



Department of  
Primary Industries and  
Regional Development

## Journal of the Department of Agriculture, Western Australia, Series 3

---

Volume 3  
Number 2 March- April, 1954

Article 10

---

3-1954

### Peanut growing on the levee soils of the Gascoyne River

J A. Lawson  
*Department of Agriculture*

Follow this and additional works at: [https://library.dpird.wa.gov.au/journal\\_agriculture3](https://library.dpird.wa.gov.au/journal_agriculture3)

---

#### Recommended Citation

Lawson, J A. (1954) "Peanut growing on the levee soils of the Gascoyne River," *Journal of the Department of Agriculture, Western Australia, Series 3*: Vol. 3: No. 2, Article 10.  
Available at: [https://library.dpird.wa.gov.au/journal\\_agriculture3/vol3/iss2/10](https://library.dpird.wa.gov.au/journal_agriculture3/vol3/iss2/10)

This article is brought to you for free and open access by the Agriculture at Digital Library. It has been accepted for inclusion in Journal of the Department of Agriculture, Western Australia, Series 3 by an authorized administrator of Digital Library. For more information, please contact [library@dpird.wa.gov.au](mailto:library@dpird.wa.gov.au).

# PEANUT GROWING ON THE LEVEE SOILS OF THE GASCOYNE RIVER

By J. A. LAWSON, B.Sc. (Agric.), Agricultural Adviser.

**R**ECORDS show that in 1920 a number of blocks of land along the Gascoyne River were thrown open for the purpose of commercial peanut production, the main purpose being to establish ex-service settlers on this land. Seed was planted on these blocks but failed to germinate; rumour has it that the nuts had been previously roasted! Ten years later, in 1930, Mr. J. Buzolic, an early settler in the area who had achieved success in growing tomatoes and beans, planted a crop of peanuts from which he claimed reasonably good returns. Thirty-six cornsacks filled with peanuts were shipped to Perth in what is believed to be the first West Australian commercial venture into peanut growing. The prices received for the nuts at that time were such, however, that the crop could not compete favourably with others under irrigation conditions.

In September, 1952, the first comprehensive peanut trial was conducted at the Gascoyne Research Station, its purpose being to investigate the methods of irrigation and the phasic development of the crop under Carnarvon conditions.

Three methods of irrigation were tested, these being as follows:—

1. Rough bays were formed and the soil completely flooded. When dry enough to be workable the nuts were planted in rows, a small ridge being formed over each row so as to leave wide shallow furrows between the rows. As the plants attained greater size "hilling up" was carried out, giving larger ridges and deeper furrows.

2. Shallow furrows were formed 30 inches apart. This left a wide low ridge in the centre of which the nuts were planted. Hilling up was done as with Method 1, deepening the furrows. The first watering was given after planting.

3. Deep furrows were ploughed and prepared as for bean planting. The nuts were planted just above the water-line on each side of the furrows. Hilling up is not possible under this system.

Eight plantings were made, one each fortnight, so that the phasic development under changing climatic conditions could be studied.

The trial was carried out under difficult conditions, since the soil was heavy and structureless, the area having been bare and windswept many years.

In the irrigation trial, Method 1 gave the best results, since the gradual forming of a ridge gives better lateral pene-



Fig. 1.—Mr. Smeed standing beside one of the 68 stooks of nuts harvested from just under two acres.



Fig. 2.—Two average plants of peanuts selected at random.

tration of the water and leaves the soil in a friable condition more suitable for "pegging".

Method 2 was unsuccessful due to lack of lateral penetration, characteristic of most Gascoyne soils. Germination and pegging were poor.

Method 3 gave a good germination, but poor pegging. The nuts were also very difficult to harvest.

The phasic development trial indicated that October and November were the best planting months. Earlier plantings took too long to come to maturity, while later plantings flowered and pegged too early.

### COMMERCIAL PLANTINGS

In December of 1952, several commercial plantings were made also, and much valuable information of a practical nature was gathered from these. The most successful grower was Mr. H. Smeed, who, after a number of setbacks, obtained 80 cornsacks of nuts in the shell from just under two acres. The crop was sown mechanically, but unfortunately the planting machine left gaps in the crop, so that, even though germination was good, the stand was uneven. Despite this, the crop developed very well, although, had hilling-up been

possible when pegging was taking place, even more nuts would have formed. After stooking, a week of heavy rains was experienced, and a mould formed on the leaves and discoloured the nuts. This, too, caused considerable loss. The remaining nuts, although having discoloured shells, contained excellent kernels. The only pests of any importance were crows and foxes, which dug up the seed just after planting in some areas. In all plantings, the variety Virginia Bunch was used.

