

# Pulses education in the Wimmera in the 2016 IYP

For the 2016 International Year of Pulses (IYP), enviroed4all®'s pulse education program involved 300 'Wimmera' primary students and their 28 teachers/aides, and some 25 parent farmers, locally in this global year.

What does an IYP do? The first aim of the IYP is to raise awareness and knowledge of pulses. What is there to learn about 'pulses'? The first thing is that there are two meanings of the word. At the start, hardly any children in this IYP program knew the meaning for 'pulses' as seeds and plants! By the end of the sessions, all had seen that pulses are seeds with two halves, which grow into a plant which makes seeds for its next generation – and whose seeds are a healthy food for people to eat around the world- and whose roots feed the soil, so they are important for farmers too.

Two incursion programs were developed for this IYP: 1 'Pulsing into Pulses' – a 4-session one through terms 2 and 3, including a 28-day pulse growing experiment ending in National Science Week; and 2 'Get to know pulses' a single session one in term 4. These were created by environmental educator Jeanie Clark, enviroed4all®, from Warracknabeal. Funding for the incursion time for the 17 class groups from 14 schools came from the Wimmera CMA (from Australian federal government funding) in their CMA region, Mallee CMA for the Beulah school, and Peaco Ltd and G. Hanley-Smith for the Donald school.

Which pulses did children learn about? The five pulses commonly grown in the Wimmera –Mallee: chick peas, faba beans, field peas, lentils and lupins. One of the first and most enjoyable activities in the program was the simple science activity of feeling each of these types in tubs and describing them. The most common descriptions were smooth and hard (texture). However pebbly (shape), cold (temperature), small (size) and weird (emotional response) were also reported. Many groups ended in artwork, making IYP-style logos from the pulses.

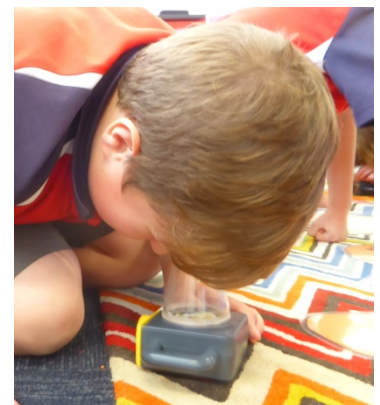
Each pulse has its distinctive colour and/or shape clue for identifying its seeds (and plants). At the start, most could not name any of the different types, but noticed their differences quickly, especially when magnified:

- smallest were the flat lentils
- field peas were like a ball with a dint in them
- lupins had brown spots that became dashes under a magnifier
- chick peas had a beak and clear split in their ball shape.
- faba beans were largest with a black slash in part of their split.

Some children recognized that lentils and chick peas were in foods they ate. In fact all are foods, which may be fed to stock in Australia, but are eaten in other parts of the world, especially the Middle East and Indian sub-continent, from where they originate. Both children and teachers were surprised to see the world map showing how much Australian crop is sold to these regions to feed people.

How does a pulse plant grow? Samples and models were used throughout:

- From the cold, hard seed that was sown in the soil
- to being softened by moisture, to start seed growth
- shooting a white root downwards and a green sprout upwards
- growing as a plant with liquid 'food' for roots, and gas 'food' for leaves
- flowering and making pods in these for its seeds
- harvested to feed people (or their stock) or kept as seed for next year,
- while nitrogen on roots stays in the soil as nutrient in soil for the next crop.



In the 4-session program, students grew 10 pulse seeds each for 28-days in mini-farms in an experiment repeated across 8 classes and with 3 (blind) sandy soil conditions. These highlighted that soil can contain hidden things: salt which stopped seeds from sprouting- a crop failure; fertilizer - which showed no benefit in this time period. This experiment was also a simulation of farming so that students could see that farmers are experimental scientists, who do not always have all variables under their control and who use science to help them get the best long-term, i.e. sustainable, production. Many students were excited to be solely responsible for growing their own pulse plants. The tallest ones after 28-days were field peas, over 40 cm high, while chick peas and lentils were shorter.

After the first session, surveys were sent home to find out why local farmers grew pulses. The children collated the reasons from the 25 replies into similar groups:

- soil health
- as part of a rotation to reduce weeds and diseases
- for stock feed,
- for the money they make

We noticed that none had said for 'eating' ourselves!

What was most 'amazing' about pulse seeds and plants? Students answered this question as part of the evaluation. The most common replies fell into four groups:

- what the different pulses look like;
- the food storage inside
- the way the pulse seeds sprout, and then grow
- that our pulse crops feed people in other countries

"It has been wonderful to share our pulses with Wimmera children as part of this global year, thanks to the teachers' interest, and the organisations which helped fund the incursions. With 2016's good season, it seemed as if the land was celebrating the IYP too!" said Jeanie.

Jeanie Clark, enviroed4all®, 2016.

**Photos** by Jeanie Clark or by courtesy & permission of respective schools for their use **from top:**

*An IYP –style logo made from Wimmera pulses as an art activity (Beulah PS)*

*Feeling pulses in tubs and seeing samples of plants and products (St Peters LS and WHEG)*

*Looking at pulses in a magnifier (Rainbow PS)*

*Pulses seed and plant features (Jeanie Clark at Jeparit PS)*

*Lentil seed model (St Mary's PS Donald)*

*Plant growth model (Minyip PS)*

*National Science Week ranked pulse seedlings by height after 28 days (Yaapeet and Beulah PS's)*

*One of the tallest field peas aged 28 days, grown by a Y2 student (Jeparit PS)*

*Groups of reasons farmers gave for growing pulses (St Mary's PS Warracknabeal)*

*Destinations of Australian pulses (2010-2014) (Jeanie Clark at WHEG)*

*Pulses samples used in the 'Get to know pulses' session (Minyip PS)*

*Display of Wimmera IYP logo art (OLHC PS Murtoa)*

#### **Participation statistics:**

17 classes, 296 children and 28 teachers/aides, from 11 'Wimmera' town primary schools:

*Pulsing into pulses* - Beulah F-6, Jeparit F-6, Nhill Y5/6 (2), St Marys Donald F-2 & Y3-6, St Mary's Warracknabeal Y5/6, St Peters Lutheran School Dimboola Y3-6, Yaapeet F-6 (143 evaluations)

*Get to know pulses* - Dimboola y3/4, Minyip y3-6 & F-2 in buddy program, OLHC Murtoa Y3-6, Horsham Rasmussen St Y3/4 & Y4/5, Rainbow y4, Stawell West Y5, and the Wimmera Home Education Group (WHEG) F-10. (149 'amazing' comments as evaluations)

Farmer Survey (reasons why you grow pulses) responses: 25 parent farmers from 6 towns.

In-class hours = 66 as 1.5 hour sessions: 4 per Pulsing into pulses and 1 per Get to know pulses

Media: 25 articles in school newsletters, 4 articles in town paper, 2 articles in magazines with national reach, 1 series of 4 articles in magazine with national reach. FB, LN, TT and website posts.

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G. Hanley- Smith.

