting that was held in Saskatoon.

Biology Department Centennial Homecoming event. -2007.
Correspondence, notes and lists. Sawhney was the organizer.

International Association of Sexual Plant Reproduction Research (IASPRR). – 2000. – 2 folders.
Correspondence and invoices regarding organization and fund raising for the conference held in Banff. Sawhney was co-organizer.

II. Collection of Articles. – 1964-2009.

Collection of review articles on Gibberellins. – 1968-2003.
Articles by others.

Collection of articles on Gibberellins analyses and physiology. – 1969-2002.
Articles by others.

Collection of articles on genetic control and physiology of gibberellins. – 1978-2003.
Articles by others.

Collection of articles on gibberellins and light. – 1965-1975.
Articles by others.

Collection of articles on gibberellins mutants. – 1965-1975.
Articles by others.

Collection of articles on gibberellins – biosynthesis, physiology interaction and metabolism. – 1964-1977.
Articles by others.

Box 3

Pollen development literature and role of tapetum. – 1967-2010.
Articles by others.

Collection of papers on pollen germination. – 1964-2007.
Articles by others.

Collection of papers on pollen proteomic. – 2001-2012.
Articles by others.

Male sterility in plants – articles. – 1974-1991.
Articles by others.

Collection of papers on developmental studies on male sterility in plants. – 1966-1992.
Articles by others.

Collection of papers on cytoplasmic male sterility in plants. – 1970-2009.

Articles by others.

Hormonal and chemical control of pollen development and male sterility. – 1972-1997.

Articles by others.

Male sterility in plants – molecular studies. – 1991-2009.

Articles by others.

Collection of papers on genetic engineering of male sterility in plants. – 1990-1996.

Articles by others.

Box 4

III. Teaching material. – nd, 1975-2013.

Biological Sciences (Living Earth) 100.6. – 1980-1986.

Course outline and hand written notes.

Biology 110.6 (introductory). – 1995-2005.

Course outline, illustrations and hand written notes.

Biology 202.3 (Botany). – 1985-2001.

Course outline, illustrations and hand written notes.

Biology 202 (taxonomy). – nd.

Course outline and hand written notes.

Biology 222.3 (living plant). – 2011-2013. – 3 folders.

Handwritten notes.

Biology 331.3 (plant physiology) – Part 1. – 1981.

Course outline, illustrations and handwritten notes.

Biology 331.3 (plant physiology) – Part 2. – 1981.

Illustrations and handwritten notes.

Anatomy 200.3 (cell biology). – 1983.

Illustrations and handwritten notes.

Biology 326.3. – 1976-1984.

Illustrations and hand written notes.

Biology 205 (Lower Vascular Plant). – nd.
Hand written notes.

Biology 325.3 – Part 1. – nd.
Hand written notes.

Biology 325.3 – Part 2. – 1981.
Illustrations and hand written notes.

Biology 203 (Botany). – 1975.
Illustrations and hand written notes.

Box 5

Course outlines. – 1977-2013.
Biology 100.6, 111.6, 120.3, 202.3, 222.3, 325.3 and 326.3.

Biology 120.3. 4 folders. – 1999-2008.
Illustrations and hand written notes.

Biology 326 – Part 1. – 1993-2012. – 5 folders.
Hand written notes.

Biology 326 – Part 2. – 2004. – 4 folders.
Illustrations and hand written notes.

Biology 325.3 (Perspectives in Biology). – 1985-1999. – 4 folders.
Notes, course outlines and articles.

Course outlines. – 1981-2013.
Biology 832, 836, 898, 890 and 831.

Lab manuals. – 2001-013.
Biology 2.2.3, 325.3 and 326.3.2.

Examinations. – 1978-2014. – 5 folders.
Biology 110.6, 202.3, 222.3, 325.3 and 326.3.

Box 6

Teaching slides. – nd. – 2 folders.
Cell biology and genetics.

Teaching slides. – nd.

Lower Vascular Plant and gymnosperms.

Teaching slides. – nd. – 2 folders.

Plant shoot apex, plant cells and tissues, plant anatomy and plant secondary growth.

Teaching slides. – nd.

Plant embryos and development, flowers, floral organs, flower development and plant reproduction.

