

# SUMMARY: Plant-TEC List June 2010



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TECH ID	TECHNOLOGY	PATENT REFERENCE	FIELD OF USE & LITERATURE REFERENCE	RELEASE DATE	SOURCE ORGANISATION	LEAD SCIENTIST
<b>ENABLING TECHNOLOGY</b>						
<b>GENERAL TECHNOLOGY</b>						
09.481	Self-Incompatibility System	WO 2010/061181	Self-Incompatibility System from Papaver. Nature (2009); 459: 992-995.	03-Sep-09	University of Birmingham	Veronica Franklin-Tong
<b>SILENCING</b>						
94.029	AMPLICON™	US 6,635,805	High efficiency transgenic silencing platform. Plant Journal (1999); 20: 357-362.	18-Jun-03	Sainsbury Laboratory	David Baulcombe
99.192	TRV VIGS	US 6,369,296	Tobacco rattle virus VIGS vectors for high throughput and rapid gene discovery. Plant Journal (2002); 31(6): 777-786.	18-Jun-03	Sainsbury Laboratory	David Baulcombe
01.258	Gemini virus vectors	US 6,759,571	Geminivirus based gene function analysis with broad crop range targets. Plant Molecular Biology (2007); 65: 163-175.	24-Oct-05	University of North Carolina	Niki Robertson
04.365	TRV VIGS - improvements	US 7,229,829	Modified TRV vector, with demonstrated facilitated cloning of tomato ESTs. Plant Journal (2004); 39: 734-746.	24-Oct-05	Yale University	Dinesh Kumar
<b>EXPRESSION SYSTEMS</b>						
99.194	Express: Enhanced transient expression system	US 7,217,854 EP 1,232,274	Rapid and highly efficient non-integrative expression system. Plant Journal (2003); 33: 949-956.	01-Nov-02	Sainsbury Laboratory	David Baulcombe
99.194	Suppressors of gene silencing	US 7,217,854 EP 1,232,274	Suppressors of post transcriptional gene silencing from plant viruses. Plant Journal (2003); 33: 949-956.	01-Nov-02	Sainsbury Laboratory	David Baulcombe
02.312	RNA-directed RNA polymerases (RdRPs)	US 6,218,142	Methods of using plant RdRPs to control gene silencing. Cell (2000); 101: 543-553.	01-Mar-03		Michael Wassenegger
05.386	CPMV based protein expression system	WO 07/135480	Virus based system for expression of proteins in plants without production of infective viral particles. Plant Biotechnology (2008); 6 (1): 82-92.	30-May-06	John Innes Centre	George Lomonosoff
05.399	P19m: modified suppressor of gene silencing	WO 07/092460	Mutated P19 suppressor of gene silencing with reduced negative developmental effects. Journal of Virology (2006); 80 (6): 3000-3008.	02-May-08	Texas A&M University System	Herman Scholthof
07.439	HT CPMV: Extreme high level protein expression	Priority patent application pending	Mutagenesis of CPMV expression system results in heterologous protein production of up to 30% of total soluble protein. Plant Physiology (2008); 148: 1212-1218.	07-Jan-08	John Innes Centre	George Lomonosoff
<b>PROMOTERS</b>						
97.144	BSV promoter	WO 99/43836	High level constitutive promoter for monocots and dicots.	01-Mar-03	John Innes Centre	Roger Hull
03.329	Cis-Jasmonate switchable promoters	US 6,890,525	Plant promoters that can be specifically induced using the semiochemical cis-Jasmonate. Pest Manag Sci (2003); 59 (9): 1031-6.	01-Oct-03	Rothamsted Research	John Pickett
04.345	Rubi3 Promoter / Intron	PCT/US2004/015286	Rice polyubiquitin promoter and intron - high level expression in transgenic rice and corn. Molecular Genetics and Genomics (2008); 279(6):563-72.	01-Jun-04	North Carolina State University	Ron Qu
