SECTION 2

Plant-Based and Minimally Processed Foods



Plant-based foods

Defining plant-based foods

Diets rich in plant-based foods can promote positive human and planetary health outcomes by providing essential nutrients that support wellbeing while having lower environmental impacts.[3,11]

Plant-based foods include

- **Fruits**
- **Vegetables**
- **Nuts***
- **Seeds**
- **Legumes** (e.g., beans, lentils, chickpeas)
- **Soy foods** (e.g. edamame, tempeh, tofu)
- **Wholegrains**

* See Menu and Meal Quality, Section 8, page 80

Plant-based food and ECEC Services

Research in Australian ECEC services suggests that plant-based foods such as vegetables and legumes are often not included regularly enough on service menus[12,13] or in lunchboxes brought from home.[14] ECEC services can provide opportunities to increase children's exposure to a variety of plant-based foods and foster curiosity and awareness of these foods across the service.

Key areas for plant-based foods in ECEC are in menu planning, food education, engagement with children and families, and the services policy and procedure document or quality improvement plan. The acceptance of plant-based foods can also be supported through the mealtime environment and feeding practices during mealtimes.

NATIONAL QUALITY STANDARD
QA1, QA2, QA6, QA7

Reflective questions

Service leadership team

- *How does our menu planning ensure plant-based foods, like legumes and wholegrains, appear regularly across the menu cycle?*
- *Does our policy or quality improvement plan clearly define what "minimally processed" means for our service, or is this left to individual interpretation?*

Strategies to provide a variety of plant-based foods

The following strategies, together with common considerations, challenges and potential solutions, are designed to support ECEC services to strengthen plant-based food provision through menu planning, food education, and practices that encourage children's acceptance of plant-based foods.

Refer over page for details on challenges/considerations and potential solutions.



Food education

Food based experiences such as children chopping up their own vegetables.

When introducing more legumes to the menu, children can learn about legumes as part of food education – this can include simply talking about the food during the mealtime, or embedding plant-based foods into the curriculum.

Schedule a food-related excursion, such as a visit to a market or local farm.

See Food Education, Section 5, page 101

Cooking experiences can focus on plant-based foods to increase children's exposure to these foods.

Involving children in gardening can encourage acceptance of plant-based food.

See Food Education, Section 4, page 93

See Section 6, page 78



Menu planning

Ensure that plant-based foods are available at every eating occasion.

Plan menus to provide a variety of fruits, vegetables and wholegrains every day – including different types, colours and textures.

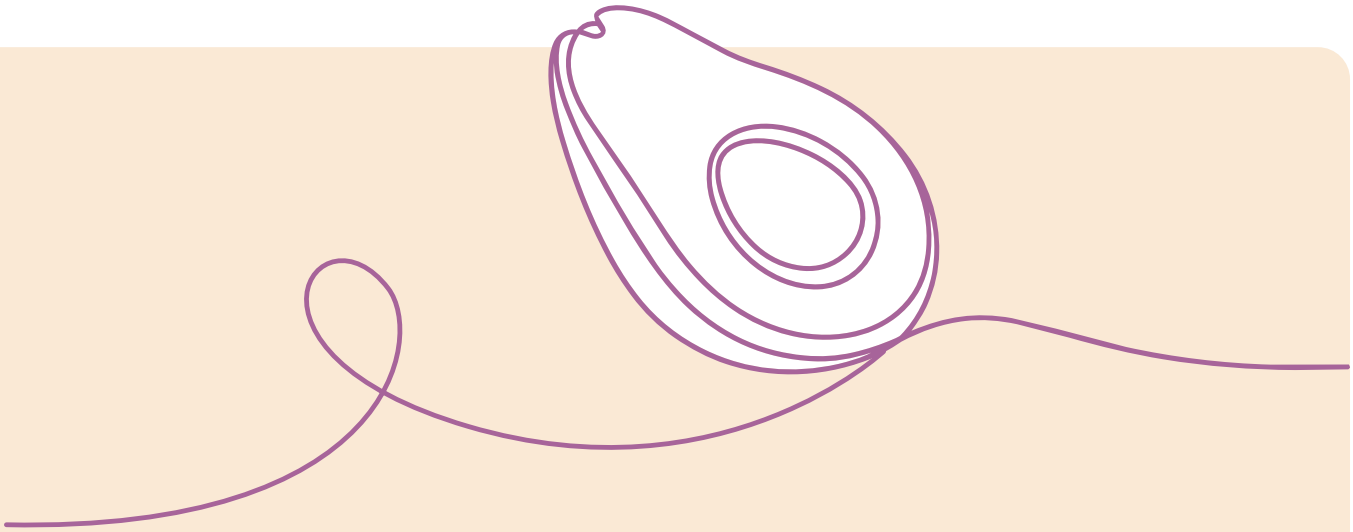
Plan morning tea and afternoon tea to contain vegetables, fruits and wholegrains.

