Practice abstract #3.8

Use of intercropping with hull-less (naked) barley to support pea production

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CHALLENGE

Spring combining pea is a low-input crop that fixes its own nitrogen, and there is growing demand for pea protein for both human food and livestock feed. Unfortunately, the yield can be variable and crops often lodge causing harvesting difficulties and loss of quality.

SOLUTION

Intercropping peas with hull-less barley was tested using five types of barley at two proportions.

- Sole crop cereal, sole crop pea, cereal at 50% of sole crop rate:pea at 50% rate (50:50), cereal at 30% of sole crop rate: pea at 100% rate (30:100).
- 5 types of hull-less barley differing in height and potential competiveness.

Yields were measured and the Land Equivalent Ratio (LER) was calculated. LER is the sum of the areas of land (ha) of sole crops required to produce the same as 1ha of intercrop.

OUTCOME

- There was a significant effect of the barley variety on LER.
- The highest LER and barley yield was Planet/S6. This variety tillered aggressively, maintaining higher yield in intercrops at the expense of pea yield.
    - There was no significant difference in LER 50:50 vs. 30:100, both = 1.16, 50:50 barley = 0.7 pea = 0.46, 30:100 barley = 0.36, pea = 0.8
    - The cereal intercropping reduced lodging of peas from 100% to 0%.
    - The barley variety significantly affected pea yield in intercrop.
    - Oak Ruby (short stiff straw) gave the highest pea yield in intercrop, Planet/YDN (tall) the lowest.

PRACTICAL RECOMMENDATIONS

If the objective is to maximise pea yield, sow the cereal at 30% of the sole crop seed rate.

Choose a short barley variety.

FURTHER INFORMATION

Updates on Twitter
@naked_barley

About CROPDIVA

CROPDIVA wants to put 6 underused arable crops back in the fields:
oats, hull-less barley for human consumption, triticale, buckwheat, faba beans and lupins.
27 European partners are joining forces to enhance agrobiodiversity in Europe.
They will achieve this by focusing on crop diversity and creating local value chains. The project is running from September 2021 to August 2025.

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