### GROWTH HABITS

The peanut (*Arachis hypogaea*) is a legume, and is therefore capable of forming a "symbiotic" relationship with certain species of bacteria which take up atmospheric nitrogen for use in their own body processes. These bacteria, attached to the roots of the plant, then "exchange" nitrogen products for carbohydrates formed by the plant so that each member benefits. When such bacteria are active, nodules form on the roots of the host, and these, when broken, show a pink colour internally. Under certain conditions excess nitrogen products are liberated into the soil. The peanut plant itself is of a



Fig. 3.—The size of this plant may be estimated by the matchbox in the centre.

# NEW

and with more  
**FARM-RIGHT FEATURES**  
than any other tractor



**FARM-RIGHT IN ALL-PURPOSE  
CAPACITY, IN ALL-FARM  
USEFULNESS, IN ALL-JOBS  
ECONOMY . . .**

The New Fordson Major's list of farm-right features extends far beyond those mentioned on the right. Your Fordson Dealer will check the whole list over with you. He will show that each of these many farm-right features contributes to new, overall tractor-efficiency . . . meaning less work per farmer and more income per acre.

▶ **RANGE OF CROWN  
IMPLEMENTS TO INCREASE  
YEAR-ROUND VERSATILITY** ◀

In combination with new "touch control" hydraulics, these implements are matched to the New Fordson Major's better efficiency. Your Fordson Dealer will detail the ways in which they increase the tractor usefulness and time-cutting in all manner of farm jobs.

**NEW 6-SPEED  
TRANSMISSION**  
giving right gear for every job

**NEW MODERN ENGINES**  
Diesel or Kerosene

**NEW DRIVER COMFORT**  
and ease of control

**NEW TOUCH-CONTROL  
HYDRAULICS**

**NEW LOW CENTRE OF  
GRAVITY**  
with high under-sump clearance

Kerosene model  
with pneumatic  
tyres **£918**

Diesel model  
with pneumatic  
tyres **£1077**

PRICES F.O.B. FORD PLANTS

**YOU'LL FARM-RIGHT WITH THE**

**-NEW FORDSON  
MAJOR**

LATEST  
PRODUCT OF  
AUSTRALIA'S  
GREATEST NAME  
IN POWER  
FARMING

FM72-FP24

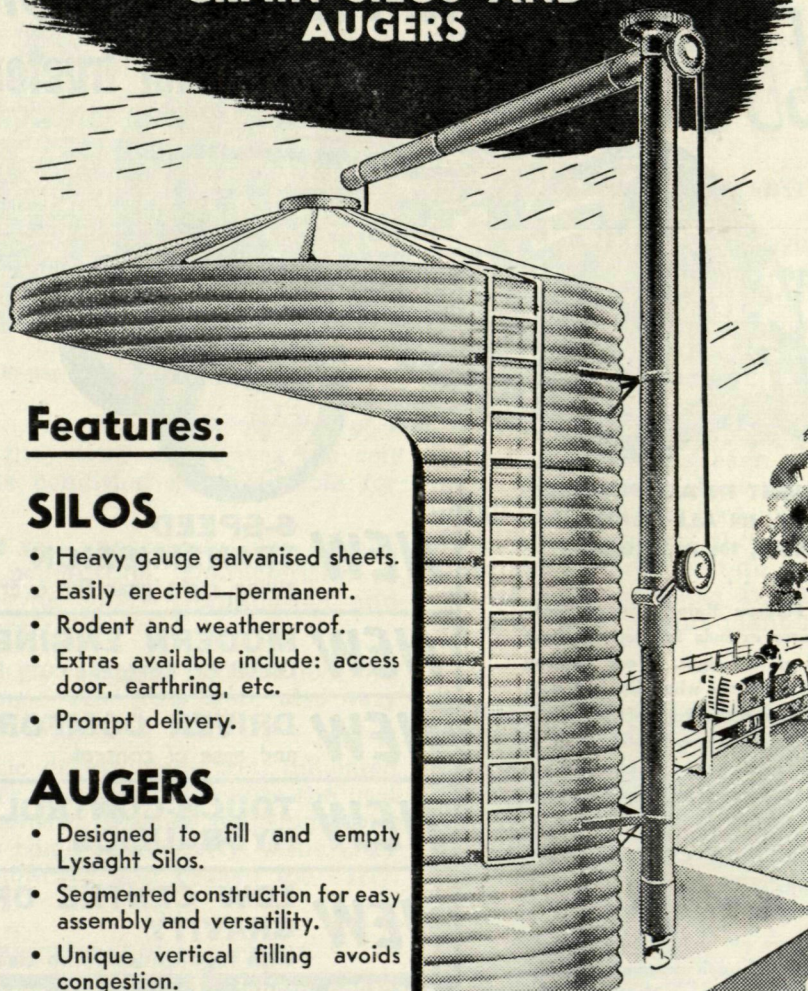
FORD MOTOR COMPANY OF AUSTRALIA PTY. LTD.

