

Due to consumer demand, food manufacturers worldwide are moving to produce more natural colours, in an effort to replace potentially harmful artificial colourings now used in many foods and beverages.









Food colouring now represents a \$1.2 billion global market, with natural colours capturing 31% of the food market, but growing at a rate of 5%. However, these natural colours are largely plant extracts that have the disadvantage of variability and seasonal supply. Microbial cell production, in contrast, offers a reliable and scalable pigment production technology.

The aim of this research project has been the screening of pigment-producing microbes from New Zealand environment to select those presenting potential for production of food-grade colorants. Our selection has been based on the microorganisms (e.g. bacteria, fungi and microalgae) producing pigment molecules that fit current market demands for specific colour shades and pigment chemical properties.



*Claviceps purpurea* produces a water-soluble blue pigment called *clavicipic acid*. *Claviceps purpurea* is a fungus that grows on rye and other grains. It produces a water-soluble blue pigment called *clavicipic acid*. *Claviceps purpurea* is a fungus that grows on rye and other grains. It produces a water-soluble blue pigment called *clavicipic acid*.

## Microbe-Derived Pigments

	SVB-B15	Hydrophilic		SVB-B227	Hydropho
	SVB-B29	Hydrophilic		SVB-Y10	Hydrophil
	SVB-B28	Hydrophilic		SVB-B33	Hydrophil
	SVB-Y28	Hydrophilic		SVB-B21	Hydrophil
	SVB-B20	Hydrophilic		SVB-B19	Hydrophil
	SVB-B30	Hydrophilic		SVB-B27	Hydrophil
	SVB-B41	Hydrophilic		SVB-B25	Hydrophil
	SVB-B35	Hydrophilic		SVB-B18	Hydrophil
	SVB-B34	Hydrophilic		SVB-B38	Hydrophil
	SVB-B40	Hydrophilic		SVB-B31	Hydrophil
	SVB-B22	Hydrophilic	SVB-B23	Hydrophil	
	SVB-B37	Hydrophilic		SVB-B51	Hydropho
	SVB-B36	Hydrophilic		SVB-B50	Hydropho
	SVB-B39	Hydrophilic		SVB-B147	Hydropho
	SVB-B46	Hydrophilic		SVB-A1	Hydropho
	SVB-B43	Hydrophilic		SVB-B47	Hydropho
	SVB-B24	Hydrophilic		SVB-B48	Hydropho
	SVB-B44	Hydrophilic		SVB-B49	Hydropho
	SVB-B45	Hydrophilic			
	SVB-B26	Hydrophilic			
	SVB-B32	Hydrophilic			
SVB-B42	Hydrophilic				

Colors and desirability of water-soluble pigments extracted from short-listed microbial