Teaching images and research seminars. – 2008. 2008-2013. – 1 8 GB memory stick, memory stick (2.57GB) Approx. 80 PowerPoint presentations: Biology 110.6, 22.3, 325.3, 326.3, 120; research seminars. Also includes course outline and exam for Biology 325.3.

(Transferred to Digital Originals location on network drive)

Box 7

IV. Research publication. – 1968-2012.

V.K. Sawhney and P.L. Polowick. 1985. Fruit development in tomato: The role of Temperature. Canadian Journal of Botany 63: 1031-1034.

Correspondence, article and photographs.

V.K. Sawhney “Temperature effects on male fertility and flower and fruit development in pepper (*Capsicum annum*)”. – 1984. *Scientia Horticulturae*

Correspondence, article and photographs.

V.K. Sawhney “Plant Morphogenesis”. – 1985. 6th Edition of the Science and Technology Encyclopedia”

Correspondence and article.

V.K. Sawhney and K.N. Chandra Sekhar, 1985. Periclinal and oblique divisions in the surface layer of the shoot apex of tomato (*Lycopersicon esculentum*). Canadian Journal of Botany 63: 1564-1566.

Correspondence, article and photographs.

V.K. Sawhney, K. Chen and I.M. Sussex, 1985. Soluble proteins of the mature floral organs of tomato (*Lycopersicon esculentum*). *Journal of Plant Physiology* 121: 265-271.

Correspondence, article, negatives and photographs.

K.N. Chandra Sekhar and V.K. Sawhney, 1985. Ultrastructure of the shoot apex of tomato (*Lycopersicon esculentum*). *American Journal of Botany* 72: 1813-1822.

Correspondence, article, negatives and photographs.

V.K. Sawhney Gibberellins and fruit formation in the tomato: A review. – 1993-1984. *Scientia Horticulturae*.

Correspondence, article, negatives and photographs.

V.K. Sawhney and J.M. Naylor, 1982. In vitro studies on the dormancy of excised axillary buds of *Tradescantia paludosa*. *Journal of Plant Growth Regulation*: 49-59.

Correspondence, article and photographs.

K.N. Chandra Sekhar and V.K. Sawhney. 1984. A scanning electron microscope study of the development and surface features of floral organs of tomato (*Lycopersicon esculentum*). *Canadian Journal of Botany* 62: 2403-2413.

Correspondence, article and photographs.

V.K. Sawhney, 1983. The role of temperature and its relationship with gibberellic acid in the development of floral organs of tomato (*Lycopersicon esculentum*). *Canadian Journal of Botany* 61: 1258-1265.

Correspondence, article, negatives and photographs.

V.K. Sawhney, 1983. Temperature control of male sterility in a tomato mutant. *Journal of Heredity* 74: 51-54

Correspondence, article, negatives and photographs.

V.K. Sawhney, P.J. Rennie and T.A. Steeves, 1981. The Ultrastructure of the Central Zone Cells of the Shoot Apex of *Helianthus annuum*. *Canadian Journal of Botany* 59: 2009-2015.

Correspondence, article and photographs.

V.K. Sawhney, 1981. Abnormalities in Pepper (*Capsicum annuum* L.) Flowers Induced by Gibberellic Acid. *Canadian Journal of Botany*, 59: 8-16.

Correspondence, article, negatives and photographs.

V.K. Sawhney and R.I. Greyson, 1979. Interpretations of Determination and Canalisation of Stamen Development in a Tomato Mutant. *Canadian Journal of Botany* 57: 2471-2477.

Correspondence, article and photographs.

V.K. Sawhney and L.M. Srivastava, 1977. Comparative Effects of Cytochalasin B and Colchicine on Lettuce Seedlings. *Annals of Botany* 41: 271-274.

Correspondence and article.

V.K. Sawhney, L.M. Srivastava and D. Morley, 1977. Inhibitors of RNA and Protein Synthesis and the Kinetics of Gibberellic Acid-Induced Growth of Lettuce Hypocotyls. *Canadian Journal of Botany* 55: 1829-1837.

Correspondence, article, negatives and photographs.

V.K. Sawhney and L.M. Srivastava, 1974. Gibberellic Acid Induced Elongation of Lettuce Hypocotyls and Its Inhibition by Colchicine. *Canadian Journal of Botany* 52: 259-264.