On days when the main meal served is meat-free, prepare meals with plant-based protein (legumes and beans).

Add legumes to dips for morning tea and afternoon tea.

Legumes can be introduced by serving in combination with meat, for example a beef and lentil bolognese.

When introducing plant-based protein such as legumes, add familiar flavours and textures along with the legumes to encourage children's acceptance.



Mealtime practices

Educator can model the authentic enjoyment of plant-based food that they like to eat.

Quality improvement plan/policies and procedures

The service policy and procedures and quality improvement plan can ensure an emphasis on plant-based foods, such as fruits and vegetables, on the menu, and throughout the curriculum.

Clear practice statements e.g. 'We serve one meat-free meal per week (rotated across different days) and these meals contain plant-based protein such as legumes/beans'.

Engagement with children and families

Involve children in planning menus with a wide variety of plant-based foods.

When communicating with families about plant-based meals on the menu, simply use the language or name the food e.g., green curry, pumpkin risotto.

Lunchbox services

As parents provide lunchboxes, it is not the service's responsibility, however some guidance/ideas on types of foods that can be included in lunchboxes can be useful.

NATIONAL QUALITY STANDARD
QA1, QA2, QA5, QA6, QA7

When implementing these strategies services should ensure they continue to meet the relevant food safety, food allergy and regulatory requirements.

See Section 5, page 74

TABLE 3: *Strategies to provide a variety of plant-based foods in ECEC services*[13,25,27,30,31,34,42]

Strategies	Challenges/considerations	Potential solutions
Food education		
Food based experiences such as children chopping up their own vegetables.	Safety concerns of using knives.	Use child-safe knives.
	Educator-children ratio.	Ensure sufficient supervision and appropriate educator-child ratio during activities requiring child-safe knives.
When introducing more legumes to the menu, children can learn about legumes as part of food education – this can include simply talking about the food during the mealtime, or embedding plant-based foods into the curriculum.	Staff skills, experience and confidence in talking with children about food, delivering Food Education, and cooking activities with children may differ.	The Food Education module outlines a range of educational experiences to support this strategy. *See Food Education, Section 2, page 25* *See Food Education, Section 2, page 63*
Schedule a food-related excursion, such as a visit to a market or local farm. *See Food Education, Section 5, page 101*		
Cooking experiences can focus on plant-based foods to increase children's exposure to these foods.		
Involving children in gardening can encourage acceptance of plant-based food. *See Food Education, Section 4, page 93* *See Section 6, page 78*	Not all services can provide a garden.	The Gardens Section outlines different sized gardens that services can consider. *See Section 6, page 78*
Menu planning		
Ensure that plant-based foods are available at every eating occasion.	⚠ **For regional/remote services** Fresh produce may not always be available.	Dried/tinned legumes/beans can be purchased and are cost effective plant-based additions to menus.
		Frozen/tinned vegetables can be used in recipes.
Plan menus to provide a variety of fruits, vegetables and wholegrains every day – including different types, colours and textures.	Lack of confidence/skills in preparing plant-based food.	Staff nutrition training and confidence in preparing plant-based food.
Plan morning tea and afternoon tea to contain fruits, vegetables and wholegrains.	Children's taste preferences for plant-based foods.	Repeated exposure (therefore repeated opportunities) can support taste preferences.
On days when the main meal served is meat-free, prepare meals with plant-based protein (legumes and beans).	Concern that plant-based food will be wasted.	Whole-of-service approaches to plant-based foods, which includes increased exposure, mealtime practice, food education and staff family engagement, increases plant-based food intake without increasing food waste.
Add legumes to dips for morning tea and afternoon tea.	Concern about costs.	Plant-based menus, especially using legumes, are cost effective.

