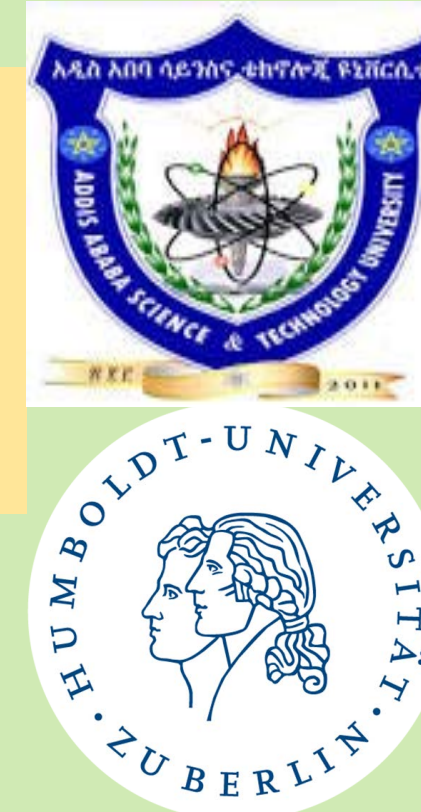




CULTIVATION OF NIGER SEEDS –A TREASURE PLANT TO SECURE AVAILABILITY OF EDIBLE OIL IN ETHIOPIA



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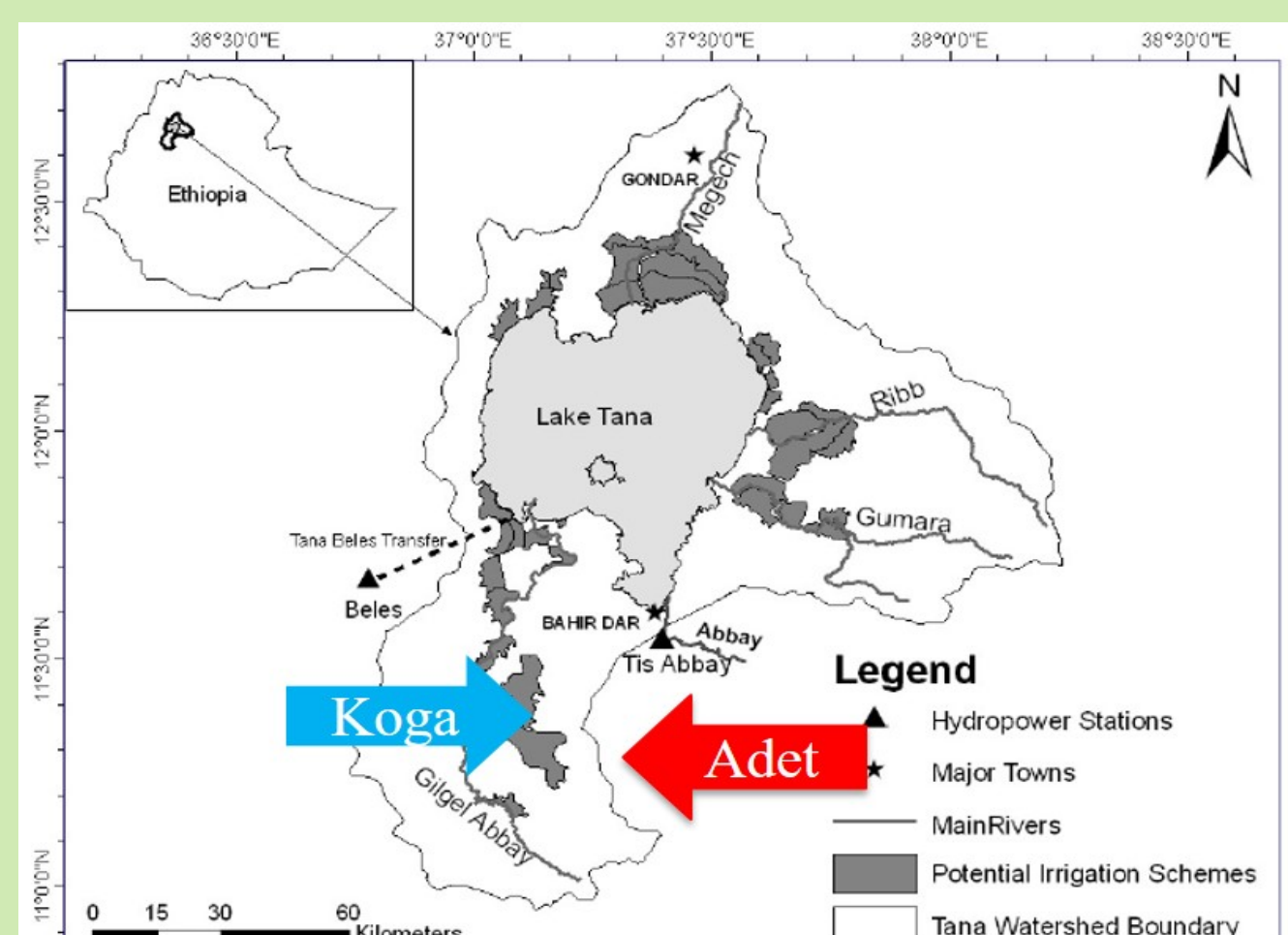
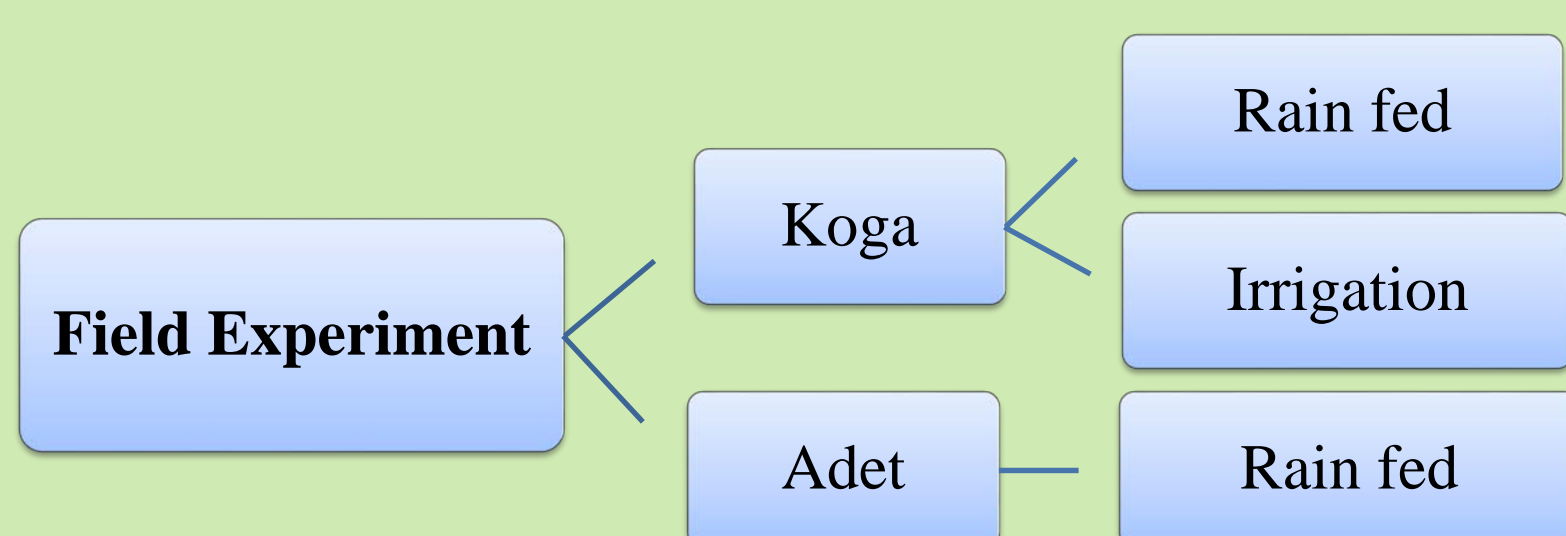
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Introduction

The availability of edible oil in Ethiopia is very limited, 80% of edible oil consumption is imported; typical Sesame and Linseed are among the major oilseeds produced in Ethiopia other plants as rape or sun flower are not cultivated. Niger Seed (*Guizotia abyssinica* Cass.) is native to Ethiopia and has a very good quality for edible oil, but underestimated in this regard and exported as birdfeed in industrial countries. In northern Ethiopia as in the highland area of Amhara Region Niger Seed was cultivated long time by small holder farmers. The aim of this study was to identify land with favorable soil and climate conditions as well sufficient water availability for cultivation of Niger Seed,

Material and Methods

- Cultivars (Fogera and Kuyu)
- Seed rate (3 levels: 5, 10 and 15 kg/ha)
- Nitrogen rate (3 levels: 13, 23, and 33 kg/ha)
- Locations- Koga and Adet
- Irrigated/non irrigated (Koga)
- Phosphate at 23 kg/ha uniformly