Correspondence, article, negatives and photographs.

V.K. Sawhney Lettuce Hypocotyl: A useful system for the study of plant organ growth. – 1974.

Canadian Journal of Botany.

Article, negatives and photographs.

V.K. Sawhney, 1974. Morphogenesis of the Stamenless-2 Mutant of Tomato. III. Relative Levels of Gibberellins in the Normal and Mutant Plants. *Journal of Experimental Botany* 25: 1004-1009.

Correspondence, article, negatives and photographs.

V.K. Sawhney, “Morphogenesis of the Stamenless-2 mutant in tomato. III. Relative levels of gibberellins in the normal and mutant plants”. – 1974.

Correspondence and article.

V.K. Sawhney Growth correlation studies between sepals and stamens of stamenless mutants and wild type. – 1974.

Botanical Gazette – correspondence and article.

V.K. Sawhney, 1974. Morphogenesis of the Stamenless-2 Mutant of Tomato. III. Relative Levels of Gibberellins in the Normal and Mutant Plants. *Journal of Experimental Botany* 25: 1004-1009.

Correspondence, article and photograph.

V.K. Sawhney and R.I. Greyson, 1972. Fruit Size Increase in Tomato through the Application of Gibberellic Acid. *Journal of the American Society of Horticulture Science* 97: 589-590.

Correspondence and review notes.

V.K. Sawhney and R.I. Greyson, 1972. On the Initiation of the Inflorescence and Floral Organs in Tomato (*Lycopersicon esculentum*). *Canadian Journal of Botany* 50: 1493-1495.

Article, correspondence and photographs.

V.K. Sawhney and R.I. Greyson, 1971. Induction of Multilocular Ovary in Tomato by Gibberellic Acid. *Journal of the American Society of Horticulture Science* 96: 196-198.

Correspondence, article and review notes.

V.K. Sawhney The use of tomato mutants in studies of flower development. – 1969.

Article and diagram.

V.K. Sawhney, 1968. Observations on the Occurrence of Sporophytic Characters in the Gametophytes of *Adiantum lunulatum*. *Canadian Journal of Botany* 47: 1160-62.

Article, correspondence and photographs.

Box 8

A. Shukla and V.K. Sawhney. 1991. Comparative regenerative ability of internodal segments of wild type and a genie male sterile line of rapeseed (*Brassica napus*) cultured in vitro. *Plant Science* 79: 95-98.

Correspondence and article.

V.K. Sawhney "Floral mutants as tools in physiological, biochemical and developmental analyses of flower development: stamenless-2 mutant in tomato – a case History". - 1991.

Correspondence and article.

S.K. Bhadula and V.K. Sawhney. 1991. Protein analysis during the ontogeny of normal and male sterile stamenless-2 mutant stamens of tomato (*Lycopersicon esculentum* Mill.). *Biochemical Genetics* 29: 29-41.

Correspondence, article, negative and photograph.

Chandra Sekhar and V.K. Sawhney. 1991. Role of ABA in stamen and pistil development in the normal and solanifolia mutant of tomato (*Lycopersicon esculentum*). *Sexual Plant Reproduction* 4: 279-283.

Correspondence and article.

P.L. Polowick and V.K. Sawhney. 1990. Microsporogenesis in a normal and in the ogu cytoplasmic male sterile line of *Brassica napus*. I. The influence of high temperatures. *Sexual Plant Reproduction* 3: 263-276.

Correspondence, photographs and article.

K.N. Chandra Sekhar and V.K. Sawhney. 1990. Regulation of the fusion of floral organs by temperature and gibberellic acid in the normal and solanifolia mutant of tomato (*Lycopersicon esculentum*). *Canadian Journal of Botany* 68: 713-718.

Article, correspondence, negatives and photographs.

R. Rastogi and V.K. Sawhney. 1990. Polyamines and flower development in the male sterile stamenless-2 mutant of tomato (*Lycopersicon esculentum* Mill.). I. Level of polyamines and their biosynthesis in normal and mutant flowers. *Plant Physiology (U.S.)* 93: 439-445.

Correspondence, article, floppy disc, negative and photographs.

