

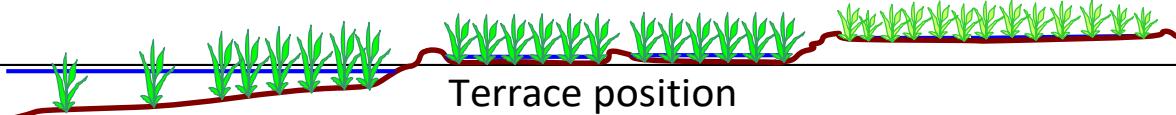
5. Achievement:

Total of 38 varieties were released sine 1993

| | |
|------------------------------|--|
| 1993: TDK1, TDK2 | 2007: TDK10, |
| 1994: PNG1 | 2008: TDK11, TSN5, TSN6, TSN7 |
| 1995: PNG2 | 2010: TSN8, TSN9, Homsavan |
| 1997: TDK3 | 2012: XBF1 (Sub1) |
| 1998: TDK4, TSN1, NTN1 | 2014: VTE450-1, VTE450-2, TDK13 |
| 2000: TDK5 | 2015: XBF2 (Sub1) and XBF3 |
| 2002: PNG3 | 2016: Hom TDK1 |
| 2003: TDK6, TDK7 | 2018: XBF4 (Sub1) and Hom TDK2 (Sub1) |
| 2004: TSN2, TSN3, TSN4 | |
| 2005: TDK8, PNG3, PNG5, PNG6 | |
| 2006: TDK9. PNG7 | |

Remark: TDK=Tadokkham PNG=PHongnam, TSN=Thasano, NTN=Namthan,
XBF=Xebangfai

Generally recommended varieties for wet and dry seasons at different terrace positions in regions in Lao PDR



| Season | Regions | Terrace position | | |
|--------|---------------|---|---|--|
| | | Lower | Middle | Top |
| WS | Northern | TDK1, TDK5, TDK6, TDK11, TDK8, RD10, Kai Noi | | |
| WS | Central-upper | RD6*, RD8, TDK10, XBF3*, XBF4* | TDK1, TDK8, TDK6, TSN1, VTE450-1*, TDK4, VTE450-2, KDML105, RD15, Hom Nang Nouane, Chao Dok Dou, XBF1, XBF4* | TDK9*, TDK11, TDK8 TDK12, RD10, XBF2 |
| WS | Central-lower | RD6*, TDK10, XBF3*, XBF4* | TDK1, TDK8, TDK6, PNG1, TSN3, TSN1, TSN5, XBF1, XBF4* | TDK9*, RD15, TDK11, TDK8 PNG1, PNG3, TDK12, RD10, XBF2 |
| WS | Southern | RD6*, TDK10, XBF3*, XBF4* | TDK1, TDK8, TDK6, PNG1, TSN3, PNG5, Chao Dok Dou, PNG6, KDML105*, XBF1, XBF4* | TDK9*, TDK11, PNG1, PNG3, TDK12, RD10, KDML105*, XBF2, TDK8 |
| DS | Whole | TDK1, TDK5, TDK11, TDK6, TDK8, TSN3, TSN5, PNG1, PNG5, PNG6, NTN1, RD10, XBF1, XBF2 | | |

*=photoperiod sensitivity

27/3/2019

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Specific variety recommendations for potential problem areas/special target characters

| Problem/Character | Varieties name |
|--------------------|---|
| Low temp | TDK5, TDK6, TDK8, TDK11 |
| Flood prone | XBF1, XBF2, XBF4 |
| Drought-prone | TDK9, TDK11, TDK12, PNG1, PNG3, XBF1, XBF2 |
| Salinity areas | KDML105 |
| Fe toxicity areas | TDK10, TSN1, Muangnga, TDK9, Doktiew, RD10 |
| Low soil fertility | TDK9, TDK11, TDK12, TSN1, KDML105 |
| GM problem | Muang-nga, Takhiat, Laykeaw, Muangnga-improved |
| Aroma G | RD6, Khainoi, Homnangnuan, HTDK2, XBF4 |
| Aroma NG | KDML105, XBF2, XBF3 |

Description of pest and disease tolerance.