06.414	Root-Specific Promoters	US Appl. 2008/0244791	Root-specific promoters from oats suitable for driving gene expression in monocots and dicots. Proc Natl Acad Sci, USA (2006); 103 (49): 18848-18853.	28-Feb-07	John Innes Centre	Anne Osbourn
09.479	PsEND1 Promoter	WO 0173088	PsEND1 Anther-specific Promoter. Plant Cell Reports (2010); 29(1): 61-77.	03-Sep-09	Universidad Politécnica de Valencia	José-Pío Beltrán
<b>NUTRITIONAL ENHANCEMENT TECHNOLOGY</b>						
99.202	Oat beta-amylase synthase gene	WO 01/46391	Engineering saponin biosynthesis in plants for improved flavour and nutritional value. PNAS (1999); 96: 12923-12928.	01-Nov-02	Sainsbury Laboratory	Anne Osbourn
03.341	Cytochrome P450 monooxygenase gene	WO 06/044508	Engineering saponin biosynthesis in plants for improved flavour and nutritional value. Proc Natl Acad Sci, USA (2004); 101: 8233-8238.	20-Dec-04	Sainsbury Laboratory	Anne Osbourn
05.373	Triterpene biosynthetic enzymes	WO 2009/041932	Altering triterpene to develop crops with altered levels or structures of saponins to increase nutritional value and / or taste. Plant Cell (2008); 20 (1): 201-12.	05-Jul-07	Sainsbury Laboratory	Anne Osbourn

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<b>CROP PERFORMANCE TECHNOLOGY</b>						
<b>DEVELOPMENT AND YIELD</b>						
04.354	eIF2alpha	US 6,692,962	Translational control using eIF2alpha affecting cellular regulation to improve yield. Biochem Biophys Res Comm (2000); 279: 468-474.	06-Jul-05	University of Wyoming	Don Roth
07.436	Da1	WO2009/047525	Gene controlling plant seed and organ size, and plant biomass. Genes and Development (2008); 22 (10): 1331-6.	07-Jan-08	John Innes Centre	Yunhai Li
09.480	PPAT	Patent applications pending	Gene for Plant Yield Enhancement. Plant Physiology (2008); 148: 546-556.	03-Sep-09	Universidad Politécnica de Valencia	Pedro Rodriguez
09.484	CrCO CONSTANS	Patent applications pending	CONSTANS gene from Chamydomonas - strong promoter of flowering in any conditions. Plant Signaling & Behavior (2009); 4 (7): 642-644.	05-Oct-09	University of Sevilla	Federico Valverde
09.496	Temperature Sensing	Patent applications pending	Modify temperature effects by controlling the presence of H2A.Z in the nucleosome. Cell (2010); 140 (1): 136-147.	15-Jan-10	John Innes Centre	Phil Wigge
<b>10.497</b>	<b>FT Mutants</b>	<b>Patent applications pending</b>	<b>Increased Seed Yield by increasing flower number.</b>	<b>01-Mar-10</b>	<b>University of Warwick</b>	<b>Yiguo Hong</b>
<b>09.488</b>	<b>Control of Pod Shattering</b>	<b>Patent applications pending</b>	<b>Manipulation of gibberellin levels for finely controlling fruit patterning in plants</b>	<b>29-Jun-10</b>	<b>John Innes Centre</b>	<b>Lars Ostergaard</b>
<b>STRESS RESISTANCE AND YIELD</b>						
01.266	Flavodoxin	WO 03/035881	Enhanced reactive oxygen protection for resistance to a wide range of abiotic, biotic and xenobiotic stresses. Environ Sci Technol (2007); 41 (11): 4071-4076.	01-Nov-02	Universidad Nacional de Rosario	Nestor Carillo
08.452	HSF3 Gene	WO 08/110848	Increased yield and water-use efficiency. Drought tolerance. Pathogen Resistance.	10-Sep-08	University of Essex	Phil Mullineaux
08.465	HAHB1 Gene	Patent application pending	HAHB1 Gene and Promoter for Abiotic Stress Tolerance.	10-Jun-09	Universidad Nacional del Litoral	Raquel Chan
<b>ROOT ARCHITECTURE</b>						