P.L. Polowick, R. Bolaria and V.K. Sawhney. 1990. Stamen ontogeny in the temperature-sensitive 'stamenless-2' mutant of tomato (*Lycopersicon esculentum* L.). *New Phytologist* (7 printed pages, accepted April 24, 1990).

Correspondence, article and photographs.

S.A. Maclsaac and V.K. Sawhney. 1990. Protein changes associated with auxin-induced stimulation and kinetin-induced inhibition of lateral root initiation in lettuce (*Lactuca sativa*) roots. *Journal of Experimental Botany* (17 manuscript pages + 4 figures, accepted Mar. 9, 1990).
Correspondence, articles, negatives and photographs.

S.A. Maclsaac, V.K. Sawhney and Y. Pohorecky. 1989. Regulation of lateral root formation in lettuce (*Lactuca sativa*) seedling roots: Interacting effects of α -naphthaleneacetic acid and kinetin. *Physiologia Plantarum* 77: 287-293.
Correspondence, articles, negatives and photographs.

V.K. Sawhney "Protein analysis of floral organs of some members of solanaceae". – 1988.
Correspondence, article and photographs.

V.K. Sawhney "In vitro flower development in angiosperms: A review". – 1988.
Correspondence, article and photographs.

S.K. Bhadula and V.K. Sawhney, 1989. Amylolytic activity and carbohydrate levels during the stamen ontogeny of a male fertile, and a 'gibberellin-sensitive' male sterile mutant of tomato (*Lycopersicon esculentum*). *Journal of Experimental Botany* 40: 789-794.
Correspondence, article and photographs.

R. Rastogi and V.K. Sawhney, 1988. Suppression of stamen development by CCC and ABA in tomato floral buds cultured in vitro. *Journal of Plant Physiology* 133: 620-624.
Correspondence, article and photographs.

R. Rastogi and V.K. Sawhney, 1988. Flower culture of a male sterile stamenless-2 mutant of tomato. *American Journal of Botany* 75: 513-518.
Correspondence, article and photographs.

R. Rastogi and V.K. Sawhney, 1988. In vitro culture of stamen primordia of the normal and a male sterile stamenless-2 mutant of tomato. *Journal of Plant Physiology* 133: 349-352.
Correspondence, article and photographs.

K.N. Chandra Sekhar and V.K. Sawhney. 1990. Leaf development in the normal and solanifolia mutant of tomato (*Lycopersicon esculentum*). *American Journal of Botany* 77: 46-53.
Correspondence, article and photographs.

V.K. Sawhney and S.K. Bhadula, 1988. Microsporogenesis in the normal and male-sterile stamenless-2 mutant of tomato. *Canadian Journal of Botany* 66: 2013-2021.
Correspondence, articles, negatives and photographs.

P.L. Polowick and V.K. Sawhney, 1988. High temperature induced male and female sterility in canola (*Brassica napus* L.). *Annals of Botany* 62: 83-86.
Correspondence, articles and negatives.

S.K. Bhadula and V.K. Sawhney, 1987. Esterase activity and isozymes during the ontogeny of stamens of male fertile *Lycopersicon esculentum* Mill. male-sterile stamenless-2 mutant and the low temperature-reverted mutant. *Plant Science* 52: 187-194.

Correspondence, articles, negatives and photographs.

R. Rastogi and V.K. Sawhney, 1987. The role of plant growth regulators, sucrose and pH in the development of floral buds of tomato (*Lycopersicon esculentum*) cultured in vitro. *Journal of Plant Physiology* 128: 285-295.

Correspondence and article.

V.K. Sawhney and S.K. Bhadula, 1987. Characterization and temperature regulation of soluble proteins of a male sterile tomato mutant. *Biochemical Genetics* 25: 717-728.

Correspondence, articles, negatives and photographs.

V.K. Sawhney and P.L. Polowick, 1986. Temperature-induced modifications in the surface features of stamens of a tomato mutant: An SEM study. *Protoplasma* 131: 75-81.

Correspondence, articles, negatives and photographs.

K.N. Chandra Sekhar and V.K. Sawhney, 1987. Ontogenetic study of the fusion of floral organs in the normal and *solanifolia* mutant of tomato. *Canadian Journal of Botany* 65: 215-221.

Correspondence, articles, negatives and photographs.

