

Girl Guides Australia

INTERNATIONAL YEAR OF PULSES AND FOOD SECURITY



GIRL GUIDES
AUSTRALIA

INTERNATIONAL YEAR OF PULSES AND FOOD SECURITY

The United Nations has declared 2016 **'The International Year of Pulses and Food Security'**. The aim is to heighten public awareness of the nutritional benefits of pulses as part of sustainable food production aimed towards food security and nutrition.

The vision will include global food security - in particular the need to improve nutrition for the bottom of the global health and wealth pyramid; and the development of new and different **pulse** based food products to meet Western tastes as part of a role in combating chronic Western diet/health conditions of obesity, diabetes, some cancers and cardio-vascular disease.

This Year will create a unique opportunity to encourage connections throughout the food chain that will better utilise **pulse**-based proteins, further global production of pulses, better utilise crop rotations and address challenges in the world trade in **pulses**. Four themes have been chosen to focus the vision:

- ▶ FOOD & NUTRITION SECURITY AND INNOVATION
- ▶ CREATING AWARENESS
- ▶ PRODUCTIVITY & ENVIRONMENTAL SUSTAINABILITY
- ▶ MARKETING ACCESS & SUSTAINABILITY

WHAT ARE PULSES?

'Pulses' - also called *'grain legumes'* - is the name given to the edible dried seeds of leguminous plants. Legumes are plants which produce a double-seamed pod containing a single row of seeds. They are quite different to cereals/ grain which are the seeds of a grass plant.

In Australia **pulses** make up a group of 12 crops which include beans, peas, chickpeas and lentils.

Pulses have been a main food source in the diets of many cultures around the world for thousands of years. **Pulse** crops are one of the most sustainable crops a farmer can grow, with many varieties needing much less water and energy input than grain crops with a comparable nutritional yield. Being legumes they also contribute to soil fertility by fixing nitrogen in the soil.

Pulses belong to the plant family known as 'Fabaceae' the third largest family of flowering plants on Earth - with over 18 000 species.

WHY HAVE AN INTERNATIONAL YEAR TO CELEBRATE PULSES?

Pulses are a nutritional power-house! They are a vital source of plant based proteins and amino acids for people and animals. They are high in fibre, gluten free, salt free and cholesterol free. The low levels of fat that they contain are mainly the unsaturated fatty acids which help lower the harmful LDL cholesterol levels in the blood. Their high levels of complex carbohydrates make them a low GI food. **Pulses** are loaded with minerals like iron, calcium, magnesium, potassium, B-group vitamins and essential trace elements of copper, manganese, molybdenum, selenium and zinc.

Pulses are sometimes called "the meat for the poor" because of the affordable protein they provide to more than 400 million people in the developing world who depend on them as the main source of nourishment in their diet. In the Western world they are increasingly being seen as a possible solution to the rising incidence of diet related diseases which are swamping the health system and debilitation large numbers of once productive people.

WHAT DO PULSES HAVE TO DO WITH GLOBAL FOOD SECURITY?

Pulses are locally adapted crops which can be grown by farmers for their own nutrition, to feed animals and for sale. They keep well in storage and are highly accepted as a food source.

Because of their role in improving soil and as part of a crop rotation system pulses can assist in limiting soil degradation. Since varieties of pulses can be found in so many different soil and climate types there is just about 'a pulse for every situation' except the Arctic and Antarctic and so issues of lower rainfall, global warming and greenhouse gas influences are less likely to cause a catastrophic food shortage if countries and communities can co-operate and work together by sharing seed varieties, agricultural techniques and markets.

GLOSSARY

- Pulse:** [from the Latin puls thru Old French pols: a meal in a pot] the dried edible seeds of legumes
- Legume:** [from the Latin legere: to pick] a plant with a double seamed pod of seeds in a single row
- Fabaceae:** [from the Latin faba: bean] a family of flowering plants
- Grain:** [from the Latin grana: collect] the seed of food-grasses or cereal plants

USING THE INTERNATIONAL YEAR OF PULSES AND FOOD SECURITY IN THE UNIT PROGRAM

Ideas, activities and references presented in this document can be used and/or adapted for inclusion in the programs of any aged Girl Guide unit.

