Crop Rotation Practices in Tobacco

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Crop rotation is the practice of growing different types of crops in a specified sequence in the same field in successive seasons, in contrast to continuous cultivation of one crop or to haphazard crop successions.

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Rotation has long been an important practice for maintaining and, ideally, improving soil fertility and condition, minimising soil erosion and slowing down the build-up and spread of pests, diseases and, in some cases, weeds.

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Crop rotation is one of the corner-stones of Integrated Pest Management and, therefore, a key practice for achieving sustainable crop production.

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Survey of rotation systems

- Cropping system - alternative crops – length of rotation
- Alternative crops
- Target pests and diseases
- Extent to which crop rotation is practiced
- Factors that limit practicing effective rotation systems

- 3 tobacco types (Burley, Flue-cured Virginia, Oriental)
- Small and large scale farming
- 23 countries

(Collective production of ca. 75% of global leaf)

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Argentina (Misiones)	Iran (3 regions)	Tanzania
Brazil	Italy (Verona)	Thailand (2 regions)
Bulgaria	Japan	Turkey
China (3 regions)	Kenya	USA (NC,GA,KY&TN,SC)
France	Macedonia, Rep. of	Vietnam
Croatia	Malawi	Zambia
India (4 regions)	Poland	Zimbabwe
Indonesia (2 regions)	Switzerland	

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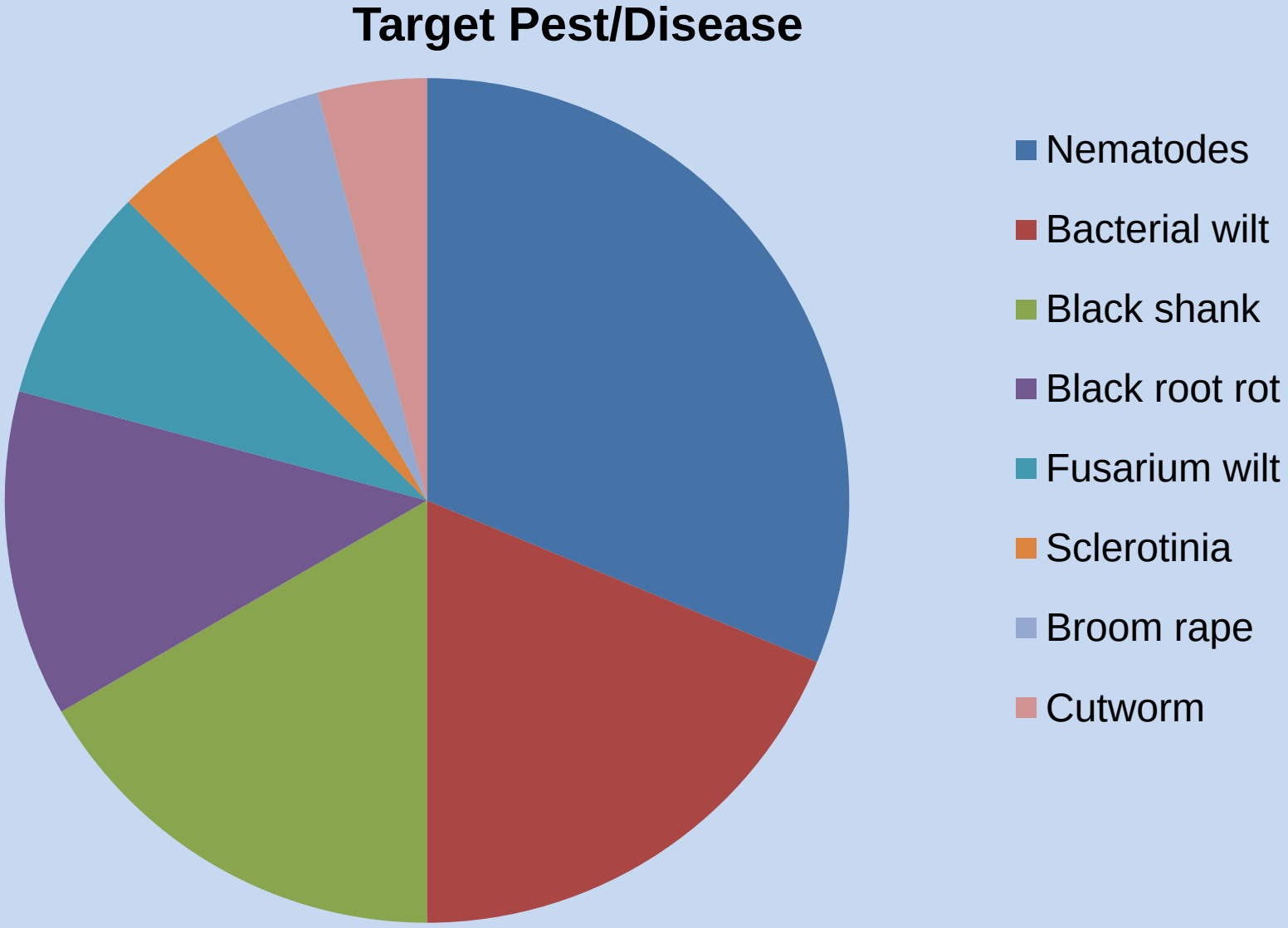