R. Rastogi and V.K. Sawhney, 1986. *In vitro* culture of young floral buds of tomato (*Lycopersicon esculentum* Mill.). *Plant Science* 47: 221-227.

Correspondence, article and photographs.

P.L. Polowick and V.K. Sawhney, 1986. A scanning electron microscopic study on the initiation and development of floral organs of *Brassica napus*. *American Journal of Botany* 73: 254-263.

Correspondence, articles, negatives and photographs.

V.K. Sawhney. "A scanning electron microscopic study on the initiation and development of floral organs of *Brassica napus* L". – 1986.

Canadian Journal of Botany - Correspondence.

V.K. Sawhney and E.B. Nave, 1986. Enzymatic changes in post-meiotic anther development in *Petunia hybrida*. II. Histochemical localization of esterase, peroxidase, malate- and alcohol-dehydrogenase. *Journal of Plant Physiology* 125: 467-473.

Correspondence, articles, negatives and photographs.

Box 9

L.M. Blahut-Beatty, P.C. Bonham-Smith and V.K. Sawhney. 1998. Induction of filamentous structures in wild type *Antirrhinum majus* flowers by benzylaminopurine. *Canadian Journal of Botany* 76: 1828-1834.

Correspondence and article.

S. Singh and V.K. Sawhney. 1998. Abscisic acid in a male sterile tomato mutant and its regulation by low temperature. *Journal of Experimental Botany* 49: 199-203.

Correspondence, articles and negatives.

S.P. Venglat and V.K. Sawhney. 1997. "Cytokinin regulation of floral meristem identity in *Arabidopsis*".

Correspondence, article and photographs.

K.H. Lo, K.L. Giles and V.K. Sawhney. 1997. Acquisition of competence for shoot regeneration in leaf discs of *Saintpaulia ionantha* x *confusa* hybrids (African violet) cultured in vitro. *Plant Cell Reports* 16: 416-420.

Correspondence and article.

A.R. Davis, L.C. Fowke, V.K. Sawhney and N.H. Low. 1996. Floral nectar secretion and ploidy in *Brassica rapa* and *B. napus* (Brassicaceae). II. Quantified variability of nectary structure and function in rapid-cycling lines. *Annals of Botany* 77: 223-234.

Correspondence and article.

S.P. Venglat and V.K. Sawhney. 1996. "Plant growth substances and the genetic control of flower development".

Correspondence and article.

A. Shukla and V.K. Sawhney. 1997. Cytokinin metabolism and cytokinin oxidase and adenine phosphoribosyltransferase activity in male sterile *Brassica napus* leaves. *Phytochemistry* 44: 337-381.

Correspondence and article.

S.P. Venglat and V.K. Sawhney. 1996. Benzylaminopurine induces phenocopies of floral meristem and organ identity mutants in wild-type *Arabidopsis* plants. *Planta* 198: 480-487.

Correspondence and article.

G.U. Rao, K.R. Shivanna and V.K. Sawhney. 1995. High temperature tolerance of *Petunia* and *Nicotiana* pollen. *Current Science* 69: 351-355.

Correspondence and article.

K.R. Shivanna and V.K. Sawhney. 1995. Polyethylene glycol improves the in vitro growth of Brassica pollen tubes without loss in germination. *Journal of Experimental Botany* 46: 1771-1774.

Correspondence and article.

P.L. Polowick and V.K. Sawhney. 1995. Ultrastructure of the tapetal cell wall in the stamenless-2 mutant of tomato (*Lycopersicon esculentum*): Correlation between structure and male sterility. *Protoplasma* 189: 249-255.

Correspondence and article.

V.K. Sawhney and A. Shukla. 1994. Male sterility in flowering plants: are plant growth substances involved? *American Journal of Botany* 81(12): 1640-1647.

Correspondence, articles, negatives and photographs.

A.R. Davis, V.K. Sawhney, L.C. Fowke and N.H. Low. 1994. Floral nectar secretion and ploidy in *Brassica rapa* and *B. napus* (Brassicaceae). I. Nectary size and nectar carbohydrate production and composition. *Apidologie* 25: 602-614.

Correspondence and article.

A. Shukla and V.K. Sawhney. 1994. Abscisic acid: one of the factors affecting male sterility in *Brassica napus*. *Physiologia Plantarum* 91: 522-528.