Some of the activities lend themselves to whole of unit participation while others may be better suited to patrols or individual interests. Some can be completed in a single short session while others may take up a whole meeting or be part of a whole term's activities. Once the International Year has been introduced to the girls in the unit it is up to them to discuss and decide where they will take it.

This is not a 'syllabus' or a 'program' – but a resource and a "jumping-off point" to assist leaders and units as they explore the fascinating world of **PULSES**. It is by no means exhaustive – there are just as many other ideas and activities out there waiting to be dreamed up and tried out. Each section has a short list of website addresses which may be helpful when exploring that area of the topic. There are many others which may be equally as useful. Google the topic name; follow links on other websites and think widely. Many of the topics also have Facebook pages.

To assist in cross referencing activities with parts of the Girl Recognition System they have been roughly grouped into sections. This is a flexible arrangement since many of the activities lend themselves to different parts of a variety of challenges or badges - should Guides decide they wish to pursue that aspect of the program.

We hope you enjoy exploring and celebrating the INTERNATIONAL YEAR of PULSES during 2016.

NOTE: There is no specific badge to celebrate International Year of Pulses and Food Security.

PULSES AND ADVOCACY, BIODIVERSITY AND SUSTAINABILITY

“ Having a UN dedicated year will raise the level of awareness of pulses and the important role they can play in health, nutrition, food security and environmental sustainability. ”

Hakan Bahceci, President of CICILS IPTIC (the peak industry body)

- ▶ Biodiversity and sustainability are popular ‘buzz words’. Find out what they mean and why they are receiving so much attention.
- ▶ The United Nations’ World Food Program has a ‘Food Basket’. Find out what this is and who it is for. Discover what is contained in the ‘Food Basket’ and try making a meal for your patrol or your family from these ingredients.
- ▶ What is meant by the term ‘food security’? How can pulses play a major role in ensuring world food security? Why is 2016 International Year of Pulses important in helping achieve this?
- ▶ The United Nations observes designated days and weeks with a special theme or topic. By creating these special observances the UN promotes international awareness and action on these issues. Investigate one of the following days or weeks and observe it with your unit or your patrol. How can you make others aware of its significance?

7 April	World Health Day
19-23 April	Global Soil Week
22 May	International Day for Biological Diversity
5 June	World Environment Day
15 June	Meat Free Day
17 June	World day to Combat Desertification and Drought
16 October	World Food Day
17 October	International Day for the Eradication of Poverty
24 October	World Development Information Day
5 December	World Soil Day



- ▶ Pulses belong to the third largest family of flowering plants in the world with over 18 000 species – the Fabaceae Family. Many of these plants are toxic but some are not – and those non-toxic seeds make up the main nutrition source for much of the world’s population. Discover where in the world pulses grow and make a map to show their locations. Why might it be important to have so many different species of plants in the same family? How many of these pulses can you find in your supermarket or health food shop?
- ▶ If you find this area of the topic interesting you might also like to look at the FAO/ WAGGGS/ YUNGA Food Security and Climate Change Challenge, a badge put out in 2010.

SOME USEFUL REFERENCES:

www.wfp.org/nutrition/WFP-foodbasket

www.pulseaus.com.au

www.iyop.net/resources

Food Security and Climate Change Challenge www.waggs.org/en/resources/document/view/3833

PULSES AND THE ARTS



- ▶ Folk tales and myths around the world reflect the everyday items used by the people who told the tales. Literature from many countries has stories which involve pulses ... Jack and the Bean Stalk; The Princess and the Pea; The Bottomless Cooking Pot; The Straw, The Coal and The Bean. Can you think of others? Research a tale involving beans, peas or lentils from India, Mexico, Japan, Germany ... anywhere else you like ... and retell it for your patrol or unit. You might decide to tell it as a puppet play, a skit or dramatic play, a song or maybe an illustrated picture book.
- ▶ Games were usually first invented using cheap, easily obtained materials like stones or beans. Try playing some of these games with your patrol –

'Mice and Mealies' – a South African game found in many old games books. Different variations on this game are "Pearl Fishing" and 'Mother Hen'.