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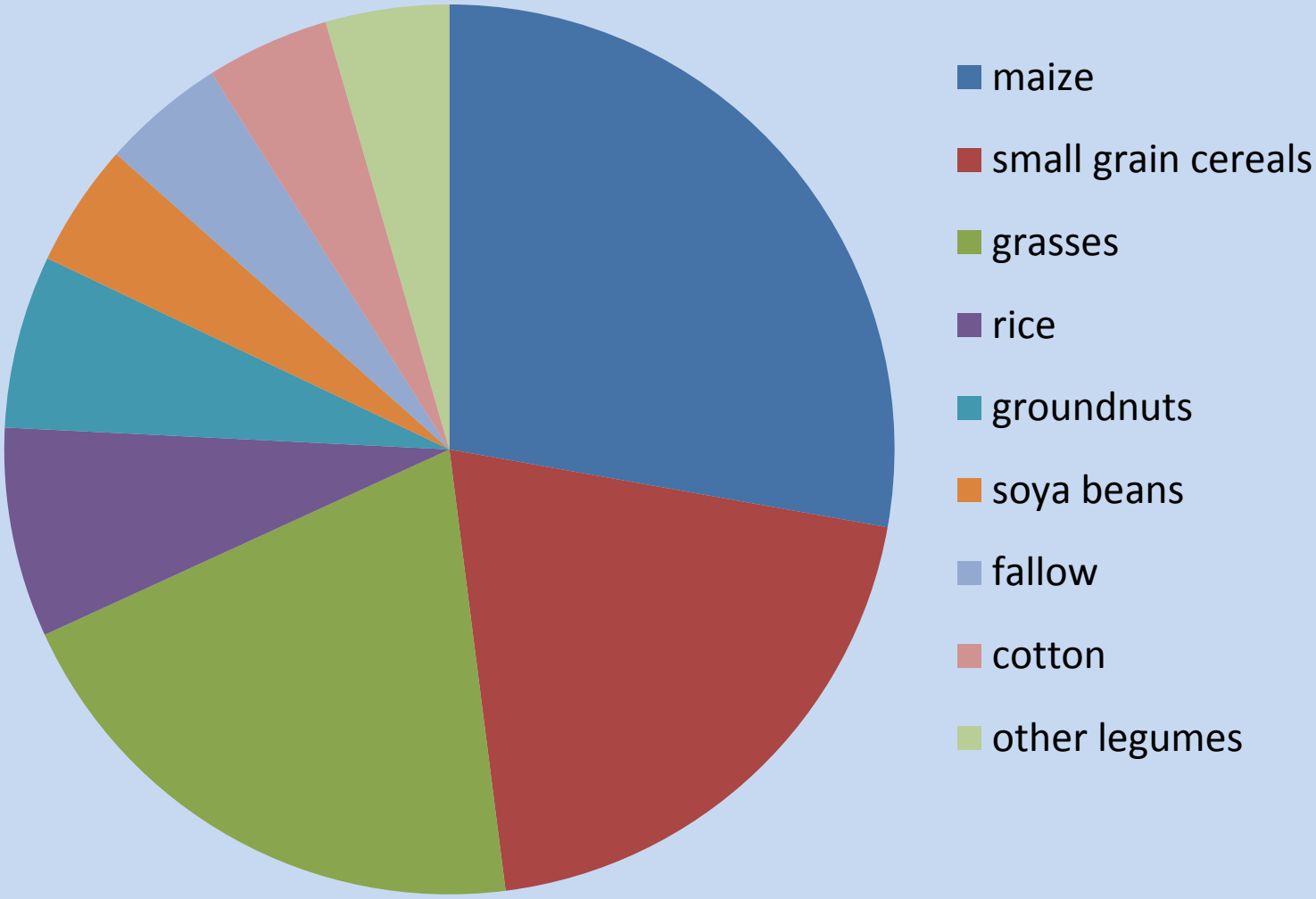
Recommended alternative crops