Correspondence, articles and photographs.

V.K. Sawhney. 1994. "Plant Morphogenesis" Eight edition of the McGraw Hill Encyclopaedia of Science and Technology. 669-670.

Correspondence and article.

V.K. Sawhney and A. Shukla. 1994. Male sterility in flowering plants: are plant growth substances involved? *American Journal of Botany* 81(12): 1640-1647.

Correspondence and article.

P.L. Polowick and V.K. Sawhney. 1993. An ultrastructural study of pollen development in tomato (*Lycopersicon esculentum* Mill.). II. Pollen maturation. *Canadian Journal of Botany* 71: 1039-1047.

Correspondence and article.

V.K. Sawhney. 1994. "Genic male sterility in tomato and its manipulation in breeding". Kluwer academic publishers.

Correspondence and article.

P.L. Polowick and V.K. Sawhney. 1993. Differentiation of the apertum during microsporogenesis in tomato (*Lycopersicon esculentum* Mill.), with special reference to the tapetal cell wall. *Annals of Botany* 72: 595-605.

Correspondence and article.

S.P. Venglat and V.K. Sawhney. 1994. Ectopic formation of trichomes and stomata in floral organs of *Arabidopsis thaliana* induced by thidiazuron. Canadian Journal of Botany 72: 671-677.

Correspondence and article.

Y. Ma, V.K. Sawhney and T. A. Steeves. 1993. Staining of paraffin embedded plant material in safranin and fast green without prior removal of the paraffin. Canadian Journal of Botany 71: 996-999.

Correspondence and article.

S. Singh and V.K. Sawhney. 1992. Plant hormones in *Brassica napus* and *Lycopersicon esculentum* pollen. Phytochemistry 31: 4051-4053.

A. Shukla and V.K. Sawhney. 1992. Cytokinins in a genie male sterile line of *Brassica napus*. Physiologia Plantarum 85: 23-29.

Correspondence and article.

A. Shukla and V.K. Sawhney. 1993. Metabolism of dihydrozeatin in floral buds of wild type and a genie male sterile line of rapeseed (*Brassica napus* L.). Journal of Experimental Botany 44: 1497-1505.

Correspondence, article, negatives and photographs.

S. Singh and V.K. Sawhney. 1992. Endogenous hormones in seeds, germination behaviour and early seedling characteristics in a normal and ogura cytoplasmic male sterile line of rapeseed (*Brassica napus* L.). Journal of Experimental Botany 43: 1497-1505.

Correspondence and article.

P.L. Polowick and V.K. Sawhney. 1992. Ultrastructural changes in the cell wall, nucleus and cytoplasm of pollen mother cells during meiotic prophase I in *Lycopersicon esculentum* (Mill.). Protoplasma 169: 139-147.

Correspondence and article.

K.R. Shivanna and V.K. Sawhney. 1993. Pollen selection for *Alternaria* resistance to oilseed brassicas: responses of pollen grains and leaves to a toxin of *A. brassicae*. Theoretical and Applied Genetics 86: 339-344.

Correspondence and article.

S. Singh and V.K. Sawhney. 1992. Cytokinins in the normal line and the ogura (ogu) cytoplasmic male-sterile line of rapeseed (*Brassica napus*). Plant Science 86: 147-154.

Correspondence, negatives and article.

S. Singh, V.K. Sawhney and D.W. Pearce. 1992. Temperature effects on endogenous indole-3-acetic acid levels in leaves and stamens of the normal and male sterile 'stamenless-2' mutant of tomato (*Lycopersicon esculentum*). *Plant, Cell and Environment* 15: 373-377.

Correspondence, negatives and article.

A. Shukla and V.K. Sawhney. 1992. Cytokinins in a genie male sterile line of *Brassica napus*. *Physiologia Plantarum* 85: 23-29.

Correspondence and article.

K.N. Chandra Sekhar and V.K. Sawhney. 1991. Regulation of leaf shape in the *solanifolia* mutant of tomato (*Lycopersicon esculentum*) by plant growth substances. *Annals of Botany* 67: 3-6.

Correspondence, article, negatives and photographs.

