



Consumer requirements for commercial plant products

(Case Study *Pinus radiata*)

Teacher Overview

Students will be able to gain an understanding about the characteristics and features that are important to Forestry producers and consumers by completing a detailed case study on the important species *Pinus radiata*. Students will learn about the importance of this species to the Australian economy and recognise how important it is that the industry can produce trees that meet the desired specifications.

Stage

Year 11 Agriculture

Syllabus Links

Outcomes

A student:

P2.1 describes the biological and physical resources and applies the processes that cause changes in plant production systems

P3.1 explains the role of decision-making in management and marketing of agricultural products in response to consumer and market requirements

Students learn about:

Consumer and market requirements for commercial products

Students learn to:

Recognise the features of plant products that are important to consumers



Lesson Overview

Activity One:

The class or individual students will view a video of the species (links below and also in student worksheet) as an introduction to the industry and the species of plant that will be their case study. Students will then complete a cloze worksheet using a Forestry Corporation source containing information regarding the characteristics and features of the Radiata Pine. (Approx 20 minutes)

Activity Two:

Students should then complete an annotated diagram to “explain” the desirable features of the tree. Instructions regarding the use of two colours to annotate the diagram are attached to the student worksheet. This is intended to allow students to focus on the “explain” verb i.e. cause and effect. Additional sources are used for this activity if there is suitable teaching time. These include a documentary video on the species by the Forestry Commission of NSW and a factsheet from the Forestry Corporation. (Approx 40 minutes).

Activity Three:

Students complete their own diagram of an undesirable plant based on their knowledge of the previous activities. (Approx 10 minutes)

Activity Four:

To conclude the lesson, students complete two revision questions on the material they have covered. (Approx 10 minutes).

Resources

- a) Student Worksheet
- b) Online Sources

Activity One

<https://www.youtube.com/watch?v=ft7KsDzU0gw> (5.34)

<http://www.forestrycorporation.com.au/our-forests/education/resources-and-publications/wild-forest/woodwork/info/forest-supermodels/radiata-pine/remarkable-pine>



Activity Two

http://www.forestrycorporation.com.au/_data/assets/pdf_file/0003/238449/radiata-pine.pdf

<https://www.youtube.com/watch?v=vcckY-YW5Ko> 19.14

Sample Answers

Activity One

A typical radiata pine tree in NSW is around **35** metres tall and **half** a metre across at chest height when harvested at about age **35 years**.

"It is a tree which is suited to a **considerable** range of growing conditions, is easily **raised** and planted, and provides larger **yields** of usable timber in a **shorter** time than many **native** species.

The tree has many uses some of which include: (select at least 4)

- A) **Converted to pulp**
- B) **Stained for furniture use**
- C) **Sawn and used for building of house frames**
- D) **Playground equipment**

The tree is a **SOFTWOOD** species which means that:

The wood does not have pores and has long fibres compared to hardwoods

Australian plantations amount to **740 000** ha





There are around 251 500 ha of radiata pine plantations in NSW. Of these plantations, 64 500 ha (25%) are private plantations and 187 000 ha (75%) are state owned plantations.

When grown as a plantation tree, radiata pine is usually a tall straight tree with small branches, except on the edge of the plantation where the accessibility to light and space allows the trees to grow large branches. Genetic improvements have contributed to the improvement in growth rates and form (straightness and uniformity) of plantation-grown radiata pine.

The tree has a wide tolerance to site and rainfall however; the species performs poorly in heavy clay soils. Suitable soils should have a depth of at least 50cm with well-drained subsoil and weathered rock, which is penetrable by water and root systems.” Forestry Corporation accessed 4th April 2017

Activity Two

Pinus radiata

Students will have many answers to this. Their answers should be check for a link between the feature and why it is desirable to a stakeholder in the timber industry whether it is to be used for pulp or housing etc.

Activity Three

Some of the features that may be included in the diagram are

- Double leading branches
- A tree that is not straight
- Many branches and therefore many knots affecting the strength of the timber
- Small yields
- Slow growth rates
- Affected by pests



Activity Four

Complete the following questions.

1. Identify 3 consumer and/or market requirements of a plant product you have studied.

1 mark for any features that are accurate.

2. For one of the requirements you have identified above, explain why this feature is important to consumers and/or the market.

1 mark – what the feature is

1 mark – a clear relationship between the importance /value of the feature and why it is important.

Sample answer:

Radiata Pine is a **fast growing, high yielding (timber) plant**. These genetic traits are desirable to all stakeholders; especially producers and manufacturers. The producer can experience **higher profits at a quicker turnover** and the manufacturer is able to access the **quality and quantity of the product** they need to produce the final output.

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Forest Learning

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