POLLEN ANALYSIS OF IRISH ACRES HONEY

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INTRODUCTION

A sample of Irish Acres Honey was received for pollen analysis.

METHODS

First, the container of honey was heated by placing it in a 600 ml beaker filled with boiling H_20. Once the honey was warmed, 30 ml was measured and placed in a 250 ml glass beaker with 30 ml of reverse osmosis de-ionized (RODI) water. The mixture was stirred, then poured into the upper chamber of a vacuum flask for filtration through a glass filter. The honey was captured on the glass filter, which was removed and placed in a 50-ml polypropylene tube that contained a tablet of *Lycopodium* dissolved in dilute HCl. Hydrofluoric (HF) acid was added to cover the filter, which was then heated to dissolve the filter, leaving the pollen in the tube. The sample was centrifuged and the acid decanted. After transferring to a 15-ml polypropylene tube with water, the sample was centrifuged and the supernatant decanted. It received an additional three rinses to remove all traces of the acid. The sample then received a glacial acetic acid rinse to remove water, which is incompatible with the acetolysis mixture (9-parts acetic anhydride and one part sulfuric acid) used to remove the inner cytoplasm and exterior waxes from the pollen. After acetolysis, the sample was centrifuged, the supernatant decanted, then rinsed again with glacial acetic acid prior to receiving the final four RODI rinses. Pollen was stained with dilute safranin stain, rinses, then stored.

A light microscope was used to count the pollen to a total of approximately 300 pollen grains at a magnification of 400x. The microscope slide was made using glycerine and pollen-rich residue from the sample. Total pollen concentration was calculated in Tilia using the quantity of sample processed (cc), the quantity of exotics (spores) added to the sample, the quantity of exotics counted, and the total pollen counted. Comparative reference material collected at the Intermountain Herbarium at Utah State University and the University of Colorado Herbarium, as well as in the field by one or more of our analysts, was used to identify the pollen to the family, genus, and species level, where possible. Published pollen atlases also were consulted. Data are presented in an Excel spreadsheet listing the pollen taxa by scientific and common name and presenting both the raw counts and percentages for each sample.

DISCUSSION

The extraction yielded a very clean preparation with well-preserved pollen. The dominant pollen taxon is clover, with two types of clover represented. Mustard family and poison ivy/oak pollen are noted in moderate quantities, followed by rose family. Tupelo pollen is present as a minor constituent. Total pollen concentration is calculated at slightly more than 8,000 pollen per cc of honey. An Excel spreadsheet accompanies this text detailing the pollen counts, percentages, and calculated total pollen concentrations for each sample.

Sample		1	
Location	Irish Acres		
		#	%
Scientific Name	Common Name		
BRASSICACEAE	Mustard family	19	0.0622950
Eriogonum	Wild buckwheat	2	0.0065573
Melilotus	Clover	221	0.7245901
Nyssa	Tupelo	4	0.0131147
Quercus	Oak	1	0.0032786
RHAMNACEAE	Buckthorn family	1	0.0032786
ROSACEAE	Rose family	10	0.0327868
Toxicodendron	Poison ivy/oak	17	0.0557377
Trifolium pratense	Clover	30	0.0983606
POLLEN SUM		305	
TOTAL POLLEN CONCENTRATION		8214.7	