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5. MOLYBDENUM SEED DRESSINGS ON WHEAT
87M6/1213 EX

- Aims:
- I. To compare the relative effectiveness of molybdenum as a seed-dressing to the conventional method of soil application.
 - II. To examine the uniformity of distribution of different forms of molybdenum dressed onto the seed of wheat by different methods.

Location: South Carrabin Research Station

Soil: Acidic, yellow sandy earth
Newland

Results: Sown - May 22

- Superphosphate at 300 kg/ha (copper and zinc basals previously sprayed onto soil)
- Sulphate of ammonia at 200 kg/ha topdressed
- Wheat (Kulin) at 40 kg/ha

Harvested - December 4.

Table 7. Effect of form of molybdenum and method of application on the germination and grain yield of wheat

Form of molybdenum	Method of application	Rate of application (g/ha)	Germination (%)	Grain yield (t/ha)
Nil	-	-	98	2.55
Na ₂ MoO ₄ - coarse powder	Soil	25	-	2.58
		75	-	2.47
		150	-	2.22
		300	-	2.38
Na ₂ MoO ₄ - solution	Seed, laboratory	5	95	2.67
		10	98	2.39
		25	98	2.44
		75	93	2.33
	Seed, field	25	100	2.42
Na ₂ MoO ₄ - coarse powder	Seed, laboratory	25	98	2.64
	Seed, field	25	95	2.48
Na ₂ MoO ₄ - fine powder	Seed, laboratory	25	97	2.44
MoO ₃ - fine powder	Seed, laboratory	25	98	2.39
	Seed, field	25	96	2.64
MoS ₂ - fine powder	Seed, laboratory	25	94	2.42

* The seed was germinated in pots of white sand kept moist. Although per cent germination was not affected, the seedlings receiving the highest level of sodium molybdate (75 g/ha in laboratory) were slightly shorter with an orange tinge at day 10.

Na₂MoO₄ - sodium molybdate
MoO₃ - molybdenum trioxide
MoS₂ - molybdenite

Laboratory application - Applied by shaking in plastic bags.

Field application - Solution applied by spraying the wheat passing through the bottom of a field auger with a Malathion spray unit; powder applied by a Jackman seed pickler attached to the bottom of the field auger.

Results:

Results of analyses of plant tissues for concentrations of molybdenum have yet to be completed. Preliminary results indicate:

1. Although the plots of wheat which had not recieved molybdenum were observed to be paler and slightly shorter during stem elongation, a grain yield response to the application of molybdenum either to the seed or soil was not evident. The absence of a grain yield response to molybdenum at this site and in the trials 82No7 and 85M40 (where responses were expected) suggests some "seasonality" exists with molybdenum deficiencies.
2. Seed-dressing the various forms of molybdenum examined appeared to have little effect on the germination of the wheat.