Strategies	Challenges/considerations	Potential solutions
Legumes can be introduced by serving in combination with meat, for example a beef and lentil bolognese.	Additional time required for planning and preparing plant-based foods.	Allowing sufficient time for cooks/chefs to plan and prepare plant-based foods. *See Menu and Meal Quality, Section 5, page 52*
When introducing plant-based protein such as legumes, add familiar flavours and textures along with the legumes to encourage children's acceptance.		
Mealtime practices		
Educator can model the authentic enjoyment of plant-based food that they like to eat.	Educators' food preferences may limit this.	Educators can support food acceptance and preference in young children whilst still honouring their own food preferences. *See Mealtime Environment and Practices, Section 3, page 31*
Quality improvement plan/policies and procedures		
The service policy and procedures and quality improvement plan can ensure an emphasis on plant-based foods, such as fruits and vegetables, on the menu, and throughout the curriculum.	Policy/procedures may not match ability to source ingredients.	Dried/tinned legumes/beans can be purchased and are cost effective plant-based additions to menus. Frozen/ tinned vegetables can be used in recipes.
Clear practice statements e.g. "We serve one meat-free meal per week (rotated across different days) and these meals contain plant-based protein such as legumes/beans".		
Engagement with children and families		
Involve children in planning menus with a wide variety of plant-based foods.		Gather menu feedback from children, educators and families. *See Menu and Meal Quality, Section 7, page 76*
When communicating with families about plant-based meals on the menu, simply use the language or name the food e.g. green curry, pumpkin risotto.		
Lunchbox services		
As parents provide lunchboxes, it is not the service's responsibility, however some guidance/ideas on types of foods that can be included in lunchboxes can be useful.	Families may not pack plant-based foods in lunchboxes. It is very important not to shame children for lunchbox content. In addition, sending notes back to parents often backfires and is not recommended.	The Staff and Family Engagement module outlines some strategies for useful communication between the service and families. *See Staff and Family Engagement, Section 4, page 51*

CASE STUDY

Creating lasting change through a Sustainable Food Awareness Week

SERVICE	Goodstart Endeavour Hills
SERVICE TYPE	Long day care
MEAL PROVISION MODEL	All meals provided on-site
BUSINESS MODEL	Private, not-for-profit
AGE RANGE	6 weeks to 6 years
NUMBER OF APPROVED PLACES	73
NUMBER OF STAFF	17
REMOTENESS AREA CLASSIFICATION	Major cities

LOCATION

Endeavour Hills, VIC



Background

Goodstart Endeavour Hills participated in a study involving the Deakin University and National Nutrition Foundation's "Sustainable and Nutritious Food Environments in Early Childhood Education and Care: a Toolkit".[34] The toolkit was co-designed with the Victorian ECEC sector and informed by the World Health Organization (WHO) and Food and Agriculture Organization (FAO) "Sustainable Healthy Diets Guiding Principles". The toolkit provides practical tips, strategies and links to resources to support services in adapting their everyday practices in line with the guiding principles. Services selected the sustainability practices they wished to implement during a Sustainable Food Awareness Week.

What did you want to do?

The service wanted to focus on two components within the Toolkit:

- Plant-based foods such as fruit and vegetables
- Food waste

As outlined by the Toolkit, they wanted to follow a whole-of-service approach and involve the broader community, such as families and representatives from local schools.

What support did you have?

Support included:

- The Toolkit resource that was sent to them.
- Online access to the "Achievement Program" resources to guide the appropriate amounts of food to serve to children.

What did you do?

Creating a shared vision

The service:

- Worked with staff and children to develop a shared vision for Sustainable Food Awareness Week.
- Coordinated communication with families.