Botanical Characteristics of Niger Seed (*Guizotia abyssinica* Cass)

- Family: Asteraceae
- Annual herbaceous plant
- Dicotyledonous herb, moderately to well branched and grows up to 2 m tall.
- Genus *Guizotia* consists of six species.
- The species are mostly self-incompatible and insects are the major pollinating agents.
- 3.2 – 3.6 g Thousand Seed Mass
- Traditionally, a fallow crop
- Grown up to 2 500 m altitude.
- growing under moderate rainfall conditions
- Yield of 500 to 600 kg/ha.
- Oil content of 38 to 40%

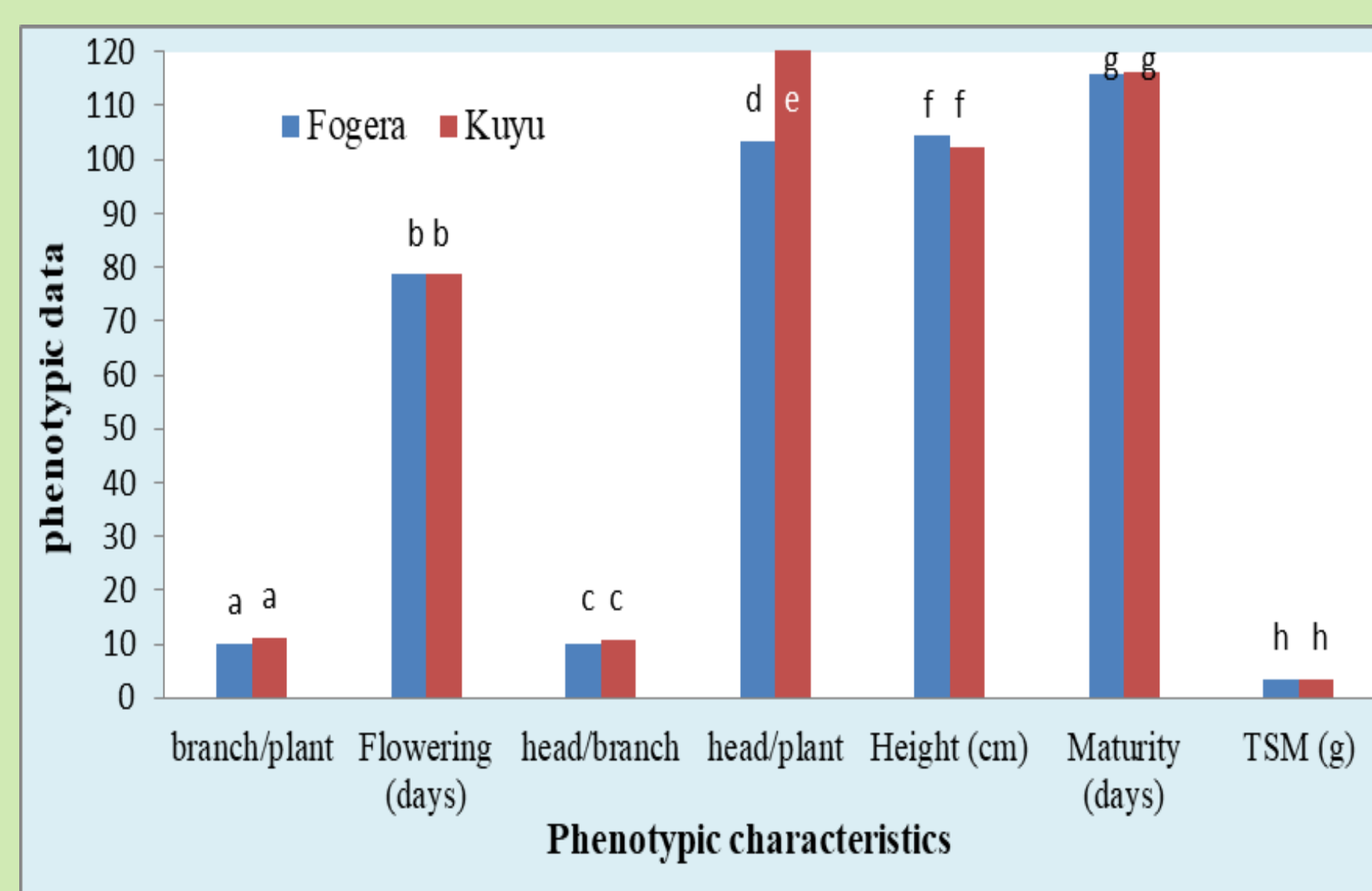


Conditioning:

