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PROGRESS REPORT 1971

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All trials examined moisture profiles and root growth under wheat. With the exception of a preliminary trial on a "Wodgil" soil, effort in 1971 was aimed at consolidating previous experimentation.

1. Effect of soil type on root growth and moisture use by wheat. 71NO32

Location - Tammin (a) Deep sand - Property of Mr. B. Nottage.
(b) Grey clay)
(c) Sand/clay) Property of Messrs.
(d) Sandy loam) D. and P. York.

History - Sites on the property of Messrs. D and P York -

Old pastures previously sown to barrel medic. Regeneration in 1970 was poor. Site on Mr. B. Nottage's property - old clover land.

Experimental Details

Gamenya wheat was sown at the rate of 10 kg/ha on each site. Super phosphate and Urea rate were of the order of 22 and 10 Kg/ha.

Sites were sown on the 24th and 25th June 1970.

General Comments

Root data confirmed the consistent pattern of root penetration to depth as obtained in 1969 and 1970. Basically, two stages of penetration were recognisable.

(a) After initial penetration of primary seminal roots to 10 to 15 cms, rate of penetration is slow to 6 to 8 weeks from sowing. Depending on soil type, depth of penetration at this stage is around 15 to 30 cms.

(b) After 6 to 8 weeks from sowing, rate of penetration increases with maximum rates being achieved over the 9-13 week period from sowing. Maximum depths are reached around 13 to 14 weeks after sowing. These were of the order of 30 cms with the grey clay. 45 to 60 cms for the sand/clay and 150 to 180 cms with the deep sand and sandy loam.

The basic pattern of root penetration to depth is to be used to estimate moisture availability to wheat at other locations.

Moisture profile data are available for the 1969, 1970 and 1971 seasons.

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2. Moisture profile and root growth under wheat on a "Wodgil" soil. 71 MO 19

Location - Kirwan - Property of F.V. Moore and Co.

History - Cleared 1969/70 and sown to cereal rye 1970.

Experimental Details.

Gamenya wheat was sown at the rate of 10 Kg/ha and subjected to several superphosphate and urea treatments.

General comments

Due to poor land preparation and high germination of cereal rye from the previous year's crop, yield data were not collected. The data of Dr. M.D. Carroll describe yields on an adjacent plot.

Moisture profile and root data have as yet shown no reason for poor performances on Wodgil soils. Bulk density and moisture availability data are being accumulated now.

3. Effect of time of sowing on moisture use and root growth of wheat.

Location - Wongan Hills Research Station on Wongan loamy sand.

Experimental Details

Gamenya wheat was sown at the rate of 10 Kg/ha at 5 times of sowing. These were at 2 weekly intervals commencing May 23, 1971. Superphosphate and urea rates were of the order of 22 and 10 Kg/ha.

General Comments

The consistent patterns of root penetration to depth which were evident for each sowing were similar to those described for Tammin. The stage of rapid penetration to depth commenced a week earlier with the first sowing than with each of the others.

Maximum depths of root penetration were around 150 to 180 cms. Roots of the last sowing (July 21) did not penetrate beyond 150 cms.

Moisture profile data are also available.

February 23, 1972
DT:EC