Changes in the kitchen, food provision and waste management

- The service prepared meals using the menu planning guidance amounts but began by serving food in smaller serving bowls.
  - The first serving bowl contained an amount based on staff observations of how much children typically ate and was provided for children to self-serve.
  - A second serving bowl was kept covered and maintained in accordance with food safety and hygiene requirements and made available for children who wanted second helpings.
  - Any remaining food could then be offered to staff, or families who needed an extra meal. In particular, when a family was going through a difficult time or had a sick child at home, leftover food that had been stored and handled in accordance with food safety and hygiene requirements was offered to the family.
- Morning tea and afternoon tea offerings focused on plant-based foods, including a variety of fruits and vegetables.

Mealtime practices supporting child autonomy

- Educators encouraged children to serve themselves an amount they felt they would eat, reassuring them that they could always return for second or third helpings if they were still hungry.
  - Educators checked in with children throughout the meal to support them in recognising their hunger and 'had enough' cues.
- Children were involved in preparing morning and afternoon tea by cutting fruit and vegetables.
- Educators encouraged conversations about the colours, textures and characteristics of the foods being prepared.
- Children were able to self-serve their fruit and vegetables at morning tea and afternoon tea, with additional servings kept covered and available for a period of time in accordance with food safety and hygiene practices.

Child agency and family involvement – meals provided

During the Sustainable Food Awareness Week:

- The service displayed the daily menu alongside pictures of the ingredients and a QR code linking to the recipe.
- Children were invited to add stickers to indicate whether they enjoyed the meal, providing valuable feedback to the cook.
- Families could access the recipes to prepare the meals at home, helping to extend children's food experiences beyond the service.

Food education and mealtime conversations

- Children were engaged in learning about plant-based foods such as fruit and vegetables and where they come from through:
  - Hands-on educational experiences.
  - Conversations while preparing and exploring fruits and vegetables.
- Children were also involved in measuring the amount of plate waste (food scraps) and discussing ways to reduce it.
  - In addition, they removed citrus from food scraps to be able to add the food scraps to the worm farm.
- Through mealtime conversations and the mealtime practices implemented during Sustainable Food Awareness Week:
  - Children recognised that taking only what they needed helped to reduce food waste.
  - Many children expressed pride in listening to their hunger and 'had enough' cues while being mindful of food waste.

Sustainability practices embedded into the information evening

The service's information evening was attended by families and representatives from local schools. During the evening the service:

- Shared information about Sustainable Food Awareness Week.
- Discussed the sustainable food practices they had implemented.
- Shared the Toolkit that supported Sustainable Food Awareness Week.

Families and community members responded positively to the information shared and the service's commitment to sustainability.

Beyond Sustainable Food Awareness Week, which practices became embedded into daily practice?

- Smaller initial servings with opportunities for additional helpings became embedded into mealtime practices.
- Safe management and repurposing of leftover food became part of everyday operations.
- Reduced food waste practices were maintained.
- Child agency in deciding how much to eat and responding to hunger and 'had enough' cues remained a key mealtime practice.
- Food education and sustainability-focused learning experiences continued to be embedded within the curriculum.

The difference it has made

- By improving their food provision and food waste practices, they were able to manage the service's food budget without compromising food quality.
- Food waste was reduced at both the serving and plate waste levels.
- Children developed a greater awareness of environmental sustainability of food, including the importance of reducing and managing food waste.

Top tips

- Start with a shared vision and involve children, educators and cooks from the beginning.
- Focus on being gentle and kind to the environment through everyday sustainable food practices.
- Honour and encourage children's agency and decision-making throughout the process.
- When making changes to sustainability practices, an intensive Awareness Week can be a powerful catalyst for lasting change.
- Small, low-cost changes to everyday practices can make a big difference to sustainability outcomes, including reducing food waste and supporting food budgets.

Prioritise minimally processed foods

Defining food processing and highly processed foods

Sustainable nutritious diets are based on whole, unprocessed or minimally processed foods and limit highly processed foods and drinks.[3] Some food processing can play a beneficial role in high-quality diets, making food available, and in some situations safer. However, some forms of processing can lead to high amounts of salt, added sugar, saturated fats, and can undermine diet quality when consumed in high amounts.[8] Highly processed foods can also negatively affect planetary health through higher greenhouse gas emissions, greater energy use, and increased packaging and waste.[9,10]

Prioritising minimally processed foods in ECEC services

As part of supporting children's nutritional intake, ECEC services can increase children's exposure to whole, minimally processed foods while reducing their exposure to highly processed foods. This can include building awareness of food processing through a whole-of-service approach. Reducing exposure to highly processed foods and supporting consumption of minimally processed foods is related to meal planning, procurement, quality improvement and food education.[3,31] Highly processed foods are often discretionary food, which is not recommended to be served in ECEC services.