'Jacks' – a game from several different countries, played the same as 'Knuckle Bones' but using large beans

'Pass the Bean' – where a bean/pea is passed from hand to hand around the circle while 'It' in the centre tries to guess who has the seed in their hand.

Try playing 'Kim's Game' using a variety of pulse seeds.

“Mother Nature provides an abundance of interesting forms, colours, textures and concepts which, with a bit of imagination, can be united into exciting compositions which reflect the creator's mood, feelings and ideas. Begin a creative adventure.”

Professor CJ Alkema
Artist, author and teacher

Number the cells in an egg carton from 1 to 12. From a distance try flipping or flicking a bean or pea into the cells. You may try to land in each cell in order – or you might have a set number of turns and see who gets the highest score.

See if you can find some more games ... or invent your own

- ▶ The range of colours, sizes and shapes available in the world of pulses makes them a great medium for creating. Try your hand at making some of the following crafts –
 - Seed mosaics on boxes, card tiles, placemats, name plaques, candles, fridge magnets ... you name it!
 - Layered jars ... using different pulses instead of coloured sands or sugars.
 - Use pulses instead of rice to fill juggling balls, stress balls and animal-head bean bags. Juggle and play games using your balls or bean-bags
 - Use mung beans or alfalfa to grow a 'stocking head' or 'hairy egg shell'
 - Make 'bean jewellery' – thread larger beans using a strong needle and beading thread or glue smaller pulse seeds onto foil wrapped card to make bracelets or neck-pieces.
 - Before the invention of glass or plastic beads a number of different cultures used pulse seeds in their craft work ... see what you can discover and have a go at making your own ethnic seed crafts.
 - In the days before cameras explorers and scientists took an artist with them to record the new and unusual plant life they discovered on their travels. These botanical artists made close observations and detailed paintings and drawings of the leaf, flower, seed and stem of the plants they found. Find out about the botanists who travelled with Captain Cook, Charles Darwin and other explorers.
 - Look up some botanical art and see how carefully the work was done to record everything visible about the plant. Have a try at making a botanical drawing of a pulse plant – maybe one you have grown yourself. You might just draw it in graphite, or you might use coloured pencils, aquarelle pencils or water colour to give it life-like colour. Have an exhibition of your work.

SOME USEFUL REFERENCES

Craft ideas www.artistshelpingchildren.org

www.ehow.com/list_5920447_craft_using_dried_bean_seed

Tips and techniques for detailed plant painting

www.botanicalartandartists.com/tips

PULSES AND HEALTH

“ The Grains and Legumes Nutrition Council recommends we eat legumes 2 to 3 times a week because they provide a bundle of essential nutrients that can help keep you satisfied and maintain digestive and immune health. However, according to recent research, most Australians don't even come close to eating that amount. ”

Michelle Broom APD, Nutrition & Program Manager
Grains & Legumes Nutrition Council

- ▶ Find out what foods are recommended for a healthy eating plan and the place pulses have in that selection. Make up a balanced menu for a family for a week which includes dishes based on pulses.
- ▶ Pulses contain many important building blocks for good health. Find out about one of the following and how they keep us healthy and growing:-
 - proteins and amino acids
 - B group vitamins
 - soluble and insoluble fibre
 - minerals (zinc, magnesium, folate, carbohydrates calcium, iron)
 - trace elements
- ▶ There are a number of health issues which affect members of our community. See what you can learn about one of these and how including pulses in their diet may help someone who lives with one of these conditions.
 - diabetes
 - gluten sensitivity
 - obesity
 - cholesterol
- ▶ Some people don't eat pulses because they are afraid they will get 'wind' or flatulence. Investigate how our intestines break down our food and why some pulses may cause this problem in some people – especially those who do not include enough fibre in their diet. Find out how to pre-treat and cook pulses to minimise the chances of developing 'wind' and what herbs to include in your pulse dishes that may help.
- ▶ Make a plan to include pulses in your diet for a month. Find some tasty recipes or dishes that you like and try to eat them 2 to 3 times per week. Keep a record of what you ate and how you felt. Discuss your progress with others in your patrol or unit who have chosen the same challenge.