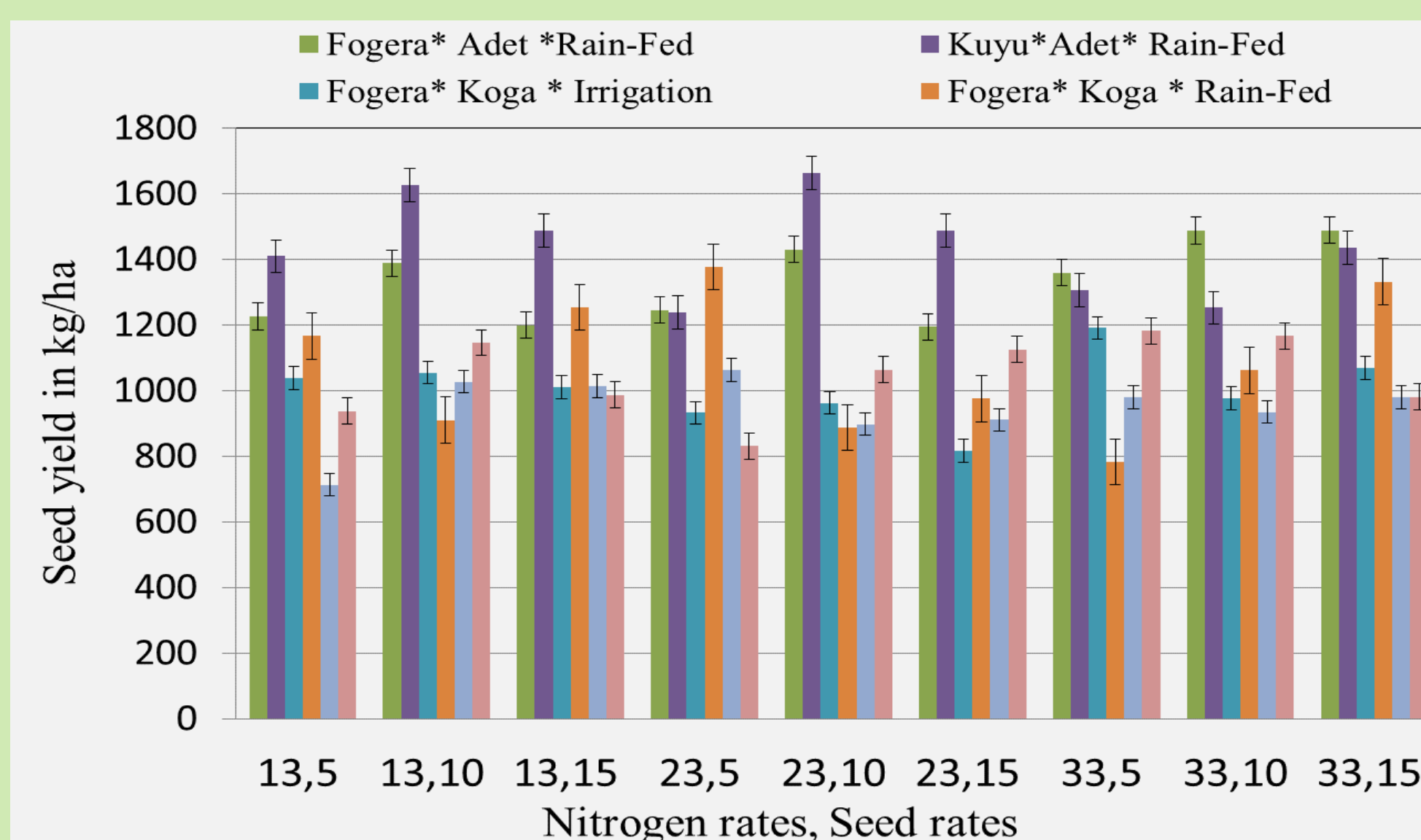
1. Temperature (70, 80, 90°C)
 2. Time (20, 30, 40 min)
- Feed rate (3, 4.25 kg/hr)



Results and Comments



Phenotypic characteristics of Fogera and Kuyu plant cultivars during cultivation in Koga with irrigation (Tukey test, P<0.05)