00.244	Root Hair Genes	WO 08/142364	AtRHD6 gene to stimulate root hair formation. Nature Genetics published online 7 Feb 2010.	05-Jul-07	John Innes Centre	Liam Dolan
<b>NITROGEN FIXATION AND UTILISATION</b>						
04.363	Nfr Genes	WO 05/003338	Genes encoding novel nod-factor binding receptors for establishing or improving nitrogen-fixing Rhizobium interactions in plants. EMBO Journal (2007); 26 (17): 3923-3935.	06-Apr-05	University of Aarhus	Jens Stougaard
05.372	Spontaneous Nodule Formation Mutants	WO 07/006318	Mutations in genes causing spontaneous nodule formation in the absence of Rhizobium and Nod-factors. Nature Rev Mol Cell Biol (2004); 5: 566-576.	24-Oct-05	University of Aarhus	Jens Stougaard
06.407	Spontaneous Root Nodulation Mutants	WO 08/009287	Mutations in genes causing spontaneous root nodulation in the absence of rhizobial bacteria and Nod-factors. MPMI (2006); 19 (4): 373-382.	27-Sep-06	University of Aarhus	Jens Stougaard
<b>CROP PROTECTION TECHNOLOGY</b>						
94.009	Cf9 gene	US 5,920,000	Broad claims to LRR containing R genes. Cell (1997); 91: 821-832.	01-Nov-02	Sainsbury Laboratory	Jonathan Jones
99.202	Oat beta-amyrin synthase gene	WO 01/46391	Biosynthesis of antifungal saponins in plants. PNAS (1999); 96: 12923-12928.	01-Nov-02	Sainsbury Laboratory	Anne Osbourn
03.341	Cytochrome P450 monooxygenase gene	WO 06/044508	Biosynthesis of antifungal saponins in plants. Proc Natl Acad Sci, USA (2004); 101: 8233-8238.	20-Dec-04	Sainsbury Laboratory	Anne Osbourn
05.373	Triterpene biosynthetic enzymes	WO 2009/041932	Three isolated polynucleotides involved in the biosynthesis of triterpenes applicable to confer fungal and microbial resistance. Plant Cell (2008); 20 (1): 201-12.	05-Jul-07	Sainsbury Laboratory	Anne Osbourn
05.395	Peptide Aptamers	WO 07/019532	Virus resistance strategy making use of peptide aptamers to enable broad-spectrum resistance. J Virol (2006); 80: 5841-5953.	27-Sep-06	North Carolina State University	Linda Hanley-Bowdoin
08.461	Fusarium Resistance	Patent application pending	Strategies modifying ethylene signaling in plants to control fungal diseases and reduce contaminating mycotoxins. New Phytologist (2009); 182 (4): 975-983.	10-Sep-08	John Innes Centre	Paul Nicholson
<b>07.425</b> <b>07.426</b>	<b>Late Blight Resistance</b>	<b>WO2009/013468</b>	<b>Isolation and cloning of several late blight resistance genes from wild potato species. Genes conferring resistance to the devastating late blight disease, Phytophthora infestans. MPMI (2009); 22: 589-600.</b>	<b>01-Mar-10</b>	<b>Sainsbury Laboratory</b>	<b>Jonathan Jones</b>
<b>10.504</b> <b>10.505</b>	<b>Microbial proteins for broad spectrum pathogen resistance</b>	<b>US 6,528,480 &amp; 7,592,509</b>	<b>Plants expressing MF2 from Bacillus thuringiensis or MF3 from Pseudomonas fluorescence show resistance to a wide range of pathogens and pests</b>	<b>29-Jun-10</b>	<b>All Russian Research Institute of Phytopathology</b>	<b>Vitaly Dzhavakhiya</b>

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<b>INRA Technologies</b>			<a href="http://www.inra-transfert.fr">www.inra-transfert.fr</a>			
INRA001	CCR Gene	EP 0 853 672	DNA sequences encoding a cinnamoyl CoA reductase. Plant Mol Biol (1998); 38: 671-676.	05-Feb-08	INRA	Alain-Michel Boudet
INRA002	BAN Promoter	WO 03/012106	Promoter for protein expression in the endothelium of a plant seed. The Plant Cell (2003); 15: 2514-2531.	05-Feb-08	INRA	Loic Lepiniec
