1. **Capacity and needs in the detection and identification of living modified organisms (LMOs) in Malaysia**

|  |  |
| --- | --- |
| **Capacity** | **Needs** |
| Limited man power for detection and identification of LMOs | The number of experts available for detection and identification of LMO need to be increased. |
| The number of skilled technicians available on LMO detection need to be increased. |
| The number of training for the skilled technicians on LMO detection need to be increased.  |
| Limited detection and Identification methods of LMOs | The number of detection and identification methods of LMOs available in Malaysia need to be increased in parallel with LMOs development globally |
| The number of accessibility to the detection and identification of LMO methods developed by the technology developers need to be increased. |
| Limited laboratory facilities for LMOs detection and identification | The number of laboratory for LMOs detection and identification need to be increased (to date, only 3 laboratories involved in detection of LMOs include 1 laboratory for LMOs identification)) |
| Method being used by detection laboratories(current methods being used are conventional PCR and qPCR)  | Availability/Increased using faster detection methods for;1. single LMO target (e.g., loop-mediated isothermal amplification),
2. simultaneous detections of multiple LMO targets (e.g., PCR capillary gel electrophoresis, microarray, and Luminex),
3. more accurate quantification of LMO targets (e.g., digital PCR),
4. characterization of partially known (e.g., DNA walking and Next Generation Sequencing (NGS)) or
5. unknown LMO
 |
| Capacity for sampling sample for LMO detection (since good sampling is the first step in successful detection and identification of LMO) | Development of Specific Standard Operational Procedures (SOP) for sampling. |
| The number of training for the skilled technicians on sampling need to be increased.  |

1. **List of laboratories for detection and identification of LMO in Malaysia and their specific activities.**

|  |  |
| --- | --- |
| **Laboratory** | **Specific activity(s)** |
| Unit GMO,Jabatan Kimia Malaysia,Petaling Jaya, Selangor. | 1. LMOs detection
2. LMOs identification
 |
| Makmal Kesihatan Awam KebangsaanSungai Buloh, Selangor | LMOs detection |
| Makmal Genetik, FRIMKepong, Selangor | LMOs detection |