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- ✓ **Rotation systems recommended locally are applied to ca. 60% of the total crop produced by responding countries.**
- ✓ **“Other” systems are applied to ca. 35% of total crop.**
- ✓ **ca. 5% of total crop is continuous tobacco.**
- ✓ **Length of rotation varies from:**
  tobacco-other crop in one year to
  tobacco – 3-4 years other crop(s).

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Reasons for not following 'recommended rotations' (in order of reported frequency):

- **Farms too small**
- **Land rented, often on short term**
- **Land tenure insecure, risk of eviction, political instability**
- **Insufficient return from recommended alternative crops**
- **High cost of alternative crops (seed, additional equipment, etc.)**
- **New, resistant tobacco varieties and crop protection agents (CPA's) diminishes need to follow 'recommended' rotation practices**
- **Improved cultural practices (e.g. irrigation) that enables crop to be grown when pest/disease pressure relatively small**

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Reasons for not following 'recommended rotations' (in order of reported frequency):

- **Insufficient land for expansion**
- **Investment in land at risk as a result of political instability**
- **Pest/disease control by CPA's considered to be sufficient**
- **No irrigation available for alternative crops where off-season dry**
- **Legislation protecting sustainable practices not being enacted**
- **Insufficient/inadequate extension and training services**

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Discussion

- Alternative crops in recommended systems
- Length of rotation
- Other systems
- Small scale growers
- Value of information

Acknowledgements

Argentina	Irno Mallmann	**Kenya**	Chris. Bishop
Brazil	Claudier Lorincetti	**Macedonia, Rep. of**	Robert Cvejoski
Bulgaria	Sava Savos	**Malawi**	Chris.Bishop
Croatia	Vinko Kozumplik Ana Budimir Milko Boic	**Poland**	Teresa Doroseweka
China	Jianping Xie	**Switzerland**	Alber Gernod
France	Catherine Poisson Jean-Luc Goudoneche	**Tanzania**	Chris. Grant
India	T. Lakshni Narasaiah V. Krishnamurthry	**Turkey**	Jim Suggs Simon Grant
Indonesia	Laerte Elis Costa Amarildo Zampiva	**Turkey**	Catia Altintas
Iran	Douglas Naraway	**Vietnam**	Udula Dassanyaka
Italy	Claudia Berardi	**Zambia**	Chris. Bishop
Japan	Kazuhara Koga Haruyada Harada	**Zimbabwe**	Chris. Sheppard

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- ✓ NC State University Flue-Cured Tobacco Guide, 2013
- ✓ NC State University Burley Tobacco Guide, 2013
- ✓ South Carolina Tobacco Growers Guide, 2012
- ✓ University of Georgia Co-operative Extension – Tobacco, 2013
- ✓ Kentucky and Tennessee Tobacco Production Guide, 2013 – 2014
- ✓ Tobacco Research Board (Zimbabwe) – Recommendations
- ✓ Aromatic Virginia Tobacco (Italy) – Gino Cristanini
- ✓ Tobacco – Production, Chemistry and Technology – Layten Davis & Mark Nielsen, 1999

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