SOME USEFUL REFERENCES:

www.healthyfoodhealthyplanet.org

www.betterhealth.vic.gov.au/bhcv2/bhcsite

www.eatforhealth.gov.au

www.livestrong.com/article/367185_why_do_beans_give_you+gas

www.themindfulfoodie.com/2013/02/19/10-ways-to-improve-the-digestibility-of-legumes



PULSES AND LIFE SKILLS

“ Legumes are excellent for the family budget and being a high protein, low GI food keeps you feeling satisfied and fuller for longer—great for feeding hungry children and teenagers.

Nutrition Program Manager G&LNC ”

- ▶ The 'International Year' status has enthused chefs and cooks around the world to explore how to include more pulses in their recipes. An event which is encouraging this is the search for a 'signature dish'. In Australia one of the drivers is Simon Bryant of 'The Cook and The Chef' TV fame. In late July 2015 the cook-off was held and the dishes judged. Find out what special features the judges were looking for. Which dish was chosen as Australia's 'Signature Dish'? Maybe you or your patrol could try making the dish yourselves.
- ▶ Several other pulse growing countries held similar competitions. Have a look at the sort of dishes they chose as winners and how they included pulses in the recipes. Perhaps your Unit would like to have a competition to find the Unit's favourite pulse recipes. They may be favourite family dishes, recipes you have found in old recipe books or on the internet – or you might do your own experimenting and invent your very own dish. You could ask guest judges to make the selection – or the whole Unit could sample all the dishes and all have a vote.
- ▶ Pulses are considered a good low cost source of nutrition. Do some budgeting research to compare the cost of a pulse based meal with other common meal forms – frozen dinners; a fast food meal; a restaurant meal; whatever your family usually eats. As well as the cost, look at the nutritional values in each meal and how they stack up against the recommended daily intake.
- ▶ Grow a jar of alfalfa, bean or pea sprouts or prepare a vegetable garden and grow a crop of green beans, broad beans, sugar peas. Use your produce to make a tasty and healthy meal.
- ▶ Pulses can be cooked in a variety of different ways and using a range of cooking appliances ... slow cooker, microwave, convection oven, stove top, pressure cooker, wok, camp oven. Find or invent an appropriate recipe and prepare a delicious pulse meal for your family or your patrol to enjoy using a method of cooking you have not tried before.



- ▶ When you leave home and begin running your own household you will need a collection of tasty, nutritious and budget conscious recipes to feed yourself. Begin your personal recipe collection now with some healthy pulse dishes. You may choose to make a computer collection or use an old fashioned recipe folder. How will you organise them – by meal type? by course type? how easy or difficult they are to prepare? their country of origin?
- ▶ You may decide to make them into a recipe book to sell as a fund raiser. (Don't forget copyright issues if you decide to do this.)

SOME USEFUL REFERENCES:

Grains & Legumes Nutrition Council for facts sheets, recipes and information on the Australian Signature Dish Competition.
www.glnc.org.au/iyp/recipes

Websites of pulse retailers such as McKenzies, Heinze, Edgell, El Paso have great recipes using their own products

PULSES AND SCIENCE

“ The leguminosae have an abundant and diverse fossil record ...The earliest fossils that can be definitively assigned to {them} appeared in the late Palaeocene (approximately 56 million years ago).”

... {they} have an essential worldwide distribution, being found everywhere except Antarctica and the arctic. ”