Please mention the "Journal of Agriculture, W.A.," when writing to advertisers

# Cut your harvest costs!

with **LYSAGHT**

## GRAIN SILOS AND AUGERS



### Features:

#### SILOS

- Heavy gauge galvanised sheets.
- Easily erected—permanent.
- Rodent and weatherproof.
- Extras available include: access door, earthing, etc.
- Prompt delivery.

#### AUGERS

- Designed to fill and empty Lysaght Silos.
- Segmented construction for easy assembly and versatility.
- Unique vertical filling avoids congestion.
- Vertical sets complete with wall brackets, chute tubes, etc.

#### AUGERS:

Vertical (as illustrated) from ..... £91  
Popular Type for 2000 Bushel Silo ..... £120  
Mobile 20ft. with Carriage ..... £195  
(Motors Not Provided)

#### CURRENT PRICES

Lysaght's Fremantle Store:

|                  |       |      |
|------------------|-------|------|
| 500 Bushel Silo  | ..... | £80  |
| 1000 Bushel Silo | ..... | £136 |
| 2000 Bushel Silo | ..... | £209 |
| 3000 Bushel Silo | ..... | £268 |
| 3500 Bushel Silo | ..... | £294 |
| 4500 Bushel Silo | ..... | £350 |

Write for further information and agents' names to

**LYSAGHT'S WORKS PTY. LTD., NEWCASTLE**  
or **JOHN LYSAGHT (AUST.) PTY. LTD.,** IN ALL CAPITAL CITIES.

Please mention the "Journal of Agriculture, W.A.," when writing to advertisers

semi-prostrate habit, and is composed of a large number of tillers which, when fully grown, may cover a circle of three feet diameter. At each leaf axil the flowers appear, yellow and pea-shaped. When each flower dies back, a "peg" or haulon forms at its point of attachment, from which position it grows rapidly towards the ground, which it must be able to penetrate easily. At a depth of 1 in. to 2 in., the hard top of the haulon enlarges and forms the nut. This habit is very similar to that found in subterranean clover.

Although only an annual, the plant is quite deep-rooted, and, once established, can withstand quite dry conditions. It is a summer grower, and under good conditions requires only five months from planting to harvesting.

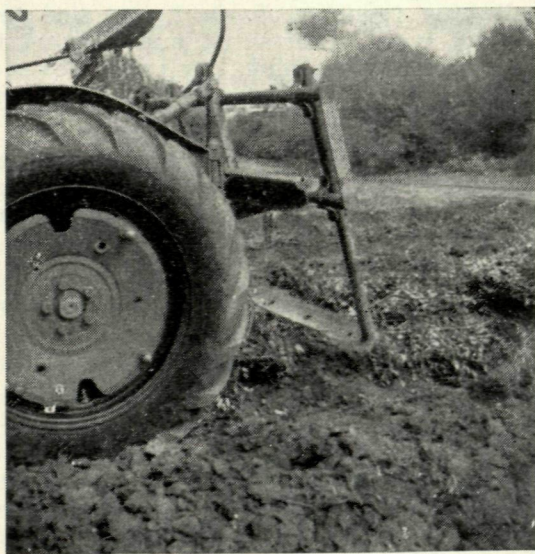


Fig. 4.—A home-made cutter-bar attached to the hydraulic lift system of an Allis Chalmers tractor.

## PEANUT GROWING UNDER CARNARVON CONDITIONS

1. **Selection of Soil**—A light, sandy soil is essential for best yields, since this allows easier emergence, pegging, and simpler hilling up during growth. Heavy clay soils should be avoided.