V.K. Sawhney. 1992. Floral mutants in tomato: development, physiology and evolutionary implications. *Canadian Journal of Botany* 70: 701-707.

Correspondence, article, negatives and photographs.

P.L. Polowick and V.K. Sawhney. 1991. *In vitro* floral development of oilseed rape (*Brassica napus* L.): The effects of pH and plant growth regulators. *Journal of Experimental Botany* 42: 1583-1588.

Correspondence, article, negatives and photographs.

S.M. Attree, D. Moore, V.K. Sawhney and L.C. Fowke. 1991. Enhanced maturation and desiccation tolerance of white spruce (*Picea glauca* (Moench) Voss) somatic embryos: Effects of non-plasmolysing water stress and abscisic acid. *Annals of Botany* 68: 519-525.

Correspondence and article.

Box 10

I.S. Sheoran and V. K. Sawhney. 2012. Proteomics of angiosperm pollen. *International Journal of Plant Reproductive Biology*.

Correspondence and article.

L.C. Schewe, V.K. Sawhney and A.R. Davis. 2011. Ontogeny of floral organs in flax (*Linum usitatissimum*; Linaceae). *American Journal of Botany* 98: 1077-1085.

Correspondence and article.

I. S. Sheoran and V.K. Sawhney. 2010. Proteome analysis of the normal and Ogura (ogu) CMS anthers of *Brassica napus* to identify proteins associated with male sterility. (Invited paper) *Botany* 88: 217-230.

Correspondence and article.

I.S. Sheoran, E.J. Pedersen, A.R.S. Ross and V. K. Sawhney. 2009. Dynamics of protein expression during pollen germination in canola (*Brassica napus*). *Planta* 230: 779-793.

Correspondence and article.

I.S. Sheoran, A.R.S. Ross, D.J.H. Olson and V.K. Sawhney. 2009. Differential expression of proteins in the wild type and 7B-1 male-sterile mutant anthers of tomato (*Solanum lycopersicum*): A proteomic analysis. *Journal of Proteomics* 71: 624-636.

Correspondence and article.

I.S. Sheoran, A.R.S. Ross, D.J.H. Olson and V.K. Sawhney. 2009. Compatibility of plant protein extraction methods with mass spectrometry. *Plant Science* 176: 99-104.

Correspondence and article.

I.S. Sheoran, A.R.S. Ross, D.J.H. Olson and V.K. Sawhney, 2007. Proteomics of tomato (*Lycopersicon esculentum*) pollen. *Journal of Experimental Botany* 58: 3525-3535.

Correspondence and article.

I.S. Sheoran, K.A. Sproule, D.J.H. Olson, A.R.S. Ross and V.K. Sawhney. 2006. Proteome profile and functional classification of proteins in *Arabidopsis thaliana* (Landsberg erecta) mature pollen. *Sexual Plant Reproduction* 19: 185-196.

Correspondence and article.

I.S. Sheoran and V. K. Sawhney. 2008. Proteomics of tomato seed and pollen. Science Publishers.

Correspondence and article.

I.S. Sheoran, T. Dumonceaux, R. Datla and V.K. Sawhney, 2006. Anthocyanin accumulation in the hypocotyl of an ABA-overproducing male-sterile tomato (*Lycopersicon esculentum*) mutant. *Physiologia Plantarum*. 127: 681-689.

Correspondence and article.

I.S. Sheoran, D.J.H. Olson, A.R.S. Ross and V.K. Sawhney. 2005. Proteome analysis of embryo and endosperm from germinating tomato seeds. *Proteomics* 5: 3752-3764.

Correspondence and article.

M. Fellner, J.A. Franklin, D.M. Reid and V.K. Sawhney. 2005. Increased sensitivity to, and reduced production of, ethylene in an ABA-overproducing tomato mutant. *Acta Biologica Cracoviensia (Series Botanica)* 47: 205-212 (Invited paper).

Correspondence and article.

V.K. Sawhney, 2004. Photoperiod - sensitive male-sterile mutant in tomato and its potential use in hybrid seed production. *Journal of Horticultural Science and Biotechnology* 79: 138-141.

Correspondence and article.

H. Fei, R. Zhang, R.P. Pharis and V.K. Sawhney, 2004. Pleiotropic effects of the male sterile 33 (ms33) mutant in Arabidopsis are associated with modifications in endogenous gibberellins, indole-3-acetic acid and abscisic acid. *Planta* 219: 649-660.