| Improved variety | Growth duration/FI date | BPH | BI | BLB | NB | BD | GLH | GM | Fe tox |
|------------------|-------------------------|-----|----|-----|----|----|-----|----|--------|
| VTE450-2 | 135-140 | na | na | na | na | R | na | S | Na |
| VTE450-1* | Late Sept | na | na | na | na | R | na | S | Na |
| TDK8 | 135-140 | MS | MR | MR | MS | R | S | S | MS |
| XBF1 | 140-145 | R | MR | MR | S | R | S | S | S |
| TSN5 | 135-140 | | R | | | | | | |
| TDK12 | Early Oct | S | MS | MS | MS | R | S | NA | MT |
| TDK11 | 135-140 | MS | R | MR | MR | R | S | S | T |
| TDK9 | Late Sept | S | R | MR | MS | R | na | S | T |
| TDK10 | Mid Oct | S | R | R | MS | R | S | S | T |
| PNG3 | 130-135 | T | MR | S | MS | R | S | S | MT |
| PNG5 | 125-130 | S | S | MR | S | R | S | S | MT |
| PNG6 | 130-135 | S | R | MR | MS | R | S | S | MT |
| TSN2 | 130-135 | S | MR | MR | MS | R | S | S | MS |
| Homsavanh | Mid Oct | na | na | na | na | Na | na | na | Na |
| TSN4 | 125-130 | S | S | S | MS | R | S | S | MS |
| TDK6 | 135-140 | MS | MS | MR | MS | R | MS | MS | MT |
| TDK5 | 125-130 | MS | MS | MR | MS | R | MS | S | MT |
| TDK4 | Mid Oct | MR | MR | R | MR | R | S | S | S |
| TSN1 | 140-145 | MS | MR | MR | MS | R | MS | MS | T |
| NTN1 | 130-135 | MS | MS | MS | S | R | MS | S | MS |
| PNG2 | Mid Oct | S | S | S | S | R | S | S | T |
| TDK1 | 135-140 | MR | MR | MR | S | S | S | MS | S |
| PNG1 | 125-130 | S | R | MR | S | R | R | MS | T |
| RD10 | Mid Oct | S | S | S | S | R | S | S | T |
| KDML105 | Mid Oct | S | S | S | S | R | S | S | T |
| RD6 | Mid Oct | MS | S | MS | MS | R | S | S | MT |
| RD8 | Late Oct | | | | | | | | |
| TSN3 | 135-140 | | | | | | | | |
| RD15 | Early Oct | | | | | | | | |
| XBF2 | 125-130 | MS | R | MS | R | MR | MS | MS | MT |
| XBF3 | Late October | MS | R | MS | R | MR | MS | MS | MT |
| XBF4 | Early October | R | R | MS | R | MR | MS | MS | MT |

9 varieties were registered in DOA, TDK8, TDK11, VTE450-1, VET450-2, TDK13, Homsavan, XBF1, XBF2 and XBF3

เอกสารนี้เป็นของ
นายสมชาย ใจดี บ้านเลขที่ ๑๐๘
หมู่ที่ ๑ ถนนสุขุมวิท แขวงคลองเตย เขตคลองเตย กรุงเทพมหานคร
จังหวัดกรุงเทพมหานคร ๑๐๑๕ ประเทศไทย
โทรศัพท์ ๐๘๑-๒๓๔๕๖๗๘๙

6. Conclusion

- So far, there is no Intellectual Property Right for new crop, issue by Ministry of Science and Technology (no IP law yet).
- Government promote private company to work on crop breeding, but so far no activate company working on breeding.
- Four PhD in plant breeding, only two is taking an action as plant breeder.
- Breeder did not get any direct benefit from developing new crop varieties.
- Government promote private sector to work on seed business, but breeder did not get any benefit from this business.

Field experiment Nongbok district, in Xebangfai flood plain, 2011



After flooding 3 days



After flooding 7 days



After flooding 21 days

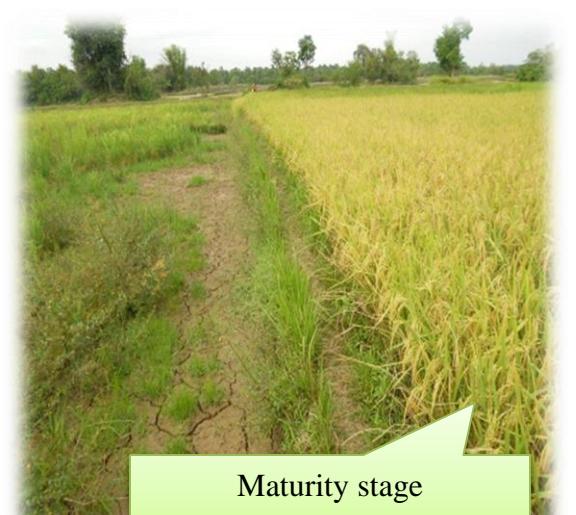
Flood 18 days from August 6 to 23, 2011



After flooding 41 days



Flowering stage



Maturity stage

Field experiment Nongbok district, in Xebangfai flood plain, 2011



Flood 18 days from August 6 to 23, 2011

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Field experiment Nongbok district, in Xebangfai flood plain, 2011



Field experiment Nongbok district, in Xebangfai flood plain, 2011



XBF4



Climate resilience rice varieties



New climate resilience line test in Khammouane province, WS 2018, survival after flood 18 days (28/7 to 15/8, 2018)



Thank you