2. **Levelling**—Since the crop is grown under a system of furrow irrigation, the land must be very well levelled before planting. Rough preparation can lead to uneven watering, which greatly diminishes yields in any irrigated crop.

3. **Sowing and Ridging**—The best technique experienced to date, is that described in "Method 1" of the Gascoyne Research Station experiment. This requires three or four "hillings" during the season, which can be done with implements behind a tractor. When watering, the ridges should never be covered.

4. **Seed Treatment**—Certain moulds, such as those of the Penicillin species, will often attack machine-shelled seed, lowering the germination percentage. A light dusting with fungicides such as Tetroc or Ceresan will help prevent this. The latter will also kill the "Crown Rot" organism, if present. A bacterial culture, suitable for the inoculation of peanuts, may be obtained from the Department of Agriculture at a small fee. This, when applied according to the directions attached, will assure the establishment of the symbiotic relationship previously described, thus decreasing the likelihood of any nitrogen deficiency arising. The culture should be applied before the fungicide.

5. **Spacing and Seeding Rate**—The minimum distance between rows should be 30 inches; any wider spacing should be governed by the "track" of the implement used. A spacing of 9 in. to 12 in. between plants, though this may seem crowding, still allows complete pegging, since the bulk of useable nuts are found within the inner 12 in. of the plant. A depth of 2 in. is ample for sowing. For a width of 36 in. between rows and a plant spacing of from 10 in. - 15 in., 30 lb. seed per acre is recommended for the Virginia Bunch variety.

6. **Fertilisers**—Under Carnarvon conditions, if the bacterial culture is used on the seed,  $1\frac{1}{2}$  to 2 bags of blood and bone to the acre, applied at (or just prior to) planting time, should be ample.

7. **Water Requirements**—Frequency of watering will depend on the rate at which the soil dries out. In lighter soils, for plantings made in October-November, twice weekly waterings should be made for the first fortnight after emergence. The rate may then be cut down from once per week to once every ten days as the plant develops its tap root. When the kernels in the bulk of the nuts are fully formed, no further watering is necessary.

8. **Weed Control**—It is advisable, after levelling the area, to pre-irrigate it, and allow weeds to germinate. These should be turned in just prior to planting. If hilling is done at regular intervals, this too will aid in control.

9. **"Hilling up"**—The throwing up of soil from the furrows, to increase the size of the ridge will not only aid the plant in "pegging", but makes irrigation more simple. The final hilling should be carried out when the last flowers are forming, and should bring the width of the ridge to at least 15in.

10. **Harvesting** — The ridges finally formed make the first step in harvesting easier to carry out mechanically. A "cutter-bar" attached to the tool-bar of a tractor is sunk to a depth of 2½in. to 3in. This cuts the tap root and loosens the soil around the nuts. The plants are then turned over and allowed to dry out for several days (depending on weather conditions). Stooking is then carried out, small stacks four feet in diameter and four feet high being formed, the nuts turned towards the centre so that they may be allowed to "sweat". After two or three weeks of curing in the stooks, the plants

are fed into a thrasher, which, operating on a principle similar to that of the wheat harvester, removes the nuts and discards the plants. In some areas, the tops are used as a stockfood after curing.

### MECHANICAL AIDS

Except for stooking, it is possible to carry out the entire programme mechanically (i.e., by tractor and implements). The first ridges, formed at planting, may be thrown up by delvers attached to a planting machine. Hilling up requires a double-mouldboard or double-disc type delver, set deeper with each successive operation. Types of cutter-bar have now been developed to turn the plant over after cutting and loosening; and in some areas, even the stooking has given way to win-drawing (done mechanically by side delivery rake). Threshing and bagging is also done by machine. By these means a substantial acreage can be handled, even under irrigation.

A good demand still exists for peanuts, and I believe that, under good conditions, yields of up to two tons an acre can be obtained on the Gascoyne.

**"TOO GOOD TO MISS"**



**K.L.G.**  
**"CORUNDITE"**

Modern agricultural mechanisation has given the man-on-the-land many different types of petrol-driven farm machinery, from huge tractors and lighting plants to small one-cylinder stationary engines for pumping etc. To keep these machines operating at their best, always insist on K.L.G. corundite sparking plugs... there is a correct type for every petrol-driven engine.

**S. SMITH & SONS (AUST.) PTY. LTD.**  
47 YORK ST., SYDNEY.