Food processing

Food processing changes foods from their natural state to make them safer, easier to store, more convenient to eat, or to improve texture or taste properties. Many foods are processed in some way before we eat them. Common examples include washing and cutting vegetables, freezing fruit, pasteurising milk, milling grains, and canning beans. While many processed foods can be part of a nutritious diet, many processed foods contain higher amounts of added sugars, salt, and saturated fat.

The term ultra-processed food (UPF) is increasingly used in nutrition and public health research. While there is no single agreed definition of UPF, they are generally considered to be foods that are commercially produced using industrial processing techniques and ingredients and additives not commonly used in home cooking. Many packaged food and drink items marketed towards young children in Australia are classified as UPF[35], however, there are ongoing discussions and research about how UPFs are defined and classified, which can limit the usefulness of the term.

Foods classified as UPFs are not all nutritionally equivalent. For example, some commercial breads may be classified as UPF due to the use of preservatives to increase their shelf life, yet they are included in the Australian Dietary Guidelines, fortified with important nutrients, and are a staple food in many Australians' diets. This highlights an important nuance, and this guide therefore focuses on ways to increase the use of minimally processed foods to increase the amount of nutritious and environmentally sustainable food being provided in ECEC settings.

What knowledge and training do ECEC staff need for prioritising minimally processed foods and limiting highly processed food?

- Cook training in meal planning and preparation – that includes skills in the preparation of meals containing whole food ingredients. This should include training that supports minimally processed morning tea and afternoon tea ideas.
- Service leader knowledge on clear supportive policy to support minimally processed food, and considers the service's position on fundraising and celebrations.
- Knowledge and training on cultural sensitivity and awareness of where food insecurity may influence lunchbox contents.

NATIONAL QUALITY STANDARD
QA2, QA7

What is minimally processed food?

Minimally processed foods are whole foods from the five food groups – fruits, vegetables, whole grains, meat/meat alternatives, and minimally processed dairy products or products that you can generally find in a kitchen. These can include:

- Fresh fruit and vegetables
- Eggs
- Fresh and frozen meat, poultry, fish
- Pasteurised milk and plain yoghurt
- Wholegrains – oats, brown rice
- Beans, lentils, chickpeas

What is processed food?

Whilst minimally processed foods should be prioritised, many foods are processed to improve their safety or shelf life. These foods can still be part of a nutritious diet. These can include:

- Tinned vegetables and beans
- Tinned fruit
- Tinned fish
- Cheese (traditional)
- Tofu
- Flour
- Tomato paste
- Vegetable oils e.g., olive oil

Highly processed food that should not be offered in ECEC

- Soft drinks and sugary beverages
- Commercial biscuits or cakes
- Highly processed meats or meat alternatives such as hot dogs/sausages, commercially made chicken/ plant-based nuggets and processed lunch meats or meat alternatives
- Sweets/lollies
- Instant noodles/instant soups
- Commercial baby biscuits, puffs, melt-in-the-mouth snacks

Strategies for prioritising minimally processed foods and limiting highly processed foods

The following strategies, together with common challenges and potential solutions, are designed to support your service to prioritise minimally processed foods while limiting highly processed foods.

Refer over page for details on challenges/considerations and potential solutions.

-

Quality improvement plan/policies and procedures

A clear, detailed, actionable policy/procedure statement on level of processing in meals can support the provision of minimally processed food.

Clear statements on celebration food or fundraising food can support reduction of highly processed food in the service.

Lunchbox services

As parents provide lunchboxes, it is not the service's responsibility, however some guidance/ideas on type of foods that can be included in lunchboxes can be useful.



NATIONAL QUALITY STANDARD
QA2, QA6, QA7

When implementing these strategies services should ensure they continue to meet the relevant food safety, food allergy and regulatory requirements.