Wikipedia

- ▶ Investigate some of the many different varieties of pulses grown for food. Make a map showing where in the world they grow. You might like to look up azuki beans, cowpeas, black-eyed peas, dal, navy beans, chana, pinto beans, fava beans, pigeon pea, gram, fenugreek, garbanzo beans, lima beans ... and there are many more. Several have different names depending where they are grown.
 - ▶ There are so many different plants in the world that some way of sorting them and naming them was needed. In the 1700s a Swedish scientist names Carolus Linneaus developed the **Binomial System** (bi = two ; nomial = name) based on how plants looked (particularly their flowers). As scientists have discovered more about cells and DNA they have found that there are better ways to classify plants. About a decade ago the **APGIII** system was worked out. See what you can find out about the Binomial and the APGIII systems of classifying plants.
 - ▶ The classification of a plant is a bit like naming its 'family tree'. See if you can complete the 'family tree' for your favourite pulse. What does each name mean?
- Here is a start ...
- Kingdom:** plants
Division: magnoliophyta (flowering plants)
Class: dicotyledon (two seed leaves)
Order:
Family:
Genus:
Species:
- ▶ Legumes (Fabaceae) are a plant that can fix nitrogen in the soil with the help of tiny bacteria called **rhizobia**. Find out how they these two organisms work together to do this. Why is nitrogen fixing so useful for agriculture? How can leguminous plants be used in a successful crop rotation program?
 - ▶ Plants need three things to grow – water, nutrients and light. Fill a large jar with damp soil or potting mix and plant some broad bean or pea seeds around the outer edge of the jar – so that you can see them through the glass. Keep the jar in a dark place until the seeds sprout and then watch how they grow. Keep a growth diary of your plant.
 - ▶ To start seeds for a vegetable garden fill cardboard toilet rolls with potting mix and keep them damp until the shoots are about 10cm tall. Plant out in your garden – toilet roll and all.
 - ▶ Try growing alfalfa seeds on damp cotton wool or kitchen paper in an egg shell on the window sill or use a large plastic cool drink bottle as a terrarium for mung beans or peas
 - ▶ Many people do not know the difference between a pulse and a grain (or cereal). Do some research and explain to your patrol or unit what is different about these two types of plant. You could use photos or diagrams to help. Find out why some people can eat pulses but not grains.

SOME USEFUL REFERENCES:

<http://plants.usda.gov/java/Classification>

<http://theseedsite.co.uk/class3>

The Australian Pulse Bulletin #8 explains pulses in crop rotations. www.pulseaus.com.au

Names, origins and uses of bean, pea & lentil varieties www.clovegarden.com/ingred/bp_legumev

For easily understood pictures and diagrams explaining how this works [nitrogen fixing plants – images](#)

PULSES IN THE WORLD

“ 2016 will also be an occasion to learn about the world's wonderful pulse culinary traditions ”

Tim Edgcombe CEO Pulse Australia

- ▶ From cowboy Baked Beans and Mexican Refrijolas to Hommas, an Indian Chennah Sabat or a French Cassolet – there is a pulse dish, a flavour and a cooking style for everyone. Select a country or a culture that interests you and investigate the use of pulses in their national cuisine. Try cooking one of their dishes. You might do this for your family, your patrol or as part of an International Dinner with your Guide Unit.
- ▶ The Iroquoi Tribe of eastern USA tell a legend of The Three Sisters who gave the three staple foods to the people of the region. Investigate the legend and find out what those three foods were. Look up a recipe for Three Sisters Soup and make some to share with your family or your patrol.
- ▶ “Pease pudding hot; Pease pudding cold ...” is the beginning of a nursery rhyme with its origins in medieval times. Find out what the rest of the rhyme says. Find out what ‘pease pudding’ was and how it was made. You might like to make some yourself to find out what sort of food some of our ancestors ate.
- ▶ Before 1492 when the ‘New World’ was ‘discovered’ by Europeans the western diet was very different to what we eat now. Investigate the sort of foods medieval and renaissance Europeans ate. Find out what foods – especially pulses – the explorers took back to their home countries to be absorbed into the national cuisine. Look at the foods we think of as ‘national dishes’ of France, Spain and Italy today and see what ‘New World’ foods are included. (You may need to find out where the ‘New World’ is.)
- ▶ The Slave Trade, in which millions of African people were captured and taken to the Americas to work on plantations, was another time when pulses and pulse dishes were transplanted from one part of the world to another. See what you can find out about the way food in the Caribbean, South American countries and southern USA was influenced by the introduction of African beans and peas.
- ▶ Investigate the difference between the sort of meals our Australian great grandparents ate and what we can eat today. How has this changed? What sort of ingredients and dishes are common now which were not heard of then? What influence do you think immigration has had on this change?

SOME USEFUL REFERENCES:

Recipes from developing countries www.ifad.org/climate/recipesforchange/recipes

World vegetarian recipes sorted by region or country www.ivu.org/recipes

Bean and pea recipes www.humblebeanblog.com

International bean & pea recipes www.food.com/recipe/

Food history www.foodtimeline.org

Recipe for Pease Pudding www.essentially-england.com/pease-pudding



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