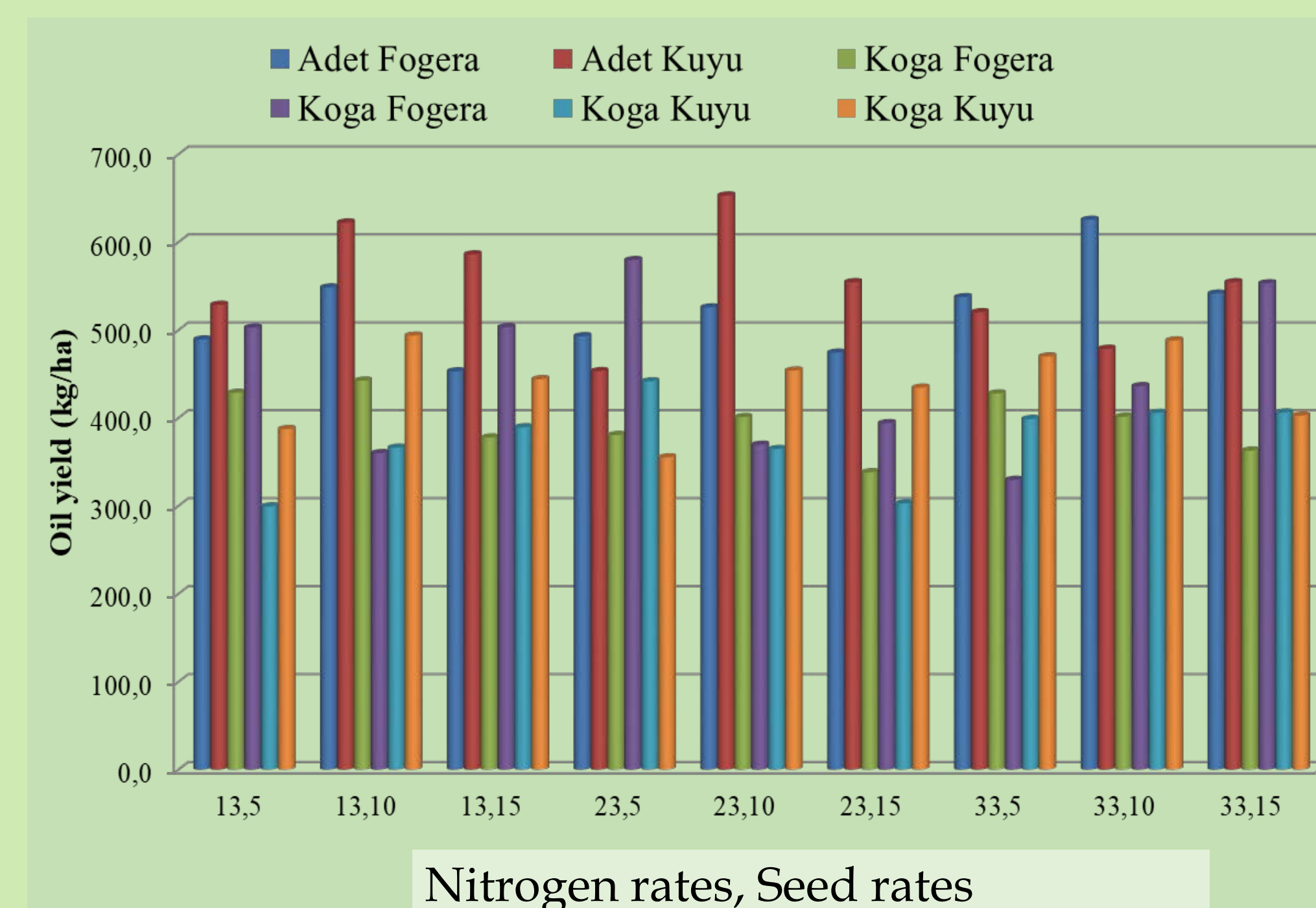
Yield(kg/ha) of Niger seeds with different Nitrogen and Seed rates on two locations in the Highland of North Ethiopia in the region Adet and Koga

Conclusions

- The Niger seed yield improvement was possible mainly due to suitable location and water supply.
- The phenotypic differences between the two varieties can be neglected.
- The Oil yield was also affected by Location, Water supply, Nitrogen and Seed rates.
- Efficiency of oil expression could be raised by conditioning temperature
- The oil millers in Ethiopia can play their role if institutionalized technology support is provided in addition to oilseed supply.
- It could be realized that either fresh type seed or properly stored seed can be used for virgin oil production
- Vitamin E content was significantly affected by the nitrogen rate

Efficiency:

investigations of various factors influencing seed oil efficiency



Oil yield(kg/ha) of Niger seed with different Nitrogen and Seed rates on two locations in the Highland of North Ethiopia