Correspondence and article.

R.K. Kakkar and V.K. Sawhney. 2002. Polyamine research in plants - a changing perspective. *Physiologia Plantarum* 116:281-292.

Correspondence and article.

M. Fellner and V.K. Sawhney. 2002. The 7B-1 mutant in tomato shows blue light-specific resistance to osmotic stresses and abscisic acid. *Planta* 214: 675-682.

Correspondence and article.

M. Fellner, R. Zhang, R.P. Pharis and V.K. Sawhney. 2001. Reduced de-etiolation of hypocotyl growth in a tomato mutant is associated with hypersensitivity to, and high endogenous levels of, abscisic acid. *Journal of Experimental Botany* 52: 725-738.

Correspondence and article.

M. Fellner and V.K. Sawhney. 2000. Seed germination in a tomato male-sterile mutant is resistant to osmotic, salt and low temperature stresses. *Theoretical and Applied Genetics* 102: 215-222.

Correspondence and article.

V.K. Sawhney, 2000. Pollen biotechnology. *The Handbook of Transgenic Food Plants*.

Correspondence and article.

H. Fei and V.K. Sawhney. 2001. Ultrastructural characterization of male sterile 33 (ms33) mutant in Arabidopsis affected in pollen desiccation and maturation. *Canadian Journal of Botany* 79: 118-129.

Correspondence and article.

H. Fei and V.K. Sawhney. 1999. MS32-regulated timing of callose degradation during microsporogenesis in Arabidopsis is associated with the accumulation of stacked rough ER in tapetal cells. *Sexual Plant Reproduction* 12: 188-193.

Correspondence and article.

H. Fei and V.K. Sawhney. 1999. Role of plant growth substances in MS33-controlled stamen filament growth in Arabidopsis. *Physiologia Plantarum* 105: 165-170.

Correspondence, negative, photographs and article.

Preprints of publications. – 1998-2012.

Offprints.

Preprints of publications. – 1982-1997.
Offprints.

Preprints of publications. – 1968-1981.
Offprints.

Box 11

“Pollen Biotechnology for Crop Production and Improvement”. 1997. K.R. Shivanna and V.K. Sawhney (Editors). Cambridge University Press. U.K. – 1994-1997. – 5 folders.
Correspondence and copy of the book. Sawhney was co-editor and contributor.

Research work - Antirrhinum and brassica napus. – 1996-1999.
Research slides/negatives.

Research work. – nd, 1968-1988.
Research slides/negatives.

Research work. – nd, 1987-1991.
Research slides/negatives.

Box 12

V. Microscopic slides and research material. – 1968-1981.

Pepper (vinedale).
Pepper GA3/control. – 1977.
Stamenless (SI) and female sterile (fms) mutant in tomato.
Stamenless (temperature effects) tomato.
Stamenless mutant tomato.
CS/CS mutant – flower development. – 1978.
Stamenless wild type.
In vitro tomatoes. – 1978

Box 13

7B-1 mutant (tomato).
7B-1 (resin)
Stamenless mutant and WT slides.
Tomato stamen development.
Stamenless (temperature experiments) tomato mutant.
Tradescantia.
Lettuce Hypocotyls.
Pepper vinedale.

Tradescantia.

Box 14

Pepper vinedale A3. – 1976.
 Peppers 2 coll. G A3 and control. - Summer 1977.
 Genetically modified canola.
 Tomato GA3. - 1977.
 Lettuce roots. – 1977.
 Unlabelled boxes. – nd. – 5 boxes.

Box 15

Pepper vinedale control. – 1976.
 Pepper vinedale A3. – 1976.
 SI2 Low Temperature. – 1981.
 SI2 Low and high Temperature. – 1981.
 Pepper GA3 Growth Chamber. – 1977.
 Helianthus Shoot Apex thick sections.
 Pepper slides for paper.
 Stem sections.
 Cytochalasin 1u sections. – 2 boxes.
 Helianthus test slides.
 Coleus floral stem tip.
 Thick sections.
 Untitled slide boxes. – nd. – 8 boxes.

Box 16

Negatives. – 1968-1971. – 4 folders.