See Section 5, page 74

TABLE 4: *Strategies for prioritising minimally processed foods and limiting highly processed foods*[16,31]

Strategies	Challenges/considerations	Potential solutions
Menu planning		
Prioritise minimally processed foods when planning menus. Use whole foods from the five food groups.	Skills required for preparing meals from scratch.	Meals containing whole foods instead of highly processed options can include easy to prepare recipes such as stews and soups.
		Cooks completing training in meal planning and preparation can support the skills required to prepare meals from wholefood ingredients. *See Menu and Meal Quality, Section 5, page 50*
	Additional time required for preparing meals using whole foods.	Provide extra time for menu and meal planning. *See Menu and Meal Quality, Section 5, page 50*
		Batch cooking and freezing foods (with food safety measures in place) can save on time.
Consider morning tea and afternoon tea as "mini meals" and therefore opportunities for additional servings of food from the five food groups. It is often at these meal opportunities that highly processed foods are served in ECEC.	Time allocated to cooks for preparing morning tea and afternoon tea may be limited.	Easy-to-prepare options, such as fruits, vegetables sticks, dips, yoghurt or wholegrain toasts with avocado, hummus, and/or cheese are options that are quick to prepare but does not rely on highly processed, packaged foods. Adapt morning and afternoon tea to increase foods from the five food groups. *See Menu and Meal Quality, Section 6, page 55*
Breakfast – in many services breakfast is available but not prepared or planned by the cook/chef. In some services this may lead to the use of highly processed cereals. In services that opt for breakfast cereals, look for minimally processed cereals with a short ingredient list e.g., oats, wheat biscuits, unsweetened shredded wheat, muesli.	Limited time – especially if educators are caring for children at breakfast time and needing to prepare breakfast.	Quick and easy to prepare options such as whole grain toast with hummus, cheese, boiled eggs, pre-made frittata, yoghurt and muesli, oats, or minimally processed cereals can ensure that breakfasts not planned or prepared by cook can still be nutritious and minimally processed.

Strategies	Challenges/considerations	Potential solutions
	⚠ **For regional/remote services** Access may be a major issue, particularly in remote areas where there may be lower access to fresh, whole foods and a higher reliance on highly processed and packaged foods due to shelf stability.	Preserving food when they are available/in season. Education of kitchen staff and children (and families) into self-sufficiency is beneficial for remote communities and adds to improved health outcomes rather than overreliance on high processed food. A view of "whose job/everyone's job" to preserve and store food can also help to avoid cook/chef burnout.
		Options for whole foods can include frozen or tinned versions.
	Space can be an issue – e.g. freezer space.	If freezer space is an issue, some inexpensive packaged, shelf-stable foods are not considered highly processed – for example brown rice, oats, lentils, beans.
	Inconsistency of supply for example order certain foods and they are not delivered.	Develop flexible menus that can be adapted.
		Coordination with food suppliers may be needed.
Quality improvement plan/policies and procedures		
A clear, detailed, actionable policy/procedure statement on level of processing in meals can support the provision of minimally processed food.		
Clear statements on celebration food or fundraising food can support reduction of highly processed food in the service.		
Lunchbox services		
As parents provide lunchboxes, it is not the service's responsibility, however some guidance/ideas on type of foods that can be included in lunchboxes can be useful.	It may also be that a child from a food insecure home or family situation that limits preparation of fresh food could have higher amounts of highly processed/packaged food in their lunch box and it is important not to shame these children or their families.	The Staff and Family Engagement module outlines some strategies of useful communication between the service and families around lunchboxes. *See Staff and Family Engagement, Section 4, page 51*
	It is very important not to shame children for lunchbox content. In addition, sending notes back to parents is not recommended.	
	Some children may have a strong need for consistency and familiarity with foods due to individual sensory needs, neurodivergence or other feeding considerations. For these children, processed or packaged foods may play an important role in providing predictable and amiliar food options.	The *Mealtime Environment and Practice module* outlines what an inclusive approach to mealtimes look like in practice, including responding to individual sensory needs. *See Mealtime Environment and Practices, Setting the scene, page 12*