INRA003	FAD2 mutants	Patent applications pending	High-oleic acid brassica germplasm & associated genetic markers. Theor Appl Genet (2006); 113(7): 1331-1345.	05-Feb-08	INRA	Michel Renard
INRA004	PK6 Haploid Inducer	WO 05/004586	Method for obtaining double-haploid maize plants by ovule culture.	05-Feb-08	INRA	Jacques Bordes
INRA005	Vat Gene	WO 04/072109	Gene conferring resistance to Aphis gossypii. Genome (2003); 46(5): 761-73.	05-Feb-08	INRA	Catherine Dogimont
INRA006	Rf Ogu Fertility Restorer	EP1382612 WO 02/088179 (1) EP1556495 WO 04/039988 (2)	Restorer gene for male fertility in Brassicae. EMBO Rep (2003); 4(6): 588-594.	05-Feb-08	INRA	
INRA007	Bzh gene for short stature brassica plants	WO 01/09356 EP 1198577	Mutant gene of the GRAS family. Theor Appl Genet (1998); 97: 828-833.	31-Mar-08	INRA	Michel Renard
INRA008	Cleistogamous crucifers	EP 1037522 PCT/FR2008/001585	Identification of the mutation in the gene Clg1 responsible for cleistogamy in crucifers.	31-Mar-08	INRA	Michel Renard
INRA009	VvSOR gene for increased size of plant storage organs	WO 2005/078101	Modifying the size and organic acid content of a plant storage organ. Ann Rev Plant Biol (2003); 54: 575-603.	31-Mar-08	INRA	Hervé Sentenac
INRA010	Plastid targeting technology	WO 06/056701	Directing nucleic acids to plant cell plastids.	31-Mar-08	INRA	
INRA011	Ralstonia Diagnostic	Patent application pending	Detecting Ralstonia solanacearum race 3 biovar 2. A new method for detecting latent potato brown rot.	10-Sep-08	INRA	Christian Boucher
INRA012	Plastidial-targeting Peptide	WO 04/001050	A novel method for targeting proteins to plastids. J Biol Chem (2007); 282(40): 29482-29492.	09-Dec-08	INRA	
INRA013	Inactivation of the starch synthase IV and starch phosphorylase	WO 05/097999 08/012356	WO Method for improving the size of starch granules for higher yields of extraction and purification of starch. Plant Journal (2007); 49(3): 492-504.	20-Jan-09	INRA	Véronique Planchot
INRA014	Potyvirus Resistance	WO 03/066900 WO 05/118850	Methods for targeting the eIF4E gene family for selecting or obtaining potyvirus resistant plants. Plant J (2008); 54(1): 56-68.	20-Jan-09	INRA	Carole Caranta
INRA015	Reduced Nematode Sensitivity	WO 2008/139334	Method for decreasing the sensitivity of plants to endoparasitic nematodes. Plant Cell (2008); 20: 423-437.	31-Mar-09	INRA	
INRA016	Fatty Acid Synthesis	Patent application pending	Recombinant cells and plants for synthesis of very long chain fatty acids. Proc Natl Acad Sci USA (2008); 105(38): 14727-31.	31-Mar-09	INRA	Jean-Denis Faure
INRA017	Floral Determinants	WO 2007/125264 FR 0855146	Combination of two genes controlling the floral sexual phenotype of plants. Science (2008); 321(5890): 836-8.	10-Jun-09	INRA	Abdelhafid Bendahmane
INRA018	Nematode infection responsive promoter	WO 2008/139334	Promoter trap strategy has led to the isolation of a promoter that has early activity in gall cells after root knot nematode infection. Plant Cell (2008); 20: 423-437.	15-Jan-10	INRA	
INRA019	<b>Breeding forage maize with improved digestibility</b>	<b>FR 2852326 CA 2518733 EP 1601690</b>	<b>Methods for selecting or obtaining forage grasses such as maize and sorghum in which the Pox3/U19 peroxidase is inactive. BMC Genetics (2004); 5: 19.</b>	<b>29-Jun-10</b>	<b>INRA</b>	